

2022 INTERNATIONAL BUSINESS CONFERENCE

CONFERENCE PROCEEDINGS



PUBLISHER

NORTH-WEST UNIVERSITY

ISBN

PRINT - 978-0-6397-2193-4

ELECTRONIC - 978-0-6397-2194-1

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LETTER FROM THE EDITOR

“A total of 144 competitive papers are published in the 15th IBC Conference Proceedings of 2022, signifying a success rate of 82.8%.”

Dear IBC Delegate,

As editor and on behalf of the publisher (North-West University Business School, NWU, Potchefstroom), it is my absolute pleasure to welcome your research into the 2022 conference proceedings of the 15th IBC Conference. The review processes have been stringent and only quality papers are included in this proceedings.

The review policy (which also appears in these proceedings) was stringently followed. In 2022, a total of 174 competitive papers were received, representing 19 local and 5 foreign institutions from 6 countries. Of these, 29 (16.6%) were rejected, including two papers that were transferred to Work-in-progress status. Therefore, a total of 145 competitive papers are published in the 15th IBC Conference Program of 2022, signifying a success rate of 82.8%. Some 54 Work-In-Progress papers have been accepted by developing researchers.

Specific managerial interventions that encouraged delegates to upgrade their research were initiated 13 years ago. At the same time, research guidance was also launched to assist younger (and more experienced) researchers. Resultantly, there was a remarkable improvement in the quality of the competitive papers presented at conferences. These will interventions continue in the years to come.

Finally, I would like to thank all the authors for all their hard work. A hearty well-done on your accepted papers that are deservedly published in this proceedings! I do not doubt that the quality of the papers adheres to the required standards befitting a leading academic conference such as the 15th International Business Conference.

Best regards,
Prof Christo Bisschoff



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IBC COMPETITIVE PAPER REVIEW POLICY

The quality control and review process of the International Business Conference consists, regarding competitive papers, of a number of steps. These are:

1. On acceptance of the paper it is desk reviewed by either the editor or a member of the academic committee. This is to weed out obvious flawed papers and also to ensure that papers are befitting the conference themes and management.
2. Desk rejected papers are returned to authors with comments. Accepted papers, on the other hand, are dispatched for a double blind review by local and international academia. The requirements of reviewers include publishing experience as well as at least a Master's degree as the minimum academic qualification. In addition, management experts from industry with a similar academic qualification and applied knowledge may also serve as reviewers. Positive reviewers' reports from both reviewers are required for a paper to be accepted.
3. Although the IBC strive to have all papers reviewed by one local and one international reviewer to ensure a quality review process, two fitting local (or two international) reviewers could also review a paper independently.
4. In the case where one reviewer accepts and the other rejects the paper, such a paper is subjected to a third and final review at a senior independent reviewer.
5. Accepted papers are returned to the authors with the anonymous reviews (2).
6. Authors are required to provide proof the corrections made as suggested by the reviewers. This includes an additional document dealing with reviewers' comments and actions taken to address these comments.
7. All final papers are required to be properly language and technically edited. Proof of language editing is required with the submission of the final paper.
8. Once the Academic Committee accepts the corrections made in (6) above, the paper is accepted for publication in the conference proceedings.
9. Only papers that have not been published before/elsewhere are considered for presentation and publication by the IBC. Authors are required to sign a declaration in this regard.
10. If a paper is rejected as a competitive paper, the authors could apply to the Academic Committee for the paper to be presented at the conference as a non-competitive or work-in-progress paper. These papers are not published in the proceedings and clearly indicated on the programme as a non-competitive paper.
11. Only papers presented at the conference are published in the proceedings.

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AGRICULTURAL MANAGEMENT



The Visualisation of Animal Family Trees to Assist Farmers' Buying Decisions at Auctions

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Keywords

Cattle family trees;
Data visualisations;
Decision Support Systems;
Data centric framework;
IaaS.

Abstract

The agricultural sector in South Africa is a major contributor to the gross domestic product with livestock farming being a substantial component. Livestock is purchased at auctions and farmers require all available data sets for animal off-taking. In a previous research study, a data centric framework (DCF) for animal trading decision support was developed for cattle farmers, which could be used to predict the price of cattle at auctions. The DCF included a visualisation component for animal family trees.

The implementation of the DCF required that the requirements for the visualisation of cattle family trees be determined for farmers. The Design Science Research Methodology was used to acquire requirements for animal family trees from cattle farmers in South Africa. An online questionnaire was developed showing various information requirements and visualisation options for cattle family trees. The findings show that farmers prefer a cattle family tree visualisation showing three generations, which is different from the one currently being used in auction catalogues. The selected cattle family tree visualisation will be implemented in an online application, combining other catalogue information to assist farmers in their purchase decisions at auctions.

1. Introduction

The world population is estimated to increase to almost 10 billion people by the year 2050, subsequently increasing agricultural demand (FAO, 2017). The demand for milk and meat is also expected to increase due to rapidly growing urban populations and a change in consumer needs. Technological advancements have vastly improved human lives from better medical enhancements to enormous progress in the agricultural sector to create a world free of hunger and malnutrition as stipulated by the 2030 Agenda for Sustainable Development. The second Sustainable Development Goal (SDG 2) aims to end hunger and malnutrition, achieve food security and promote sustainable agriculture by 2030. The 2030 Agenda acknowledges that SDG 2 is particularly important and the success of other SDGs (Sustainable Development Goals) is highly dependent on achieving food security and the promotion of sustainable agriculture. The agricultural sector provides food, employment, foreign currency and raw materials and contributes to the GDP of South Africa (Van Zyl, Nel & Groenewald, 2010).

Agriculture has the capacity to uplift the economy of any country, however for developing countries agriculture plays an important role. According to Statistics SA, South Africa derived three hundred and fifty one billion rand in the agriculture and related services industry in 2019 with animals and animal products contributing almost half (44%) of the sales and cattle contributing the largest percentage (Stats SA, 2019). Livestock farming contributes 48% of the country's agricultural output

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with a total of 14 million head of cattle comprising 80% beef and 20% dairy (South Africa Yearbook-Agriculture, 2018). Livestock farming requires large capital investments with a low return on investment, so investing in breeds that possess superior traits is crucial to the success of the farming venture (du Toit, 2022).

Livestock farming in South Africa has a long history with cattle, sheep, pigs, goats and chickens being kept by the people of Southern Africa (Casey, 2021). Cattle are a major part of many lives and cultures in South Africa as they are regarded as a major household asset, because they provide food and nutrition, income, manure for other farming endeavours and hides for shoes and clothes. Cattle also participate in several socio-cultural roles such as appeasement of ancestors and payment of lobola in addition to providing much-needed nutrition to millions of people.

Cattle farmers in SA can be stud farmers or commercial farmers. The stud farmers may also have a commercial herd where they place animals that fail to meet the criteria set for stud keeping (du Toit, 2022). Stud farmers keep pure-bred animals of a certain breed, such as Afrikaner, Angus, Brahman, Jersey or Nguni. Commercial cattle farmers, on the other hand, make use of stud cattle by buying bulls or semen to improve certain traits peculiar to that breed in their own cattle herds. Superior quality genetics are important to improve a given herd hence cattle farmers are always striving to get value for their money.

Livestock farmers in SA who want to sell or buy animals have many options. They can advertise on Sasfox (South African Small Farmers Online Exchange) and conduct a private sale or use the auction route, abattoirs and butcheries. Livestock auctions are an important part of livestock farming as they provide farmers with a platform to buy and sell animals, also called off-taking. Livestock auctions sell a mixture of animals, amongst them beef and dairy cattle. The livestock auctioneering companies supply calendars with information, such as dates and venues. They also furnish auction attendees with catalogues advertising the various animals on sale.

At a stud auction, animals with special breeding traits are for sale (Figure 1). The auctioneer works closely with a breed society to select the best quality animals with superior traits. Reputable auctioneers have websites, for example Bonsmara SA, Hobson & Co, that are easy to access. A Google search for livestock auctions in SA will indicate the number of auctions.



Figure 1. Greendale Brangus production sale
(<https://www.farmersweekly.co.za/auctions-events/>).

In most cases animals must be transported to and from the auction house and certain outbreaks in diseases, such as foot and mouth disease can hinder the normal way of conducting auctions, called

open cry auctions. Recently, due to the global pandemic Covid-19, auctioneers were left with no alternative but to look at other ways of running the physical auction, they used digital technologies and introduced online auctions. Dr. Cobus Oberholster, in an interview with Farmer's Weekly (2022), said there was an increase in the number of farmers preferring digital auctions to open cry ones (Coleman, 2020). He went on to predict a further growth in digital auctions in the next two to three years, largely because of the advantages associated with them such as, a reduction in travelling expenses, easy access from anywhere in the world and a reduction of stress levels of the animals, amongst other advantages.

For cattle farmers and traders to be able to make use of auction catalogues and get value for their money, there is a need for good visualisation of the animal's genetic makeup. The visualisation of the animal's family tree, as well as its physical attributes, are crucial to assist farmers to make a buying decision and get the most suitable animal for their venture. Recently in South Africa, a Bonsmara bull was sold for R2,1 million at an auction (Marais, 2022). Farmers need assurance that when they invest in an animal that it is a genetically superior animal, which will also produce genetically superior offspring.

A data centric framework for animal trading decision support was developed by Nyamutsambira et al. (2021). A major component of the framework (Figure 3) was the visualisation application proposed for use by farmers at auctions. The visualisation component included the visualisation of cattle family trees, including additional catalogue information requirements of farmers. However, the cattle family tree visualisation and information requirements of farmers have not been determined. The aim of this study was to obtain these requirements.

2. Problem Investigated

The predicted rise in online auctions (Coleman, 2020), will require farmers to be comfortable with using online technologies. Farmers need to study animal family trees and understand the breeding values and related data that accompany them. An animal's breeding value is defined as the genetic merit for each trait calculated using Best Linear Unbiased Prediction (BLUP) technology (Breedplan, 2015). Breeding values are estimated and are based on the amount of information recorded for that animal and are then called Estimated Breeding Values (EBVs) (Oldenbroek & Van Der Waaij, 2014). Farmers need to choose the best animals for their breeding objectives and a large amount of information is recorded on livestock performance and pedigree, to assist farmers with purchasing decisions. Prior to an auction, farmers are furnished with auction catalogues that contain a picture of the animal, pedigree and performance data of the animal on auction (Figure 2), however some farmers do not always know how to interpret the information in the catalogues or require additional information (Jordaan, 2016). The auction catalogues generally contain a picture of the animal on auction with some ancestry information. The problem identified in this study is that the data and requirements for the visualisation of animal family trees have not been determined from the farmer's perspective.

3. Research Objectives

Farmers can attend an auction in person, however the animal auctioneering trend presently is to provide an online option as well. Presently, the auctioneering organisation will provide a catalogue (Figure 2) of the animals being auctioned for use by farmers bidding at an auction. The authors could not find any study conducted in SA that surveyed farmers to determine their auction catalogue information requirements.

The main objective of this paper is to elicit requirements for cattle family trees for use at auctions as well as for the data centric framework for an animal trading decision support application (Figure 3) being developed to assist farmers with their purchasing decisions. As the first study done in SA to obtain such requirements, the aim was to survey farmers on their animal information and visualisation requirements to be used at auctions for making purchasing decisions. The information requirements can be recorded for use in auction catalogues and the proposed online application, being developed as

part of this study. The research objective addressed in this study is to determine what information and animal visualisation requirements farmers want when attending auctions.

4. Literature Review

The African continent hosts several indigenous breeds of cattle that come in all shapes and sizes from the Ethiopian Boran to the Ankole in Uganda, the Kamba in Kenya, the Tuli and Mashona in Zimbabwe and the Nguni and Afrikaner in South Africa. However, these indigenous breeds with their superior traits, are disappearing (Dessie & Mwai, 2019). In addition to these indigenous breeds, Africa is also home to many imported breeds like the Aberdeen Angus from Scotland, Limousin from France, Brahman from the USA and many others. Africa contributes a fifth to the world's cattle numbers (Dessie & Mwai, 2019), which is approximately 200 million head of cattle, given that world cattle population is around a billion (Statistica, 2022).

4.1. Importance of cattle

The lead author of this paper grew up in rural Zimbabwe where cattle were considered a symbol of wealth. Owning a herd of cattle was seen as a sign of wealth and the more cattle one had, the richer they were considered. Owning a herd of cattle had many advantages, such as easy access to labour, improving your social status and easily becoming the village head. It also included a general improvement to the owners' lives, as milk would be in abundance and could be easily exchanged for anything they needed. Cattle were slaughtered for most important life events, such as births, deaths, marriages and other celebrations, including Christmas, New Year and Easter holidays. Cattle represented a safety net and savings, milk and sour milk could be exchanged for other goods and services. Cattle could be sold to sponsor events in the family like education for the children or be rented out to help with transportation and buying of other farming requirements.

Well over a half billion people in Africa depend entirely or partially on farm animals with cattle being the main animal of choice because of the numerous products it can give and its size (World Economic Forum, 2019). While demand for milk, meat and eggs is growing modestly in developed countries, it is growing rapidly in Africa due to rising population and is projected to increase by 80% from 2010 to 2030 (World Economic Forum, 2019). This is going to put pressure on farmers to increase the production of livestock products to meet this predicted demand.

There are approximately 14 million head of cattle in South Africa (Stats SA, 2019), which is about 7% of Africa's total. Commercial and communal farming are common practice, where commercial is farming with more head of cattle, better farming equipment and practices and high turnover whereas communal farming involves insufficient resources and the rearing of mostly indigenous breeds of cattle (Malusi, Falowo & Idamokoro, 2021). Communal farming is mostly small-scale and used to meet the needs of the immediate family (Mashoko et al., 2007; Mapiye, et al., 2009).

In view of the information above, this study requires farmers, whether they are commercial or communal, who make use of auctions, to acquire new animals for their businesses. The animal of choice in this study is cattle because cattle in South Africa and Africa as a whole, meet the demands of providing much-needed nourishment as well as meeting economic objectives (Musemwa et al., 2010).

4.2. Livestock trading

The livestock sector is important for growth and value addition and globally contributes around 40% of agricultural GDP with developing countries contributing higher percentages (World Economic Forum, 2019). South Africa produces 21.4% of the total meat produced on the continent of Africa and 1% of global meat production (Cheteni & Mokhele, 2019). The goal of farmers, when they enter a farming enterprise, is to make a profit. Farmers usually find themselves wanting to buy or sell some of their livestock for numerous reasons.

Farmers have several avenues that they can use to buy or sell their animals, including abattoirs, butcheries, speculators, traditional farm gates and auctions (Musemwa et al., 2010; Ndoro, Mudhara

& Chimonyo, 2014). Butcheries and abattoirs are mostly used for selling meat and as such are not suitable for buying stock (Cheteni & Mokhele, 2019). Farmers thus have to make use of speculators, farm gates and auctions. Private sales involving farm gate marketing are out of the scope of this study. Speculators can be involved in a private sale or can be part of an auction and they try to decrease the price of an animal as much as they can (Cheteni & Mokhele, 2019), making them an unpopular market amongst farmers. Auctions are a major part of this study as they offer farmers and traders a platform for selling and buying stock, especially for stud farming.

Stud farmers keep cattle breeds with certain traits of interest. At stud auctions, farmers and traders buy and sell cattle with various traits that reach fair prices, depending on the traits and the needs of the buyer. Auctions provide a good market as they tend to be more regulated, unlike private sales and farmers can sell without any knowledge of the market (Kriel, 2021). Besides these advantages of auctions, there are some disadvantages (Agribook, 2022), which include: high transport costs to and from the auction venue; contraction of diseases in the pens; elevated level of stress for the animals; very time-consuming; auction prices are susceptible to manipulation and lastly farmers may feel pressured to sell at lower prices rather than incur returning transport costs. Some of these disadvantages have been eradicated by the advent of online auctions that are gaining traction according to Russell Luck, CEO of SwiftVee an online auction, in an interview with Farmer's Weekly (Kriel, 2021). Russell attributed the success of online auctions to modern technology, good assistance from Google and a good sales team.

4.3. Auctions and online auctions

Research by Ndoro et al. (2014) showed that South African beef cattle producers lack skills, knowledge and information to explore all markets available to them. With stud farming, the requirements for keeping pure bred animals entail that farmers join breeder's associations, record performance data and be abreast of current trends (Mueller et al., 2015). These requirements ensure that stud farmers get the support they need even when marketing their animals at auctions.

In South Africa, there are numerous livestock auction houses that have been operating for years, including BKB, Sheard Auctioneers, Hobson & Co and KLK Landbou Beperk. Recently there has been a rise in the online sales of livestock with the help of innovative technology, such as machine learning, artificial intelligence, live video streams and data analytics (Njiraini, 2022). A steady increase in online auctions has taken place the past two years due to the global COVID-19 pandemic and lockdowns and research studies showing that face to face auctions can spread animal diseases (Step et al., 2008; Stroebel et al., 2018; Kriel, 2021).

Auction houses have calendars to indicate the dates of the auctions and the venue with directions (Figure 1). There is the marketing officer who sources the livestock, the accountant who handles the finance, the roll clerk who records data about the seller, purchaser, animal and price and finally the labourers who take care of the animals and load them onto vehicles (Agribook, 2022).

Normally animals are branded with the owner's brand according to the Animal Identification Act, 2002, which states that it is compulsory to brand or tattoo one's own animals for identification purposes (South African Smallholder, 2021). Members of the SPCA often attend an auction to make sure all animals on sale are being treated well and to confiscate any animals that look like they are being abused or have been stolen.

There are various types of activities that can take place at an auction and these include special auctions, stud auctions and game auctions (Agribook, 2022). A special auction, which is requested by a seller to sell all their livestock, is known as a dispersal sale. A stud auction is the focus of this study. It is when animals possessing special traits are for sale and is performed by a specialised stud auctioneer. Catalogues containing the animal's family tree and its performance data are usually given out prior to the auction (Figure 2).

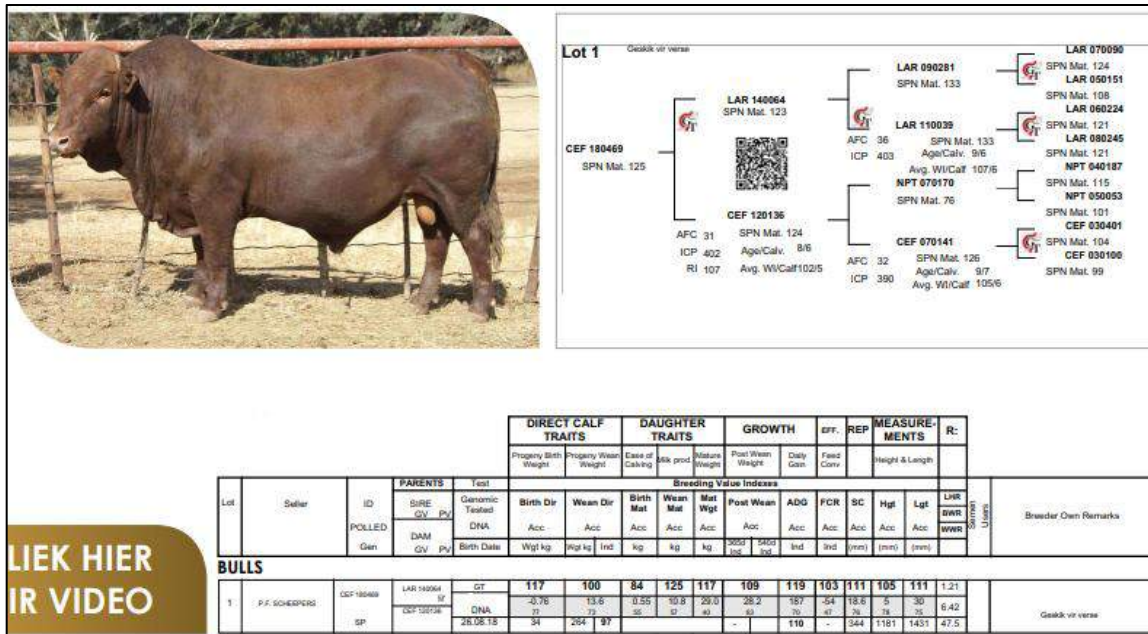


Figure 2. Pedigree and performance data for bull CEF 180469

4.4. Animal family trees and performance data

An auction can be a very intimidating place if you do not know your breeding objectives and the kind of animal that will improve your herd. When presented with an auction catalogue, the farmer must be able to read the pedigree as well as the performance data to make the best purchasing decision. At the auction, farmers are faced with majestic-looking animals that look very appealing to the eye but could be wrong additions to their herd. Farmers need to have the knowledge of the genetic makeup of the animals prior to the auction for them to make informed decisions (Jordaan, 2016).

Figure 2 shows a page in an auction catalogue, the information contained on this page is about bull CEF 180469. Immediately to the right of the bull's picture is its family tree and the table below has performance data that has been recorded for the bull. The numbers represent Estimated Breeding Values (EBVs) of the bull, these numbers are particularly important for a farmer to understand as they give an idea of the genetic merits of the animal.

For most farmers, auction catalogues are not so easy to interpret (Jordaan, 2016). The purpose of this research is to ask farmers the requirements that will help them interpret a catalogue better. The wrong choice of a bull can set a farmer back for years to come and he might not ever recover from the losses (Jordaan, 2016).

4.5. Proposed framework for cattle auction price reduction

This study is a continuation on a study that proposed a cattle trading data driven framework and Decision Support System (DSS) as shown in Figure 3. The focus of this paper is the data visualisation component of the data centric framework for animal trading decision support.

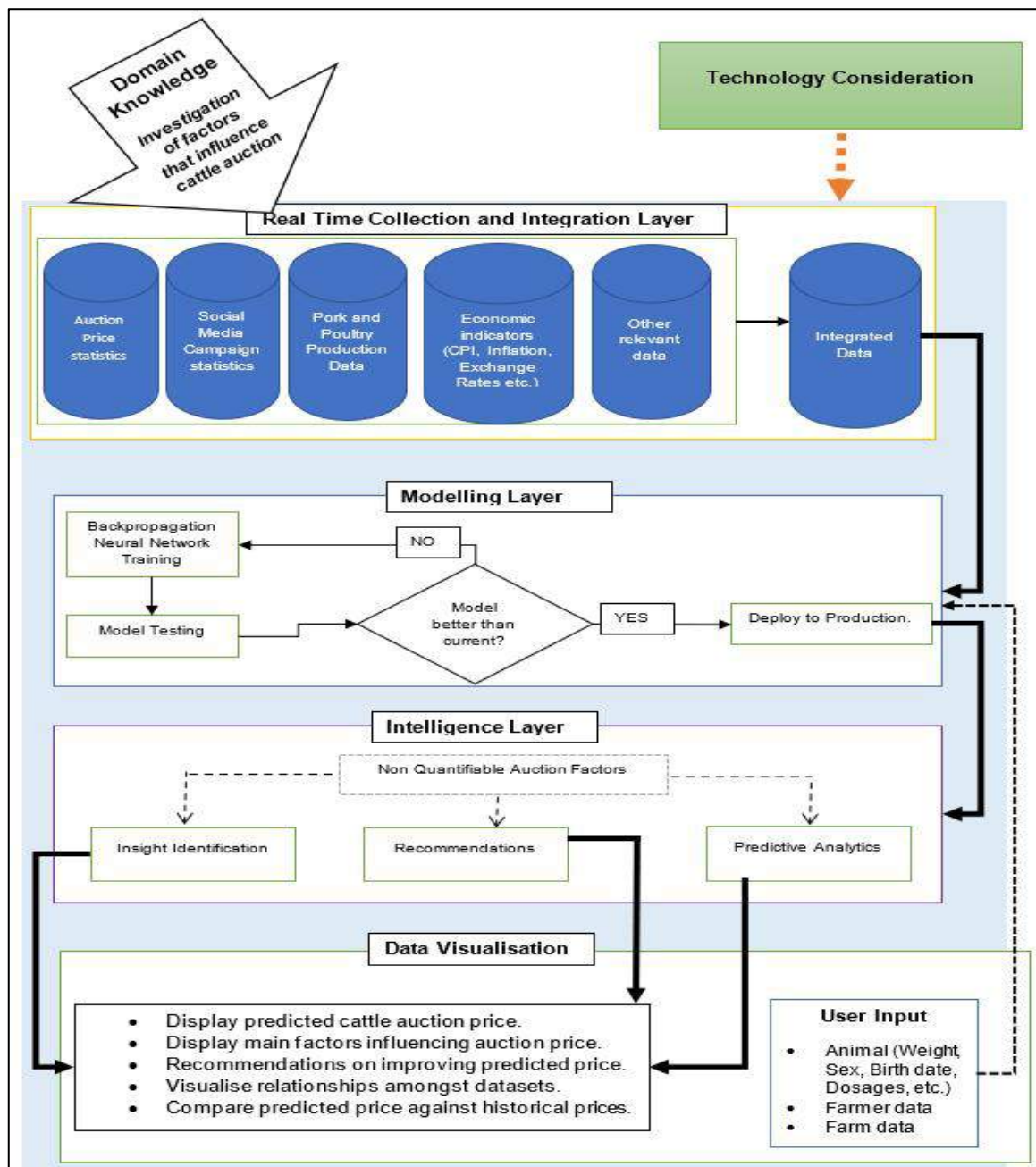


Figure 3: The data centric framework for animal trading decision support (Nyamutsambira et al., 2021)

Stud farmers record performance data for their pure-bred animals as a requirement from their breeder's societies and the SA Studbook (SA StudBook, 2022) as well as for use in breeding programmes for decision making (Kluyts et al., 2003). This data becomes the base of the performance data presented to auction attendees in catalogues as shown in Figure 2.

Technological enhancements have made it possible for farmers to record their animal performance data with ease (Weigel, Van Raden, Norman & Grosus, 2017). Data about the animal and its performance and farmer and farm data must be recorded consistently and ethically as it serves as the major input for the cattle trading DSS. This data can then be visualised to help farmers better understand the animal they want to purchase, establish market prices and do comparisons.

4.6. Information as a Service (IaaS)

Modern agricultural production is not possible without the implementation and use of modern technologies and reliable and up-to-date digital information about farm operations (Calitz et al., 2022).

The new way of thinking and operating for agricultural companies is through digital transformation that transforms the way the companies provide information, interact and communicate with customers (Aguera et al., 2020). Communication with farmers can be in the form of various channels, including Mobile Applications. Mobile Apps typically provide farmers with information services, including herd management (Karim et al., 2020). IaaS is an emerging cloud business model in which a company shares or sells relevant information to another company or individuals to perform their business (Calitz et al., 2022). Agricultural organisations must provide information services to farmers through their website, helpline and the use of other digital technologies to communicate with their customers with accurate information in a user-friendly way (Raza et al., 2020). Visualisation of cattle family trees will enhance the information organisations give to cattle breeders. Communication is the key to success in business because it builds solid relationships based on the effective and efficient exchange of information between two or more parties (Maharan, 2015).

4.7. Data visualisation and family tree visualisations

According to Statista (2022), the total amount of data created and consumed globally is expected to rise sharply from 64.2 to 180 zettabytes from 2020 to 2025. Data have been defined as the new oil in agriculture (Foidl, 2014; Loi & Dehaye, 2017; Sadowski, 2019; Lioutas & Charatsari, 2020). Big data are collected and used by most businesses and industries, including agriculture. In agriculture, large amounts of data must be collected and recorded for the efficient functioning of the farming enterprise (Botha, 2020; Wolfert et al., 2017). The use of modern technologies and Big Data in agriculture, introduces the concept of smart agriculture or smart farming (Kumar et al., 2019; Sadowski, 2019). This has the potential to increase productivity, decision making and enhance farming practices (Van Hertem et al., 2016).

Visualisation is the transformation of data and information into pictures and images. Data visualisation is defined as the graphical representation of data and information for easier comprehension (Steele & Iliinsky, 2010; Sodergard et al., 2021). Data visualisation is multi-faceted and is found in many disciplines and industries, including agriculture (Nguyen et al., 2017; Kumar et al., 2019). The process of data visualisation starts with the acquisition of data, its preparation, analysis and visualisations (Sodergard et al., 2012). Data visualisation assists with the exploration of large data sets and provides graphical representation of the data (Bokhare & Zainon, 2019).

Family data and family histories can be easily interpreted if represented in diagrams, called genealogy graphs or family trees. A family tree is a diagram representing the family relationships for a number of generations in a conventional tree structure. Most human family trees contain names, birth places and dates, pictures and death dates (if applicable). Free commercial software is available to aid family tree visualisations, such as MyHeritage, Ancestry and Findmypast. In addition, Microsoft (2020) provides templates for family tree visualisations (Figure 4). Existing techniques and applications for the visualisation of family trees have been extensively researched (Bokhare & Zainon, 2019).

Organisations such as Studbook (SA StudBook, 2022) records data of various cattle, including the animal's birthdate, birth weight, the parents and the traits of the parents. These data sets allows for the creation and visualisation of family trees of animals. Animal family trees (Figure 4) are different from human family trees as animals have more offspring and cattle genealogical records are more comprehensive than humans (Thompson Hall, 2013). There are a number of factors that contribute to cattle having more genealogical data than humans, such as:

- Gestation period of cattle is 283days, approximately 9 months, so they can have a calf every year;
- They can have calves from as early as two years old and their lifespan is 18-20years which means a single cow can have 16- 18 calves in its lifetime and even more if it has twins.

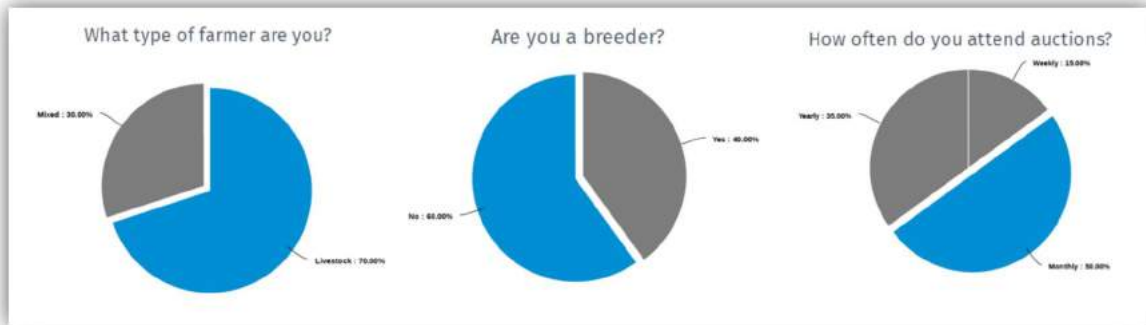


Figure 5: Visualisation of farmer responses

The fifth question had a list of traits that are often found in auction catalogues and farmers chose which ones were critical in helping with buying decisions (Table 1). The results show that farmers preferred the age, breed and sex of the animal to be necessary items in the catalogue with a total of 19 respondents out of the 20 choosing all three. This was followed by the weights from birth, weaning weight and mature weights specified by 17 respondents. Feed conversion rate with 15 respondents, identity number (n=14), length of animal (n=12), ease of calving (n=12), height (n=11), picture of animal (n=12) and finally milk production by 10 respondents. These responses represent what farmers perceived to be the most important to the least important for their buying decisions.

Table 1: Information to be included in cattle family tree

Cattle family tree visualisation	Count
Identity number	14
Age	20
Breed	20
Weight includes birth, wean and mature	17
Sex	20
Ease of calving	13
Milk production	11
Feed conversion rate	16
Picture of animal	12
Length	12
Height	11

These results present farmers' preferred attributes in order of importance, however since these farmers were not asked whether they were dairy farmers or beef farmers some attributes are more important to beef farmers and vice versa. Beef farmers would not choose milk production as a trait of importance to them, but dairy farmers would find it to be of high importance. Attributes that are equally important for both beef and dairy farmers like age, breed, sex/gender, weights and food conversion rates clearly that they are the most important as shown by the results in Table 1.

Three diagrams were presented to the farmers as shown by Figures 6, 7 and 8. Farmers had to pick their diagram of choice from the three and 80% (n=16) chose diagram 1 (Figure 6), 20% (n=4) chose diagram 2 (Figure 7) and no one chose diagram 3 (Figure 8). Figure 6 relates to human family trees (Figure 4) and Figure 7 includes information relating to the auction catalogues as shown in Figure 2.

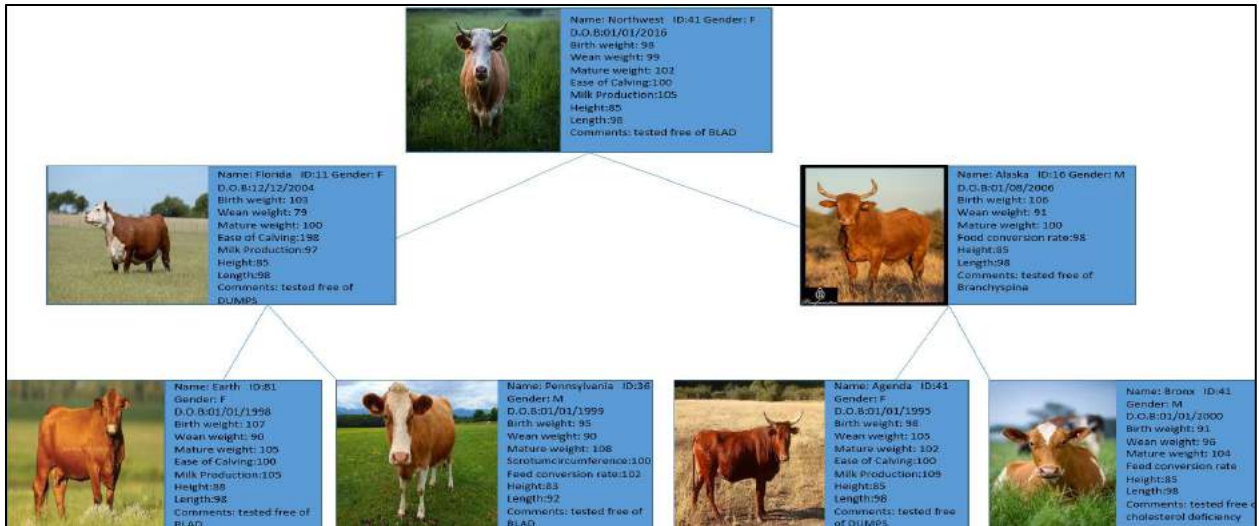


Figure 6: Proposed animal family tree visualisation - Diagram 1

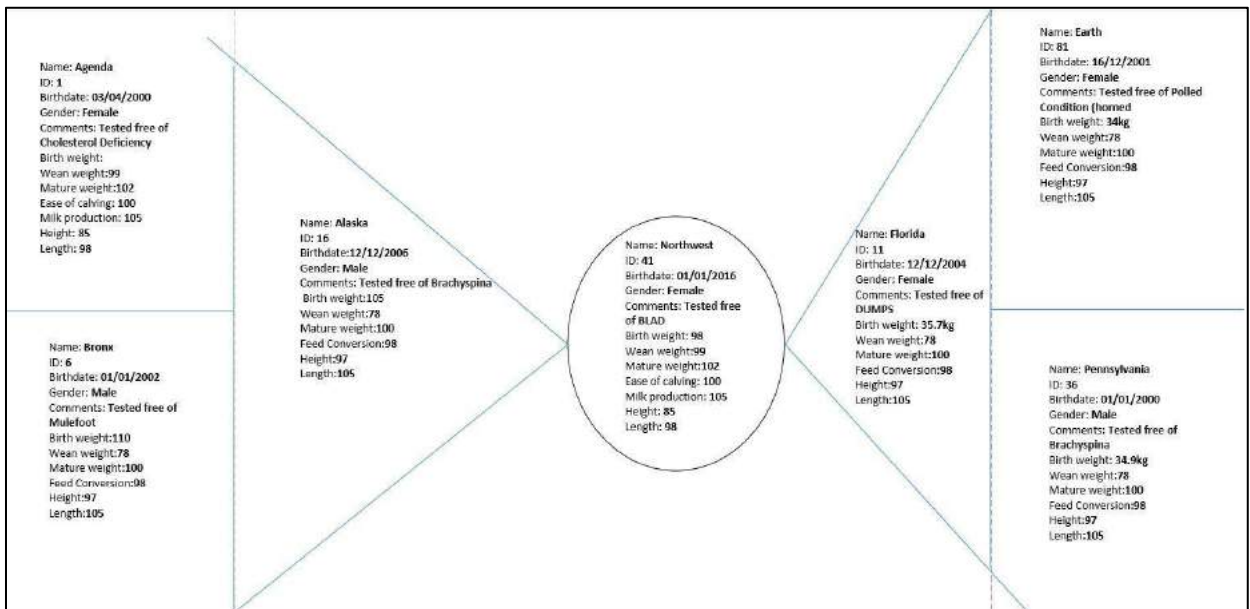


Figure 7: Proposed animal family tree visualisation – Diagram 2

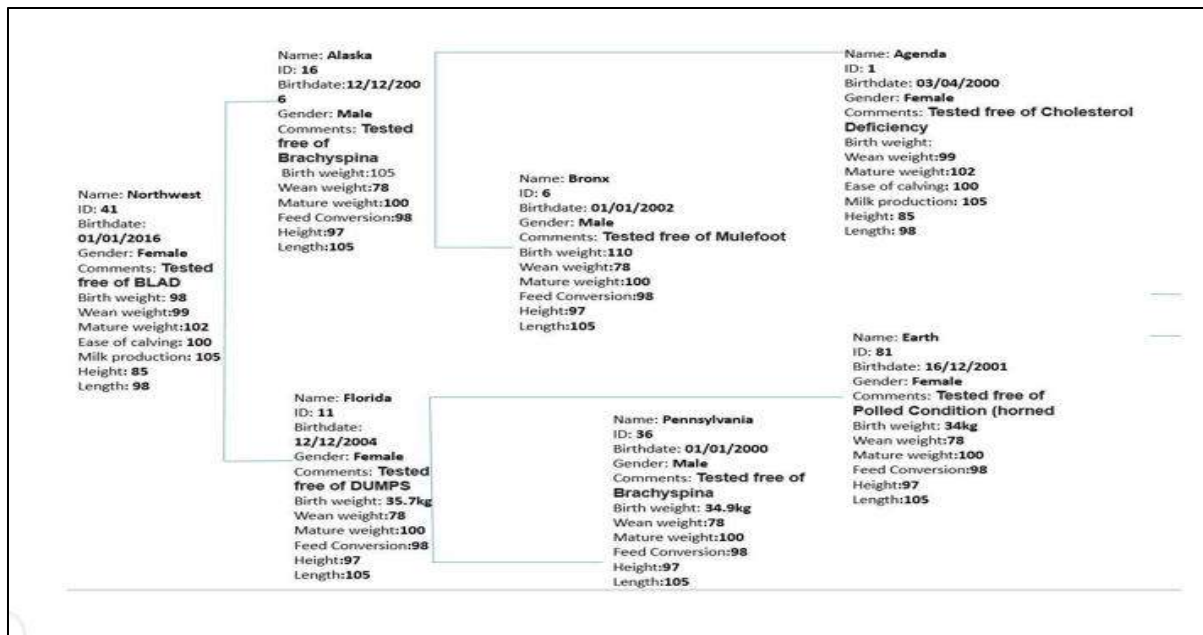


Figure 8: Proposed animal family tree visualisation – Diagram 3

6.1. Thematic analysis

The rest of the responses in the questionnaire on cattle family tree visualisations were qualitative and needed to be thematically analysed. According to Braun and Clarke (2008) thematic analysis offers a flexible way to analyse qualitative data. Braun and Clarke (2008) defined six phases of doing thematic analysis to aid those who are not so familiar with qualitative data and these are:

- Phase 1: Get familiar with the data, which involves reading and re-reading data to search for meanings before coding.
- Phase 2: Coding the data, this is after familiarisation with data, data are placed in codes that explain the main points from the data.
- Phase 3: Generating the themes, which takes place after coding, data with same codes will be clustered into themes.
- Phase 4: Reviewing the themes, which involves refining the themes and storytelling with the given data.
- Phase 5: Defining and naming themes, the final stage of the whole story the data are presenting before the final report.
- Phase 6: Involves telling the story to the intended audience in a report and emphasises the use of data extracts from the actual data involved in the analysis.

Table 2 shows extracts of the actual data during the thematic analysis of the textual responses. The results show that farmers need reproduction traits of animals in the catalogue as shown by 6 out of the 20 responses (30%). Other reproductive traits such as the ease of calving are already found in the catalogue (Figure 2). The respondents further wanted to know the number of services, days from calving to first service, days from first service to conception, days open, calf size and calf survival rate. Five of the respondents were satisfied with the catalogue as is. Six responses indicated that the animal pictures needed to show all the angles of the animal or include a video showing the animal in real life. Five responses showed an interest in knowing the previous owner and having the previous owner comment on the animal, for example rating its performance against the rest of the herd.

Table 2: Relating themes to literature and responses

Theme	Literature Support	Participant (P)
Catalogue	Bonsmara SA, 2019 BKB, 2021 SA Stud Book, 2022 Wagyu SA, 2019 Drakensberger Cattle Breeder's Society of SA, 2017	P1 “all items in BKB auction catalogue” P3 “none other than what is already there” P16 “Catalogue information”
Reproductive traits	Beef and Lamb New Zealand Genetics, 2017 The Global Standard For Livestock Data, 2018	P13 & 14 “reproductive traits” P9 “reproduction rates” P4 “days open, inter calving period-conception rate”
Previous owner information	FAO, 2018	P2 “previous owner” P6 “number of progeny-general remarks from owner for example progeny out of top 10% of own herd” P12 “traceability/movement report Inter calving period”
Pictures and videos	Lo, Hsieh and Chiu, 2013	P11 “All information on the present auction catalogue. I would like more pictures, previous owners, and a video clip showing the animal” P10 “I would like pictures from various angles” P7 “present auction data with photos (2-3) of animal”

One of the questions required the respondents to provide reasons for them selecting a specific diagram. Figure 6 was selected by 16 out of the 20 respondents (80%) and they indicated that they liked the fact that it was visual, had pictures of the animal and looked the same as a human family tree. All respondents indicated that they liked the diagram they chose because it showed three generations and had traits of the animal on the family tree. The last question asked respondents if they had any additional information they would like the researchers to take into consideration. The following are eight extracts provided by the participants (P):

1. P1 - “Provide family tree information live at auctions”.
2. P3 - “Provide information relevant to sustainable development of growth and reproduction”.
3. P4 - “Animals look better from the side than a photo direct from the front”.
4. P12 - “More pictures of the animal. Previous generations’ pictures. Provide this information online at the auction, especially previous generation data and pictures”.
5. P13 - “Provide the app online and on mobile phones”.
6. P15 - “The ability of the family tree to integrate with digital auction platform catalogue would be very helpful”.
7. P17 - “Comparison of trademarks of animal compared to national averages”.
8. P20 - “Good quality pictures and a side view of the animal is important”.

The current catalogue refers to the traits available in the existing auction catalogues, such as the one in Figure 2. It contains measurements such as height and length, daughter traits such as ease of milking, milk production, mature weight, FCR (food conversion rate), ADG (average daily gain) and many more (BKB, 2021). Figure 9 shows participant preferences as themes with frequency counts.

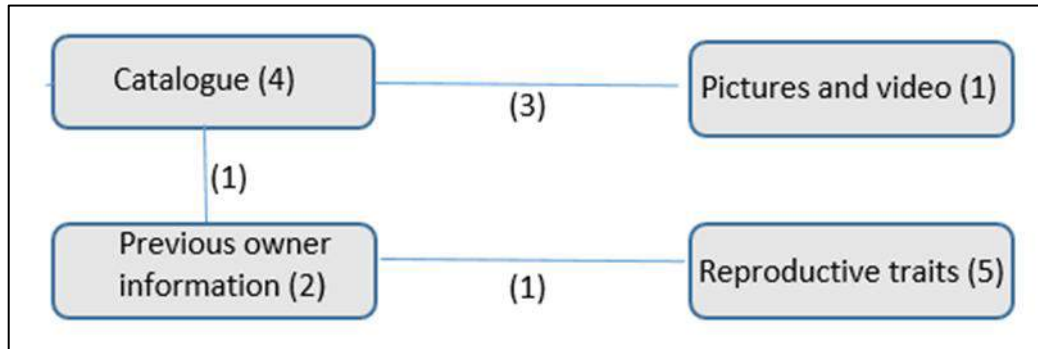


Figure 9: Participant preferences represented as themes

In Figure 9, inter calving period (ICP), days open, conception rate and reproductive traits were combined to form the theme reproductive traits. Some of these characteristics are found in the current catalogues of some of the auction houses, such as ICP, AFC (age at first calving) and scrotum circumference (Wagyu SA, 2019). The respondents were interested in knowing previous owners' information, movement reports and owner comments. One theme called previous owner comments stemmed from all these responses. The respondents suggested that using pictures or a video would help them to have a clearer idea of the animal on sale, especially in online auctions.

7. Managerial Implications

Buying livestock, especially cattle, at an auction can be very tricky if one is not aware of the traits of the given animal, hence the need for performance data and family trees that clearly show the genetic potential of the animal for sale (Jordaan, 2016). Farmers are provided with catalogues at auctions, showing the animals on show, however as shown in this study, the farmers require additional information and animal family tree visualisations to assist them in making purchasing decisions. One of the biggest shifts in farming over the past few years has been the move towards connectivity and the increase use of modern technologies (Botha, 2020). Existing auction catalogues providers now have to become data providers, data farmers can access in real-time at auctions.

The findings in this paper showed that farmers prefer an animal family tree with additional pictures of the animal on sale and its parents' pictures and information. The information presently included in catalogues at auctions (Figure 2) does not show any animal family tree pictures. The results of the study will now be used to implement the identified cattle family tree visualisations in an online application (App) that can be used by farmers at auctions. Managers, auctioneers, stud breeders, societies and agriculture organisations, such as BKB and Sheard Auctioneers, need to consider the farmers' information requirements and include the visualisations of the animal family tree in catalogues and in a mobile applications for farmers participating in auctions. IaaS will enhance relationships between farmers and agricultural organisations. Recommendations to farmers is that they need to record their livestock's history and use the animal family trees to keep track and market their livestock.

8. Conclusions, Limitations and Future Research

Farmers attend animal auctions regularly, including online auctions (Njiraini, 2022). Farmers are provided with a catalogue of the animals to be auctioned, containing important information and a picture of each animal available for off-taking (Figure 2). The objective of this paper was to investigate the requirements for the animal visualisation component in the data centric framework for animal trading decision support (Figure 3). The visualisation included the data requirements and the preferred cattle family tree visualisation presentation requirements from cattle farmers. The results showed that farmers would prefer additional information and cattle family tree visualisations as part of the auction catalogues when buying livestock. Accurate and relevant information communicated in a format that is appealing for customers is the base for effective communication and the base for developing loyal relationships. Stud auctioneers should embrace this new Mobile app to enhance their relationships with farmers and in doing so build competitive advantage for their businesses.

The findings in this paper showed that farmers prefer an animal family tree with different pictures that show the animal on sale. The catalogue presently used (Figure 2) only provides one picture of the animal and no family tree of the animal for sale. The contribution of this study bridges a gap in literature as no study has been done before to elicit cattle family tree requirements from farmers. The findings can assist farmers and auctioneers to produce animal family trees that farmers can use to assist in their purchasing decisions. The implementation of the cattle trading DSS in Figure 3, will require data from several sources, including data from farmers. The data can be incorporated into auction catalogues to help farmers make their buying decisions This will be up-to-date digital information (IaaS) to farmers (Calitz et al., 2022).

The limitations of the study are that only 20 farmer participated in the study after 3 calls for participation. The findings however have shown the preferred animal family tree visualisation diagram preferred by farmers and the associated animal data requirements. Present research focuses on the implementation evaluation of an animal family tree visualisation mobile application. Future research will focus on implementing and evaluating the data centric framework for animal trading decision support (Figure 2).

Finally, there have been many technological advancements in artificial intelligence, machine learning, data analytics and IaaS in the past decade and farmers are now provided with additional data and information from various sources. Farmers are urged to make use of these technologies to aid with improving farming practices and record keeping of their animals.

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Information Systems Project Managers' Perspectives on Critical Success Factors: Do We Practice What We Preach?

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Keywords

Information systems project management; Critical success factors; Importance and Implementation

Abstract

Organisations undertake projects of various types and descriptions to fulfil a need experienced by a stakeholder. Projects generally fail and the same is true for most information systems projects. These projects deliver physical infrastructure deliverables and can also provide software or business process-based products. To increase the probability success, specific and applicable critical success factors ought to be implemented to a satisfactory extent. The purpose of this quantitative study is to determine if traditional project success factors apply to information systems projects, how important are these critical success factors perceived to be among information systems project managers and to what extent these are implemented. It is found that traditional project critical success factors do apply to information systems projects and they are all considered to be important by information systems project practitioners. It is also found that these factors are extensively implemented on average but that curious relationships exist between how important a factor is perceived to be and to what extent it is implemented.

1. Introduction

Information systems (IS) permeate all modern organisations (Liu, Zhang, Keil & Chen, 2010). This is manifested either by the infrastructure of an organisation, its capabilities or the associated products or services offered by such an organisation (Gemünden, Lehner & Kock, 2018). Information system projects are very often the vehicle for providing these technology based capabilities products or services.

According to Standish Group (2015), the cancellation rates of information systems projects are unacceptably high at 31.1%. Even worse, 52.7% of projects would exceed their planned budgets by 189%. Success rates are even more dismal in that only 16.2% of projects would meet technical project success criteria of being on time and in budget. For large organisations, the situation is even bleaker in that only 9% of these projects can be deemed a success. In these projects that were deemed successful, the scope or essence of the product developed by the product differs markedly from the initial specification in many cases. Overall, the success rates of IS projects are at that 29%, about 19% are failures and 52% of projects are considered challenged. With the introduction of customer satisfaction as an additional metric, the rate of project success has been increased to 31% overall (Johnson, 2020). Challenged projects as an outcome where the end result is accepted even though it does not meet technical project success requirements such as time, cost or scope and the project requirements may have been amended by agreement to close off a problematic project.

According to Marnewick and Labuschagne (2009), challenged projects occur due to factors such as the communication between teams and customers, user involvement, executive support and clarity of requirement definition is not adequately addressed or managed during the project. The CHAOS report's definition of failed projects in IS projects characteristically comprise projects that have a very poor product, or those that have not been completed or those that have been cancelled (Standish

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Group Chaos Report, 2015). Boehm (2000) adds to the debate stating that not all cancelled projects can be considered a failure as there may be very good reasons for abandoning a project. These may be related to changing needs and priorities or the organisation or traumatic market events that either prevent the project from continuing or make the proposed end result unnecessary.

Most organisations experience failed or challenged IS projects at some point. In order to reduce the risk of project failure, identifying and implementing critical success factors (CSFs) is of paramount importance. This research sought to explore the perspectives that project managers have on the accepted success factors in the implementation of IS projects in South African financial institutions. The focus of the data is on the financial services institutions. The rate at which IS projects are failing represents billions of rands in wasteful expenditure and threatens to undermine any remaining credibility the business world may have in the discipline of project management.

2. Problem Investigated

The South African financial services industry provides services in commercial and merchant banking, lending, insurance and investment (Brand South Africa, 2017). The industry is regulated by various regulators, the most influential being the Prudential Authority (South African Reserve Bank, the Financial Sector Conduct Authority (FSCA) and the National Credit Regulator. This sector has consistently added around 600 billion ZAR to South Africa's GDP although that figure has scarcely grown since 2014 (Statista, 2020). Given the weight of the external stakeholders and the expectations of shareholders, organisations in this sector can ill afford unsuccessful projects. Indeed, shareholders would expect any temporary initiative like projects to contribute and grow the organisation and sector at large.

The introduction painted the bleak picture facing organisations attempting IS projects. The approach is to explore the accepted project CSFs to explore the perspectives held by project managers in attempting these projects in financial institutions. Much research has been done on the reasons for project failure, yet projects continue to fail at an alarming rate (Erasmus & Marnewick, 2021; Marnewick, Erasmus & Joseph, 2016). This paper explores the theory regarding IS project CSFs and investigates the perspectives held by IS project managers compared to the level of implementation in the sample's environment.

According to Chmielarz (2015), IS and information technology (IT) have advanced and proliferated at a great speed in all industries during the past decade. A need for IS and IT conversant project management practices and practitioners have arisen. As a result, project managers and processes must be adaptable to be able to manage with future developments. Unfortunately, the troubled state that project management as a discipline finds itself in serves as a barrier to being adaptable to future conditions. It becomes important to determine what the real project success factors are in the IS environment and conversely to determine if they are implemented adequately (Arora, Haleem & Kumar, 2022).

Seminal research by Bannerman (2008), contributed immensely to how projects can be successful on various levels depending on prevailing CSFs adopted by an organisation or even an individual project. It is important for organisations to focus on CSFs they believe would contribute to greater projects success as well implementing it. The extent of implementation should ideally match with the perceived level of importance of these CSFs. It is this observation that prompted the investigation to determine how important accepted CSFs from literature are perceived and to what extent they are being implemented.

3. Research Questions

To address the identified problem, the following main research question is posited:

- What are the perspectives of project managers on critical success factors that contribute to the successful implementation of information and communication technology projects in South African financial institutions?

To be able to answer this main research question, the following sub research questions should be answered:

- What are the CSFs for IS projects?
- How important do IS project managers in the financial services industry consider these CSFs in their environment?
- To what extent are these identified CSFs implemented in the financial services industry?

The purpose overall would be to determine what CSFs are considered and how does this perception compare to how it is implemented. In effect, it is to determine if project managers practise what they preach.

4. Literature Review

This section provides context to the terms “projects” and identifies aspects unique or of more importance to IS projects. This is followed by summaries of the CSFs identified through literature.

4.1. Projects defined

Traditional IT projects (also called the predictive approach) are defined by the following characteristics (Schwalbe, 2015):

- A temporary endeavour with a start and end date;
- To perform a set of activities;
- In iterative steps;
- Are subject to constraints; and.
- To produce a deliverable that fulfils a need.

This implies that a project cannot be an ongoing operational matter and must be closed off at some point regardless of whether the outcome fulfils the need or not. The fact that a temporary endeavour is undertaken to fulfil a need is a defining characteristic of a project, even if it is cancelled and does not ultimately fulfil the stated need. The project requires a plan that defines the set of activities and the order in which they should be completed while considering the various constraints imposed on the project.

These constraints include:

- the allocated budget;
- allocated timeframe;
- scope to be achieved;
- identified and unidentified risks; and.
- required quality to be achieved.

A plan is developed for each constraint and combined into a master project plan. Depending on the project methodology utilised and the type of project attempted, various processes and documentation may be needed to be completed to develop a coherent project plan. As the focus is on IS projects, the next section discusses this in more detail.

4.1.1. Characteristics of Information System Projects

Al-Ghamdi and Saleem (2018) argue that IS and IT are so ubiquitous in the organisation and form the backbone of any modern enterprise. IT itself as a term has been used prominently to refer to the hardware and software resources (Salim, Saleem, Fayoumi, Al-Ghamdi & Ullah, 2013), infrastructure, cloud computing, information management tools (Maresova & Klimova, 2015) and various types of information systems (Ullah, Al-Mudimigh, Al-Ghamdi & Saleem, 2013). For the purposes of this paper, IS projects is the term that will be used to refer to any of these projects as it encompasses the physical technology, software, data and communications network aspects of these projects.

Dekkers and Forselius (2007) argue that IS projects typically involve the delivery of digital systems, but it is important to note that not all IS projects involve physical hardware elements such as infrastructure projects. There may also be projects that are purely focused on business processes but

whatever the case, the aim is to enhance infrastructure and business processes (Al-Ghamdi & Saleem, 2018). This may also include software development projects.

Seng (2010) argues that IS projects are different from projects conducted in other environments in that IS projects present different kinds of challenges to project managers. Hairul Nizam Md Nasir and Sahibuddin (2015) suggested that the success factors of the project were not applicable to all projects and it is conceivable that traditional CSFs do not necessarily apply to IS projects. , Fenech and Raffaele (2013) argue that due to the highly dynamic technical environment, significantly magnified and varied risks non-IS projects are presented. Literature seems to suggest that IS projects often prioritised committed user involvement, effective risk management and the use of formalised project management methodology (Morrison, 2011). This is to the detriment of human resource management practices that are required to manage the aforementioned as they are somewhat neglected. .

The two main approaches for IS software development projects are the waterfall and agile (Säisä, Tiura & Roslöf, 2018). Agile software development has been seen as more appropriate for continuous development of software, thereby circumventing the “defined end” characteristics of projects. This has raised a debate as to whether or not software that is developed through agile methodologies are in fact projects in the proper sense. Nevertheless it is generally recognised that the endeavour is still temporary enough and conforms to most other characteristics of projects that they be included in this discussion. It must be noted that although attempts have been made to apply this approach to infrastructure projects or projects outside of IS and IT, the efficacy of adopting this approach does not seem promising or at least hotly debated (Fotiadis, 2021).

According to Ghani and Bello (2015), agile is a systematic and iterative approach to software production that was successful in producing high-quality applications and also in fulfilling customer expectations. Laanti, Similä and Abrahamsson (2013) add that the main objective of agile project management approaches is to minimise rework by reducing errors and prioritising the development of the minimum viable product. This is achieved by setting periods of review close to one another to make smaller course corrections than could be possible in longer term reviews (Fustik, 2017). This has the effect of reducing risk and rework for major deliverables as this was attended to in the far smaller work packages.

The waterfall method relies on high quality pre-planning as well as thorough arrangement of all plans far ahead of time to facilitate easier execution of the project (Mejtoft & Vesterberg, 2017). It is an iterative approach in essence. Agile approaches evolved from informal approaches to formal, documented methodologies and proved to increase success rates for software development projects (Kaczorowska, Motyka & Słonec, 2016, Fustik, 2017).

The next section focuses on the identified project CSF and summarises them for reference in the analysis discussion.

4.2 Project critical success factors

As defined previously, a project CSF is implemented to increase the chances of a positive project outcome. Over the years, various project CSF's have been developed and proposed for the benefit of project practitioners. Not all CSFs may apply in all environments or all projects The most often suggested have been synthesised in the table below as drawn from literature:

Table 1: The most common traditional project success factors listed

Traditional critical success factors	Summary	Sources
Top management commitment and support	Ensures top level visibility of the project and assures prioritised resource allocation.	Santos, Barriga, Jugend & Cauchick-Miguel (2019) Lavagnon (2008) Ekrot, Rank, Kock & Gemünden, (2018)
User involvement	Participation of intended user groups provides increases probability of the project delivering greater customer satisfaction and success.	Fayaz, Kamal, ul-Amin & Khan (2017) Esteves et al. (2017) Bano and Zowghi (2013)
Stakeholder buy-in	Committed stakeholders ensures continued involvement and greater motivation to guide the project to success.	Mose, Njihia & Magutu (2013) Ola-awo, Alayande and Olarewaju (2021) Dwivedi & Dwivedi (2021)
Customer satisfaction	Perception of the project outcome by the group that commissioned the project that may be independent of traditional project success criteria of schedule and budget.	Rashvand & Majid (2014) Williams, Ashill, Naumann and Jackson (2015) Putra, Subiyakto, Ahlan and Kartiwi (2016)
Solid budget and project plan	Thoroughly planned budgets and schedules provide guidance to project team members as to how to operate within these constraints.	Imtiaz, et al. (2013) Fayaz et al. (2017) De Bakker, Boonstra and Wortmann (2010) Standish Group (2015)
Effective communication	Allowing all stakeholders to be appropriately informed of the established plans, constraints, progress and changes increases the probability of project success.	Gheni, Jusoh, Jabar & Ali (2017) (Santos et al. (2019)Karl & Kralova (2016)
Clearly defined project objectives and goals	A clear vision for a project, clearly and simply stated, assists in guiding behaviour to achieve a desired outcome.	Fortune and White (2006) McLeod & MacDonell (2011) Dan (2010)
Clearly defined project scope	The key deliverables and features of a deliverable must be clearly stated to ensure the customer as well as the project adheres to deliver on what has bene agreed.	Mirza, Pourzolfaghar & Shahnazari (2013) Nasir & Sahibuddin (2013) Catania et al. (2014)
Competent project manager	An experienced project manager, that exhibits key competencies in the context of the expert skills required of the industry or type of project, increases the probability of a positive project outcome.	Montequin, Cousillas, Alvarez & Villanueva (2016) Blaskovics (2016) Alqashami and Mohammad (2015)
Commitment of project manager	Leadership concerns revolving around motivation, commitment, inter-personal relationship and productivity has a significant impact on the performance of projects.	Montequin et al. (2016) Kerzner (2017) De Araujo, Pedron & Quevedo (2018)
User training	For a project to be completed it must be transitioned into the operational space where user must be trained to use the new deliverable if the expected benefits are to be accrued.	Denic, Vujovic, Stevanovic & Spasic (2016) Lin, Chiu & Liu (2019) Dandage, Mantha, Rane and Bhoola (2018)

This very brief summary represents a great body of literature when trying to determine what CSFs are applicable in this context. Of the vary many CSFs that have been identified, the above features prominently in prior research.

5. Research Methodology

This study followed a positivist approach that culminated in deductive conclusions derived from a questionnaire posed electronically to suitable candidates in the population. A summary of the research design is contained in Figure 1:

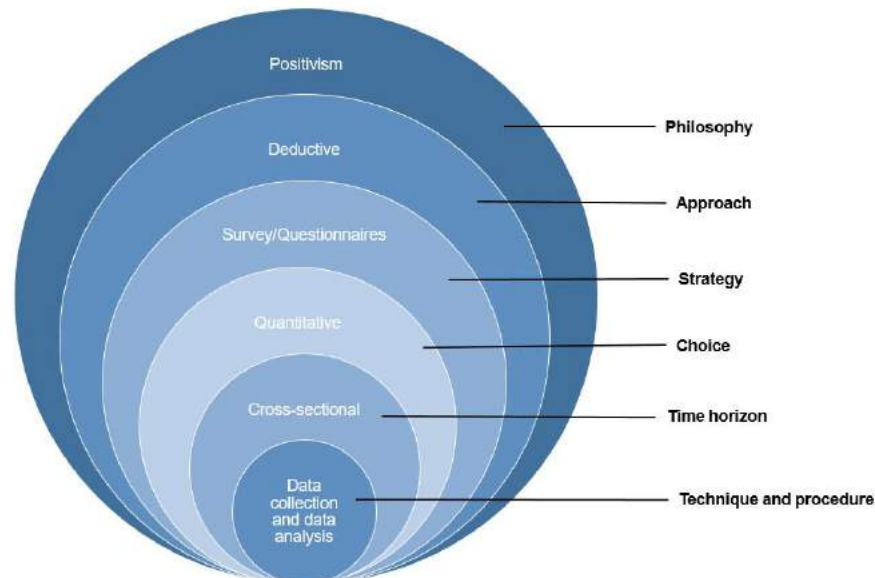


Figure 1: Summary of research method approach (Adapted from Saunders et al., 2012)

The questionnaire is divided in three sections. The first being demographic information to be gathered. Thereafter the respondents were required to reflect on the 11 CSFs in two ways. Firstly, they were requested to raise their opinion on how important they perceived the CSF to be in their environment by way of a 5-point Likert scale. Then they were required to indicate to what extent these CSFs were implemented in their environment on a similar 5-point Likert scale. The cross-sectional data was quantitatively analysed.

The population is identified as project managers in the financial services industry who have had any experience in managing IS projects in that environment. The questionnaire was distributed among potential respondents on a convenience sampling strategy basis as the actual number of project managers who work with IS projects in financial services sector is inscrutable.

A non-random convenience sample was utilised with potential respondents identified through LinkedIn. Due to the data being collected in the time of the pandemic, electronic means were used exclusively through Google Forms. As such, the response rate was quite low. However, due to the nature of an exploratory study, the 33 responses received from several financial institutions at a response rate of 22%.

6. Results and Findings

This section details the pertinent sections of the questionnaire responses. Reliability and validity figures will be followed by some demographic results and then the 11 CSF pairs' results is presented.

6.1 Internal consistency of the research instrument

The main body of the questionnaire consisted of 11 pairs of statements yielding 22 variables. The first section requested reflection on the perceived importance of the presented CSFs and then the extent of implementation of these CSF's. The research instrument was tested for internal consistency by way of a Cronbach's alpha coefficient. The research instrument yielded a score of .93 for 22 variables indicating that there is more than adequate internal consistency (Hair, 2011).

6.2 Project Manager experience and past success

The respondents were requested to indicate their years of experience as well as how often they were successful. Figure 2 indicates the results:

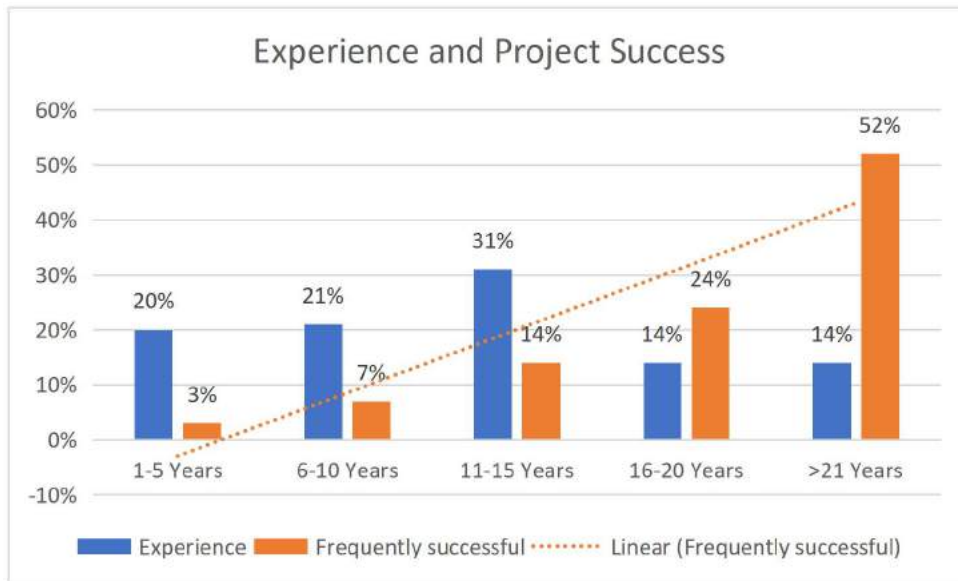


Figure 2: Project Manager experience and success

Most respondents had between 1 and 15 years of experience with 72% of respondents indicating such. The project managers with the most experience was in the minority with 14% in each of 16-20 and >21 years categories. The respondents also indicated how often they delivered successful projects. The trendline clearly indicates that the more experience a project manager has, the more often appear to deliver projects successfully. The most experienced project managers indicated they were most frequently successful while the least experienced project managers indicated the converse. Already there is intimation of the role project manager competence and experience plays in project success.

6.3 Global averages

When viewing the data from the two latter parts of the questionnaire dealing with the identified CSFs, the overall picture is gratifying to see in Table 2:

Table 2: Overall global means of importance and extent of implementation of success factors in ICT projects

	Global mean of success factors importance	Global mean of extent implemented of success factors
Number of variables	11	11
Mean	4.65	4.69

The average values for all are reported to be on the upper end of the 5-point Likert scale. The CSFs are generally considered highly important and almost fully implemented. The averages are also very close to one another. However, this does not mean no variances exist.

6.4 Results, variances, and correlations

Figure 3 indicates the results for how important each CSF is perceived by the respondents:

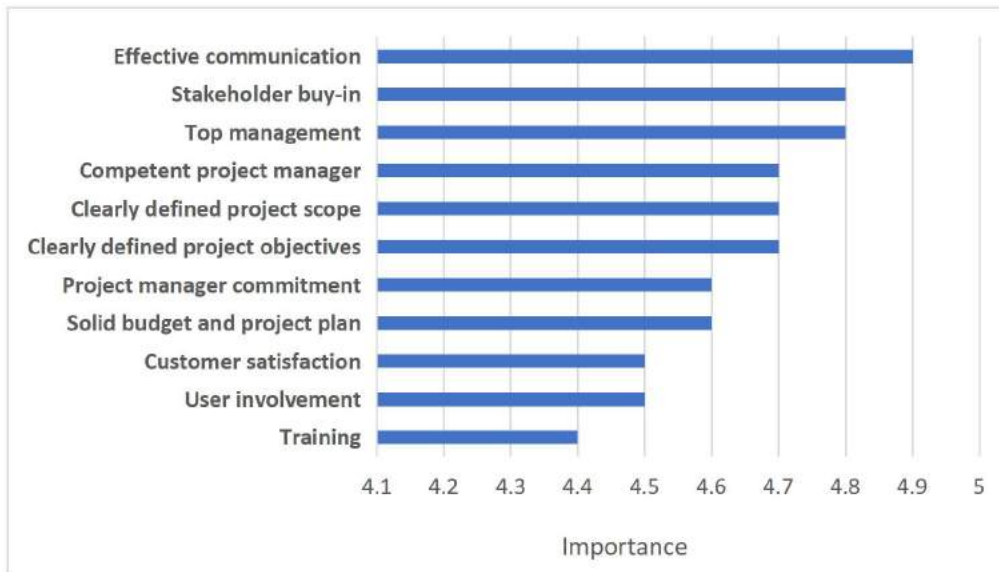


Figure 3: The importance variable averages

The respondents perceive Effective Communication, Stakeholder Buy-In and Top Management Support as the most important CSFs. This supports literature in that these are prominently mentioned as very important for the successful delivery of projects (Mose, Njihia & Magutu, 2013, Gheni, Jusoh, Jabar & Ali, 2017; Santos, Barriga, Jugend & Cauchick-Miguel, 2019). These are also considered for IS projects. The CSFs with the lowest perceived importance are Customer Satisfaction, User Involvement and Training. This is somewhat surprising that Customer Satisfaction rates lower than most other CSFs as these projects are initiated due to a need a customer experiences. While this is still ranked as a very important, it is not as big a priority as other CSFs. Training is the only CSF that is not ranked as Very Important but instead as Important.

Figure 4 indicates to what extent these CSFs are implemented in the respondents' environments:



Figure 4: Extent implemented variable averages

The topmost implemented CSF's closely match those being perceived as important. Effective Communication, Stakeholder Buy-In and Top Management Support are Almost Fully Implemented. The least implemented CSFs are all still highly implemented; however, Training as a CSF being

considered the least important is Almost Fully Implemented as well. User Involvement is the least implemented CSF in this sample.

The differences between how CSFs are perceived as important and to what extent they've been implemented are demonstrated in Figure 5:

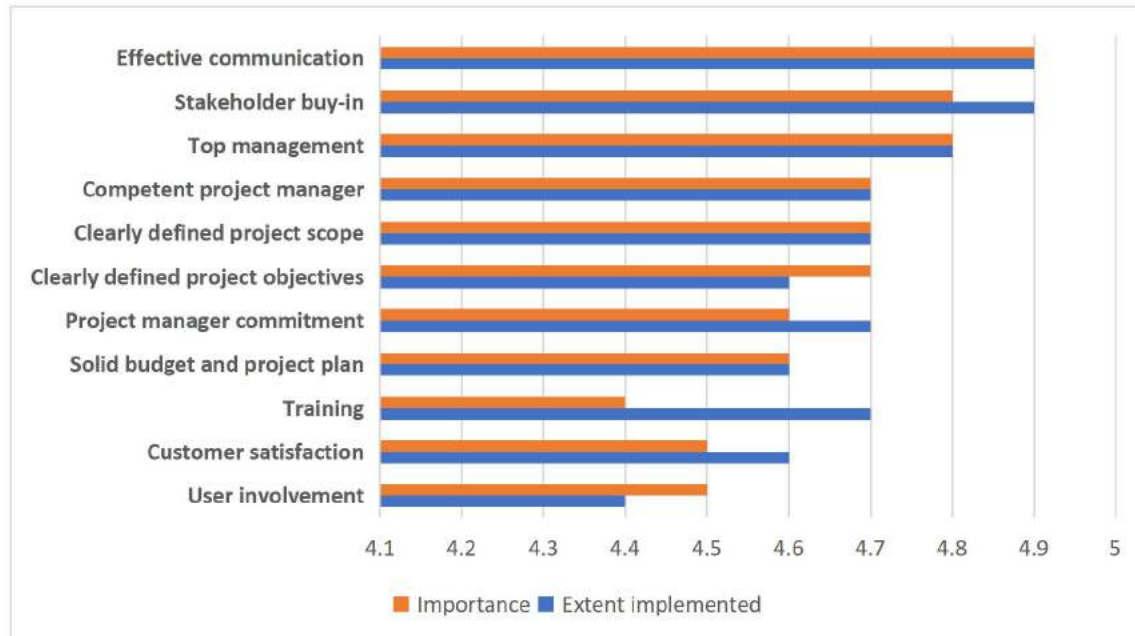


Figure 5: Comparison of importance and the extent implemented variables

There is some alignment with the perceived importance of a CSF and the extent to which it has been implemented. The CSFs that are implemented on the same level as what they are perceived, on average, are Effective Communication, Top Management Support, Competent Project Manager, Clearly Defined Project Scope and Solid Budget and Project plan.

CSFs that are implemented to a lesser extent that they are perceived important are Clearly Defined Project Objectives and User involvement. These two CSFs can be classed as CSFs that require more attention to be implemented as project practitioners perceive these to be important and of some value. Clearly Defined Project Objectives provide direction on which all project plans and documentation is based. More User Involvement provides greater clarity on the features of the IS project deliverables who will eventually be required to use it.

CSF's that have been implemented to a greater extent that what is perceived important can be seen as being over implemented. These CSFs are Stakeholder Buy-In, Project Manager Commitment, Training and Customer Satisfaction. It could conceivably be argued that there is an overinvestment on the part of organisations to implement these CSFs. Conversely it could be said that practitioners do not value these CSFs enough and the investment might be appropriate. Further investigation is required to determine which statement is more accurate.

While there appears to be alignment between the extent implemented and the perceived importance of CSFs, these results must be interpreted with caution. Table 3 indicates the relationship between each CSF pair:

Table 3: Correlation coefficient of the importance and extent of implementation of success factors in ICT projects

Importance and extent implemented	Correlation coefficient	Strength of the relationship
Effective communication	-0,07	No relationship
Project manager commitment	0,35	Weak
User involvement	0,43	Moderate
Stakeholder buy-in	0,64	Strong
Top management	0,65	Strong
User training	0,76	Strong
Clearly defined project scope	0,80	Very strong
Clearly defined project objectives	0,82	Very strong
Competent project manager	0,85	Very strong
Solid budget and project plan	0,89	Very strong
Customer satisfaction	0,91	Very strong

Source: Own compilation

Although all the CSFs were considered at least Important and Adequately implemented, there are variances between how the respondents' perceptions and how they answered the questionnaires. The above Pearson Correlation Coefficients (PCC's) indicates relationships among CSF pairs when considering their perceived importance and extent of implementation. These relationships do not indicate a causal relationship however one can logically assume that if a CSF is considered important, it should be implemented to the same extent. For most CSFs, one can predict a similar level of implementation as its perceived level of importance. This is true especially for (i) Clearly Defined Project Scope, (ii) Clearly Defined Project Objectives, (iii), Competent Project Manager, (iv) Solid Budget and Project Plan, and (v) Customer Satisfaction.

What is interesting is the weak and no relationship for Project Manager Commitment and Effective Communication. Firstly, regard Project Manager Commitment which scored in the middle of the pack for both perceived importance and slightly higher for extent implemented. It means that there is little expectation to see that the extent to which this CSF is regarded would be implemented to the same level. Rather it would appear where the same level of importance and implementation is observed, it is mostly by chance.

Secondly, this is true for the CSF that is most important and most extensively implemented, Effective Communication. For this CSF, the average level of perceived importance is the same as the extent of implementation. While on average, these seem to align, the respondents' submission varied greatly internally. This means that many respondents did not see this CSF to be implemented to same extent that it was perceived to be important. Therefore, there is no reason to assume that this CSF would be implemented to the same extent as it is perceived important.

The causal relationship needs to be explored further to determine if there are other variables at play. Especially if one considers that some CSFs are implemented to a greater extent than they are seen to be important. It is therefore premature to state that the perceived level of importance of a CSF determines the extent of implementation thereof.

7. Recommendations and Managerial Implications

From the respondent's submissions, it is clear that they perceive CSFs as part of their project delivery method while their organisations support them in implementing these CSFs. What is generally not clear is how these approaches differ. On average the CSFs are consider Important to Very Important. On average, the CSFs are either Adequately Implemented or Fully Implemented. However, there are some misalignments on a small scale while some CSFs are not internally coherent in how they are implemented relative to their perceived importance.

Firstly, it is recommended that organisations, through the leaders and staff responsible for project delivery, adopt a formal methodology and framework containing the CSFs important for their organisation, the financial services industry, and types of projects they attempt. In adhering to such a framework, it is believed to reduce the risk of project failure or non-delivery. It is however important for organisations to realise that their particular set of success criteria or CSFs may differ upon their context. The participants in this study have clear opinions of what practices they believe to be important in their respective organisations and for the industry. Matos, Romão, Sarmiento, and Abaladas (2019) agree that the selection of appropriate CSFs will impact project outcome as it relates to the context of the commercial activity.

Secondly, the importance and prominence of Effective Communication cannot be overstated. The respondents perceived this to be one of the most important CSFs while it was also seen that the organisation outside of the project discipline, implements this CSF to greater extent than its perceived importance. Project managers should encourage communication among project team members for better project outcomes. It is critical that communication does not break down during the various project phases, especially if the project involves different business units and other stakeholders in the financial industry. With the development of new technology in virtual communications, project managers can benefit from greater effectiveness in communication in a world where project effort is distributed in remote working (Abbas, Choi, Seo, Cha, & Li, 2019)

Thirdly, Stakeholder Buy-In is also a critical success factor, since the project manager should first identify essential stakeholders for the project and guarantee their buy-in before the project is started. Because stakeholders contribute resources and support for the project, it is critical that project managers build productive relationships with them and guarantee that a communication strategy exists for regular contact with stakeholders. This may include external regulatory bodies such as the Financial Sector Conduct Authority (FSCA), the Credit Regulator and the Prudential Authority (South African Reserve Bank) where applicable. Project practitioners should seek to increase the legitimacy of stakeholders to increase their commitment and buyin (Allen & Cain, 2022). This achieved by involving stakeholders and removing barriers that could prevent their participation in a community of practice such as these information systems projects.

Additionally, Top Management Support is a critical success element in IS projects, as support from top management provides vital confidence to project managers. Therefore, organisations should recognise the significance of project leadership in project success. Project manager abilities are just as critical for project success and the research findings indicate that they do indeed contribute to the success of ICT projects. To contribute positively to an organisation in the financial services sector, project managers should invest in their project competencies. If the project manager is found wanting, it will have a negative influence on the project, since project team members frequently look up to project managers for clarification on project duties. This CSF has a profound impact in different types of IT projects, be they iterative or predictive where this had an ancillary effect on team motivation (Tsoy & Staples, 2021; Zaleski & Michalski, 2021). It would seem that executive support provides additional legitimacy to project leadership and team motivation where it is present as a CSF.

The commitment of the project manager guarantees that the project does not lose momentum. Committed project team members frequently identify effective solutions to iron out issues throughout project development and assist in achieving the desired goals. It is critical that a project manager be committed to completing the project successfully. In the case of committed project manager, the application of their emotional intelligence capabilities are more apparent (Zhu, Wang, Wang, & Yu, 2021). Organisations therefore need to ensure that project managers are effectively motivated to take ownership of the project results. This should however happen in way that positive reinforcement can be applied so as not to destroy team motivation.

In order to design an acceptable project scope, project managers must first grasp exactly what is required to meet the project objectives. Although project scope is frequently changed as the project progresses, it is critical that project managers are familiar with the project scope from the start so that

modifications may be made more easily as the project progresses. To help create a clear project scope, project managers should ensure project deliverables are defined, quantifiable and attainable. In doing so, controlling the scope is essential to eliminate the associated problems of scope creep (Jan, Abbas, & Ahmad, 2022).

To begin with, IS projects require financial support. The project budget is dependent on the organisation's top executive for financial backing. In principle, no project will take off without a budget because project managers should guarantee that appropriate finance is available for the ICT projects. The adoption of beyond budgeting principles may even increase the probability of attaining the benefits envisaged by business case in that an adaptable approach be used (Marnewick & Marnewick, 2022).

Project planning is essential for project success, for without a plan, it is impossible to set objectives and goals. It is critical in leading stakeholders, sponsors and team members through project phases and assisting the project managers in completing the projects successfully. Handel (2022) supports this point by adding that all documented arrangements must be available to ensure effective communication and to provide a basis for stakeholder buy-in.

Any organisation attempting a project should ensure that the crucial success factors identified by the research as the most necessary for effective implementation are examined by all stakeholders in the project at the outset, and that they understand the importance and advantages thereof. User involvement, user training and customer satisfaction are the least essential success factors with low average values, indicating the need for more study on these factors. The researcher recommends that the project manager maintain contact with the customer which will provide value to future studies. Even though IS projects continue to be challenged, practitioners should continuously recognise the significance of essential success factors.

Effective Communication is the CSFs with the greatest level of implementation while being perceived as one of the most important CSFs. It is however the CSF that exhibits no relationship between its level of implementation and perceived importance. It is recommended that this be more fully investigated as to its contribution in the context of IS project management.

8. Conclusion

In conclusion, the research project set out to determine what CSFs of traditional projects apply to IS projects, how important they are perceived and to what extent these are implemented. The results provide insight into the external influences on IS projects and that traditional knowledge and wisdom regarding projects in general apply to IS projects.

The financial services sector is very technology driven (Alt, Beck, & Smits, 2018). The core business of organisations participating in the financial services industry is expanding to include more complex IT and information systems capabilities. In order to achieve this, temporary initiatives in the form of projects must be undertaken. To increase the probability of success, CSFs should be found that apply to the context of specific projects in the financial services.

Future research may examine delving deeper into critical success factors for which project managers, stakeholders, senior management, and organisations as a whole assessed the importance and, more importantly, the degree to which they had been applied. The research study had already established the most important success factors from the perspective of project managers, namely top management commitment and support, continuous user involvement, stakeholder buy-in, customer satisfaction, a well-planned budget and project plan, effective communication, user training, project objectives that are clearly stated, a project scope that is well defined, project manager competence and project manager commitment. A predictive model could be designed and tested to determine to what extent each CSF contributes to ultimate project success. This can be tested to deploy a predictive success tool in industry.

Extensive study in both quantitative and qualitative methods is necessary to present varied perspectives from project professionals. The research would be required to obtain project managers' opinions from various institutions and industries in order to contribute to the critical success factors that influence project implementation.

A clear limitation of this exploratory study is the low number of respondents. The researchers desire to replicate this study with greater numbers and in more industries to determine additional CSFs that are applicable to IS projects and to pursue the future research paths.

This exploratory quantitative study expands the current body of knowledge on project success factors while confirming literature. Additional avenues for research are also illuminated. In this case, it does indeed seem that project practitioner practice what they preach. The question then remains, why do projects still fail if we do the right things right? Perhaps the answer lies in the fact that CSFs are not the be all and end all for IS projects and further innovation and research is required to increase project success rates.

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Successful Emerging Farmers In The Agricultural Sector In The North West Province

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Keywords

Emerging farmer; business failure; entrepreneurs; agriculture.

Abstract

The South Africa agricultural sector is important for various reasons including contributing to food security and job creator for low skilled labourers. Despite the government prioritising transformation in the agricultural sector since 1994 and investing billions of rands in the development of emerging farmers, this initiative has been failing. There are various reasons why emerging farmers fail and this includes lack of extension services by government, farming skills, access to markets, access to finance as well as drought and crime. The South African Department of Agriculture have in the past allocated substantial financial resources to assist emerging farmers through the Comprehensive Agricultural Support Programme (CASP). CASP was launched in 2004 to provide capital and support to emerging farmers. However, the return on investment has been very low for the CASP funds spent within the North West province and did not contribute to the success of the emerging farmers. To determine the main causes of these failures, quantitative data was gathered from 202 emerging farmers on the problems they faced and qualitative data were gathered from four external role players within an agricultural sector. The quantitative data revealed that most emerging farmers blamed the department of not assisting in extension services. Other factors mentioned include lack of finance, markets and skills. The qualitative data revealed that there is a comparison between all parties interviewed. They all agree that the failure of emerging farmers is because of 1. Misappropriation of CASP funds 2. CASP programme in its existing form is ineffective 3. Selection of the beneficiaries to this programme is key meaning poor selection of the recipients 4. Inadequate government or department knowledge.

1. Introduction

Productive farmers create employment for unskilled workers, helps with poverty alleviation, economic growth, and food security. For the South African government emerging farmers are of particular importance but despite the attention and funding most emerging farmers are still failing. The aim of this study is to identify the key external factors that contribute to the failure of emerging farmers in the North West province, South Africa.

The South African land reform program has been in place for almost three decades. From 1994 until 2008, the government-initiated land reform programme transferred four million hectares to historically disadvantaged South Africans. However, factors including inadequate planning, general lack of capital and skills shortages amongst the emerging entrepreneurs have resulted in land reform projects having limited impact and most emerging farmers failing (Lahiff, 2008; Bates, 2004). Despite these failures it remained an integral part of the ruling party's policies. The African National Congress

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(ANC) election manifesto of 2009 (ANC, 2009) declared that rural development, food security and land reform were priority areas and that:

The ANC government will intensify the land reform programme to ensure that more land is in the hands of rural poor and will provide them with technical skills and financial resources to productively use the land to create sustainable livelihoods and decent work in rural areas, expand the agrarian reform programme, which will focus on the systematic promotion of agricultural cooperatives throughout the value chain, including agro-processing in the agricultural areas. Government will develop support measures to ensure more access to markets and finance by small farmers, including fencing and irrigation systems. Linked to the land reform programme will be an expanded agrarian reform programme. This programme will focus on the systematic promotion of agricultural co-operatives throughout the production cycle. There will also be active promotion of agro-processing in the agricultural sector. Government will develop support measures to ensure more access to markets and finance to small farmers (ANC, 2009).

National Treasury (2019) spent billions of Rands towards this goal and in 2018 alone spent R176m on farming support in the North West Province, compared to the total budget of R1 750m for the South Africa government. This was done through the Department of Rural, Agriculture, Environmental and Development (READ) introducing the Comprehensive Agricultural Support Programme (CASP) in 2004 to assist emerging farmers in the North West province (Hall & Aliber, 2010). The aim of the CASP fund is to provide capital and post-settlement support to the emerging farmers to enable them to become successful small, medium, and micro entrepreneurs (SMMEs) within the agricultural sector. Emerging farmers are defined as previously disadvantaged beneficiaries of the land reform programme who want to become successful entrepreneurs in the agriculture sector with the aim of becoming commercial farmers (Ducastel & Anseeuw, 2017). The Directorate Entrepreneurial Development (DED), a parastatal to READ, was established to provide capital and post-settlement support. Thus, emerging farmers do benefit from government financial assistance to start and run agricultural production, which should contribute to their success if the grants are handled effectively (Francis, 2019). However, at the end of the first financial year 31 March 2009, after the first year of administrating the CASP funds, 91 percent of the agricultural projects (emerging farmers) financed by these development grants failed (DED, 2009). In 2010, the then minister of rural development and land reform Gugile Nkwinti stated that 5.9 million hectares of farming land was unproductive and 90% of the farming projects were not functional (Pretorius, 2019). During this year the DED did receive a qualification in audit opinion as well as National Department of Agriculture due to non-performance (high failure rate within the development of emerging farmers)

A decade later this has not improved and by 2021 emerging black South African farmers produced less than 10% of the country's total agricultural output according to Sihlobo and Kirsten (2021). The reasons for this include:

- A lack of direction from government
- Poor adoption of the latest technology
- Fractious nature of organised agriculture
- Sub-optimal collaboration between government and the private sector
- Inefficiency in extension from provincial department of agriculture.

There was no change to the audit opinions and remain a qualification to the National Department of Agriculture as well as Provincial department of Agriculture.

1.1. Problem Statement

The problem is that the initiatives of growing SMMEs in the emerging farming communities of the North West province are failing, despite much money spent. At the end of the financial year 2008/2009, the first year this programme was lodged in the North West province, READ made use of

the North West Directorate Entrepreneurial Development (DED), a parastatal to the READ, as a vehicle to fulfil the function of providing capital and post-settlement support. The annual report of DED (2009:66) states (the first year CASP was operating) that the success rate on the creation of successful entrepreneurs was extremely poor during the 2008/2009 financial year, as 91 percent of the agricultural projects (emerging farmers) financed by these development grants were not viable and failed. Out of the R68m spent for the 2008/2009 year, R62m was declared fruitless and wasteful expenditure in the annual report for the financial year 2008/2009 presented in the financial statements of DED. After the financial year 2008/2009, this function was taken over by READ. However, this did not result in a positive change in the development of successful farmers. During the 2016/2017 financial year, R157m of these CASP funds was declared irregular expenditure and R14m was declared fruitless and wasteful expenditure. This is public money and reflects very negatively on government regarding how taxpayers' monies are spent. According to READ's annual report for the 2020/2021 fiscal year, the CASP program had a budgeted value of R141m, but only R43m was actually spent on it, an under expenditure 64% (READ, 2021). This means that there were no contributions made towards food security and the realisation of the government initiative.

During all these years the both the National Department of Agriculture and the Provincial Department of Agriculture received a qualification in audit opinion due to non-performance because of the high failure rate within the development of emerging farmers.

1.2. Methodology

This study is based on a pragmatic paradigm where a mixed method approach is being utilised to gain data.

Self-administered questionnaires (quantitative method) were used to gather data from the emerging farmers. The emerging farmers who participated in this study all received financial assistance from the CASP programme. A list of these emerging farmers (projects) was obtained from DED. All these emerging farmers were registered with the Provincial Treasury as beneficiaries to the CASP programme.

The second type of mixed method design used in this study was the explanatory design, where the quantitative data are collected first and depending on the results, qualitative data were gathered to explain the quantitative findings.

Semi-structured interviews (qualitative method) were held with four purposively selected individuals, one from the Department of Agriculture (being the Member of the Executive Council at the time), one from an agricultural corporation responsible for agricultural development and two black commercial farmers within the North West province.

Table 1: The research process model

Research philosophy	Research design	Research method	Target population	Sampling strategies
Pragmatism	Mixed method approach Explanatory design	Case study	1 st target group – 410 emerging farmers: quantitative method 2 nd target group – 4 selected individuals: qualitative method	1 st target group – purposive sampling technique 2 nd target group - 4 selected individuals: judgement sampling and critical case sampling

- **Sampling strategies**

A questionnaire was distributed to all 410 emerging farmers. This survey is “...the collection of a large quantity of evidence usually numeric, or evidence that will be converted to numbers, normally by means of a questionnaire” (Remenyi *et al.*, 2002:290). The total population sampling method was used for this target group. Total population sampling is a type of **purposive sampling technique** that involves examining the **entire population**. From the 410 questionnaires distributed only 202 was collected, a response rate of 49%. The target population comprised of emerging farmers in the North West province and who received CASP funds. The North West province is divided into four regions, namely Ngaka Modiri Molema District, Bojanala District, Dr Ruth Segomati Mompoti District and Dr Kenneth Kaunda District. Within READ, a regional manager is appointed for each of the four regions. Extension officers are also appointed for each of these four regions responsible for the managing and development of the emerging farmers. The extension officers know where each project or emerging farmer is situated in the North West province. The questionnaires were distributed to the emerging farmers with the help of these extension officers within READ.

Interviews were held with four representatives of the institutions earlier. Each interview was recorded and transcribed. The analysis of these data was done by an independent analyst using the instrument NVivo 12 Pro. The non-probability sampling method was employed to draw a sample from these institutions and the specific technique regarded as appropriate is purposive sampling. Judgement sampling was employed in this study by the researcher for selecting sample members to confirm to the criterion. Participants were chosen on an arbitrary basis because of their unique knowledge (critical case sampling).

1.3. Research objectives

The research primary objective of this study is to determine what are the factors contributing to the success rate among emerging farmers.

2. Literature Review

Anafo (2018) mentioned that emerging farmers are referred to as farmers entitled to government benefits through CASP and Land Redistribution for Agricultural Development (LRAD). Emerging farmers refer to as farmers that are dependent on semi-state and state organisations for financial support (Pilcher, 2017).

Farming is being considered as a source of revenue in both rural and urban areas until the rise of an increasing trend of the population worldwide that changed the farming perception into a business (Ducastel & Anseeuw, 2017). Hence, emerging farmers should possess entrepreneurial skills to carry

on farming as a business. Since all emerging farmers cannot have skills of entrepreneurship, the government and private organisations should assist emerging farmers to come up with feasible business plans and be guided on implementation and management of the farm plans to realise a profit. Due to population increase, there is an increase in demand for food from a large number of consumers. Emerging farmers are supported by government to promote agricultural production for supplying food and to be income generating. Marketing channels, food security, finances, and support (extension) services are the characteristics to be discussed.

The selling of fresh produce, either on small or large scale, shows the ability of market participants to enhance market accessibility that provides cash to the farmers after selling of agricultural products. However, there is a limitation to the access of the market for smallholding farmers or emerging farmers, which makes it difficult for-profit realisation in agriculture. Emerging farmers have less connection to formal markets, which leads to exploitation from the brokers of agricultural products resulting in low-profit margins. Tibesigwa & Visser (2016) mentioned that 88.3% of emerging farmers are self-selling. Sachs (2019) stated that sometimes government support smallholder farming with land and other agricultural inputs without clear marketing channels for their agricultural products. Farmers do individual marketing as a cheaper method of marketing their agricultural products (Senyolo et al., 2018). Francis (2019) commented that some emerging farmers producing surplus food languish in poverty due to poor access to a market that is profitable but sells as dictated by the buyer that led to losses.

People living in rural areas in every part of African countries not only in South Africa depend on agriculture as a source of food for their household.

Emerging farmers play a critical role in lowering the vulnerability of urban and rural food-insecurity household as a way to improve livelihoods, in addition to mitigating price inflation of food that is high. Engaging in farming in rural areas is also a way people can afford food. Buying from urban areas is very expensive. Thus, emerging farmers have and are being supported via protection of the domestic market and provision of support services, where possible, to increase food supply in rural areas. Food security according to Disable World (2019) is defined as the availability of food and one's access to it. Due to population increase, there is an increase in demand for food from a large number of consumers. Food security - it is very important to generate successful emerging farmers for food security for the future (Van Doorn et al., 2017).

It was difficult for the emerging farmers to obtain loans from any financial institution due to poor collateral agreements. The government decided to intervene to assist the emerging farmers with funds and established two funds wherefrom the emerging farmer was benefiting, namely CASP to provide capital and post-settlement support and Micro Agricultural Financial Institutions of South Africa (MAFISA) for assisting with loans to the emerging farmers at low interest rate. Financing is a critical aspect for emerging farmers to facilitate their agricultural productivity. This attracts the need for government to make an effort to improve the accessibility of credit as a way of improving agricultural productivity. In this regard the need financial institutions to provide credit to farmers, the South African government has established parastatal institutions mandated for channelling credit at affordable rates to promote agricultural development for example MAFISA funds (Alberts et al., 2019). Poor collateral requirements and long procedures for loan application deem financial to be inaccessible physically. Long application procedures of loans discourage loan application by emerging farmers due to delay and insecurity of loan due to poor collateral agreements. The development fund, CASP, was launched in 2004 also by government for disbursements to farming households. Hall and Aliber (2010) mentioned that the aim of this programme or fund is to be targeted previously disadvantaged group (emerging farmers).

The achievement of agricultural growth for emerging farmers can be successful through assessing extension services. Increase of agricultural growth is subject to support services. That are paramount to provide relevant services to farmers to adopt relevant methods of crop and livestock production. Hence for the growth of the smallholder agricultural sector, it is a requirement to offer comprehensive

support services (Soas.ac.uk, 2019). McAllister (2018) stated that approximately 50% of emerging farmers completely lack awareness of the support services and projects in South Africa. En.wikipedia.org, (2019) also stipulates that the following extension-related points are crucial namely, extension helps in adoptions of innovations, studying and solving the rural problems and crease farm yields and improve the standard of living of farmers. Extension services are classified into three types, namely technology transfer as the traditional model of the transfer of advice knowledge and information. The second type of extension service is advisory meaning the use by farmers of a cadre to experts as a source of advice in relation to the specific problem faced and the third type of extension service is facilitation, with the aim of this is to assist farmers to define their own problems and develop their own solutions (Ag4impact.org, 2019)

During the start of the agricultural revolution, only a limited number of farmers were undertaking agriculture as business, as opposed to subsistence farming that was aimed for household consumption. This is evident in 2016, where approximately 65 percent of adults were considered as poor workers and relied on agriculture as a source of livelihood worldwide (Ducastel & Anseeuw, 2017). Currently, there is increasing calls to do farming as agribusiness, to meet the increasing global demand of consumers. This is evident in that 10 percent of customers globally spend \$5 trillion on agricultural products consumption (Davis *et al.*, 2016). Small and medium agricultural investment takes the largest role in job creation globally.

There is a need to come up with strong policies and regulations to connect entrepreneurs and producers to global, regional and domestic markets to increase their profit margins and to be sustainable to cater for the increase in demand for food. Creation of connection to entrepreneurs in agriculture plays a critical role in providing sources of economic and social growth through agricultural enterprises. The World Bank Group (WBG) are critical role players in different countries supporting the improvement of infrastructure for access of markets in agriculture, increasing food supply and income generation as a business (Arinloye, Pascucci, Linnemann, Coulibaly, Hagelaar & Omta, 2015).

In most African countries, at least 80% of people are engaged in subsistence farming. Such percentage creates a gap between food supply and demand from consumers since food supply cannot meet the demand (Sachs, 2018); hence, this means African countries are importing food to meet the food gap in the market. In South Africa, the search for sustainable and productive emerging farmers is important for food security, as mentioned by Mmbengwa (2010). It also brings the previously disadvantaged farming entrepreneurs into the mainstream of the agricultural economy.

In South Africa, the agricultural sector is diversified within the private and corporate sector. Primarily, the Mediterranean and subtropical climate changes in South Africa support different agricultural opportunities. (Francis, 2019).

Despite the challenges in agriculture, farmers are taking up the use of technology to increase agricultural output while using less agricultural input. Specifically, South Africa supports agricultural policies as a method of increasing income generation among poor farmers in society via medium- or small-scale farmers. Efficiency within the production processes of the agricultural sector, production support to increase small- and medium-scale farmers, as well as conservation of natural resources are all strategically targeted by National Department of Agriculture in South Africa (Sachs, 2018).

Thus, this paper will discuss the contributing factors that lead to the success rate among emerging farmers.

3. Results and Findings

- Quantitative results

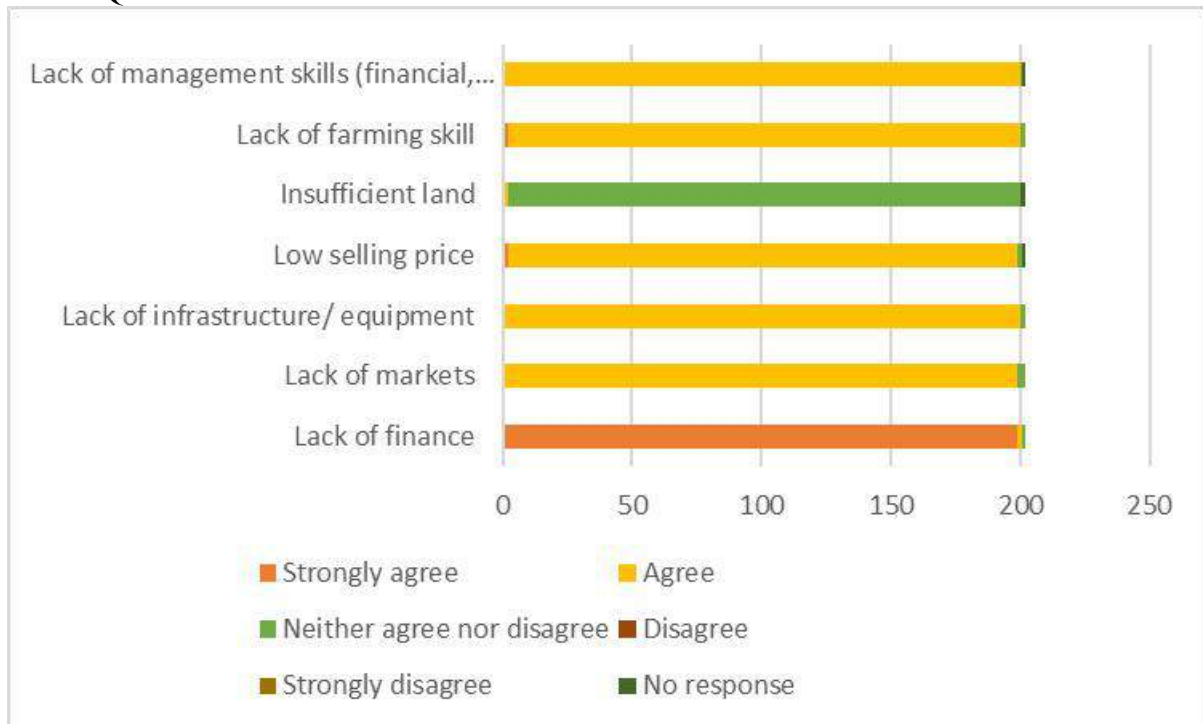


Figure 1: Factors contributing to emerging farmers' failure

The emerging were asked to rate how much each of seven possible factors contributed to their failure. Almost all participants who answered the questionnaire, strongly agree or agree to all the factors that are contributing to the failure on the failure of emerging farmers. Managerial components standing out in this feedback are the lack of management skills, farming skills, infrastructure, and lack of markets. From this feedback, it illustrates that government fails in the extension programme. The government is also aware of this problem and have tried to address it on several occasions (Harper, 2018).

It was mentioned in the literature study that the emerging farmer was selling to friends, family, and the informal market as the cheapest way of selling. Emerging farmers according to the literature study did not have any links with market agencies and were very expensive.

Even though emerging farmers are assisted by the extension officers from the Department of Agriculture, as per the literature review, the emerging farmers continue to fail in the farming industry and does not contribute towards food security. The emerging farmer needs more training concerning agricultural activities, marketing, and overall business management.

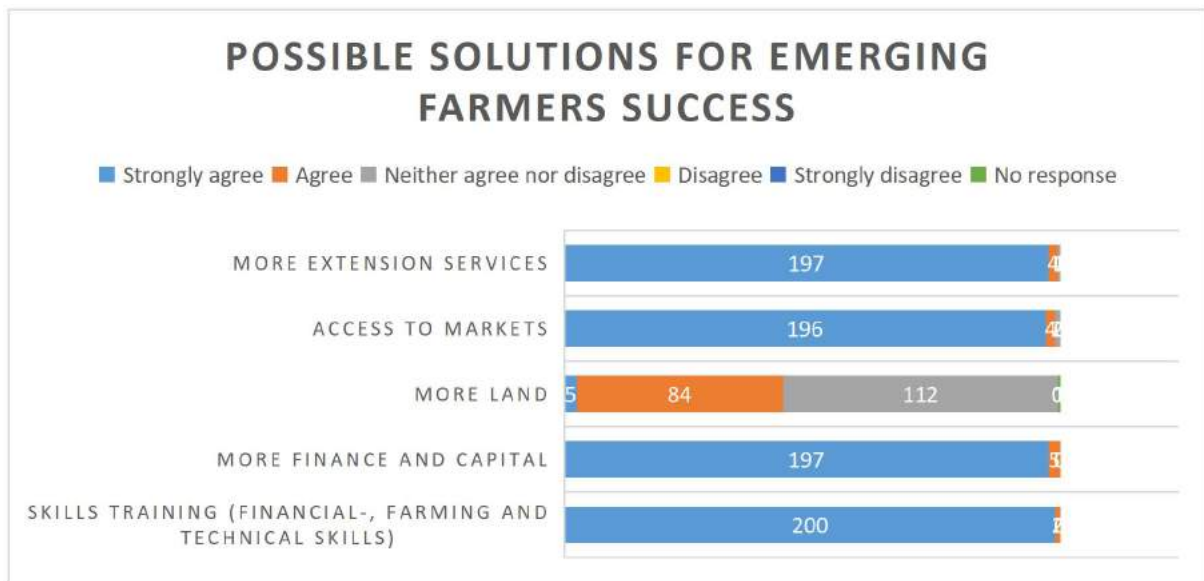


Figure 2: Possible solutions for emerging farmers success

Almost all participants, strongly agree or agree to the possible factors that can contribute to the success emerging farmers in agriculture. Managerial components standing out in this feedback are the need of management skills, more finance and capital, access to markets and the need to have more extension services. Marketing and skill training were also emphasised in the literature review. This also illustrate that the government is failing in the development of successful agricultural entrepreneurs

- Qualitative results

As mentioned above under the methodology section, semi-structured interviews were held with four purposively selected individuals, one from the Department of Agriculture (being the Member of the Executive Council at the time), one from an agricultural corporation responsible for agricultural development and two black commercial farmers within the North West province.

The following are the comparison arguments to the failure of emerging farmers followed between the four interviews:

- Misappropriation of CASP funds
- CASP programme in its existing form is ineffective
- Selection of the beneficiaries to this programme is key meaning poor selection of the recipients
- Inadequate government or department knowledge

The misappropriation of CASP funds and CASP programme in its existing that is ineffective was also emphasised in the introduction to this study because of the irregular, fruitless and wasteful expenditure year after year stipulated in the annual report of READ. Also, referring to the problem statement of this study, it was mentioned in the annual report of READ that for the 2020/2021 fiscal year, the CASP program had a budgeted value of R141m, but only R43m was actually spent on it, an under expenditure 64%. This emphasise that the management of the CASP programme in its existing form id ineffective.

The following are the comparison arguments to the recommendations to the creation of successful emerging farmers followed between the four interviews:

- Emerging farmers need technical support
- It is important to equip emerging farmers with what is needed in farming

- Training and empowerment are important.
- Communicate, report and engage with all stakeholders in agriculture i.e. commercial farmers, agricultural corporations, private organisations as well as other educational institutions that might possess knowledge and skills to the emerging farmer.
- On the job training is very much important to the emerging farmer.

From the above comparisons, it is clear that all the interviewees agreed what went wrong in the past as also on what is needed to be implemented for successful agricultural entrepreneurs.

This study also mentioned comparisons between the quantitative and qualitative results in connection that emerging farmers need clear guidance (extension services) from the department of agriculture that it fails to deliver. This emphasises the contribution made to answer all the research objective and to get solutions.

The key finding and the core of the result to this study is to empower and giving skill to those emerging farmers who must become self-sustainable and independent commercial farmers. Emerging farmers must obtain technical skill concerning farming, marketing skills, financial skills through effective training and extension support supplied to them. Emerging farmers do not possess the skill nor the knowledge to handle things when they go wrong - so they end up selling off all that, which was simply given to them. For example, selling cattle when they had calves, selling off the tractors intended for farming and selling the seeds to white farmers that should have been planted.

In addition, a major part of this is the failure on the part of government who also lack the knowledge and the skills to adequately identify and advise, therefore, they end up poorly selecting people (that contribute to the high failure rate of becoming successful entrepreneurs in agriculture) and thereafter failing to provide the necessary training, support, or any other appropriate intervention to see the project to success.

4. Conclusion

Agricultural development has been targeted by government as one of the main areas in which to improve the lives of previously disadvantaged people. The same is true of the North West province, with large amounts of taxpayer's money being invested in agricultural development initiatives, most of which are unsuccessful. This study, therefore, aimed to develop a framework that will serve as a mechanism to improve the success of emerging farmers in the North West province. The aim of the study was to create a comprehensive, sustainable, and appropriate capacity-building framework for emerging farmer SMMEs in order to contribute to food security, eradication of poverty, reduction of unemployment in rural areas and commonages through creation of sustainable and market-driven farming SMMEs.

As mentioned above, as part of the objectives of this study, the results of this study indicated that emerging farmer SMMEs need farming skills, financial, extension services and infrastructure to ensure the success of their farming enterprises. Besides the abovementioned factors, training and extension support were reiterated as the main determinants of success and failure for emerging farmer SMMEs.

4.1. Strategies to improve emerging farmers' success rate.

Is it evident, given the data gained from the quantitative and qualitative studies conducted, that private organisations ought to and would like to collaborate with the government on the development of emerging farmers.

In light of this, the government and other external role players in agriculture should adhere to the points that need to be emphasised in order to construct a framework for the training of emerging farmers:

- The importance of partnerships between the government and private Agribusiness (e.g. Senwes Cooperation, North West Cooperation, Development Financial Institutions, Processing Companies, Marketing Institutions, Commercial farmers, etc.)
- Marketing channels need to be explored to ensure that the produce of emerging farmers is marketed properly.
- Research and collaboration with universities play a crucial role in teaching and comprehending technical concepts for emerging farmers.
- Partnerships with commercial farmers need to be developed in a structured manner, and a mentoring program needs to be implemented.

The researcher wants to establish a framework so that both public and commercial agribusinesses can contribute to the success of new farmers. It would be suggested that Schedule 3 Part C, a provincial public entity, be established by the government, in particular the Department of Agriculture in the North West province. This should be a public entity where the private organisations should feel free to have an input to management, and daily operations to ensure better development of emerging farmers in the North West province. This should be a provincial public entity which is:

- Established in terms of legislation and provincial constitution
- Fully or substantially funded either from provincial funds or by tax, levy or other money imposed in terms of legislation
- Accountable to a provincial legislature.
- According to the PFMA, the public entities have been further divided into three schedules, namely:
 - Schedule 3: Other Public Entities
 - Part C: Provincial Public Entities

The objective of this public entity is to establish and manage the policies to be implemented on the selection, training, and monitoring process of the emerging farmers. The private sector (which will also contribute expertise, resources, training, etc.) should be represented on the board of this institution. It is proposed that this three-year on-the-job training program begin, and that this institution receive South African Qualification Authority (SAQA) accreditation. This is not to replace agricultural colleges, but on the job, training is very important. As a result, an emerging farmer will graduate after three years. These new farmers will be observed by extension officers and other outside officials, and they will submit quarterly performance reports in accordance with SAQA guidelines. An emerging farmer who does not perform will be kicked out of the three-year training programme.

The emerging farmer will graduate once the three years have been successfully completed. During this period, the emerging farmer would have accumulated enough equity and should be introduced to the land redistributing programme.

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Social Media And Urban Agriculture: An Emerging Field Of Study

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Keywords

Urban farmers, social media, food systems, internet ;

Abstract

Social media hold potential to develop the enterprises of urban food producers and traders. Recent studies have affirmed the potential of urban areas to become self-sufficient in vegetable and fruit production which implies the creation of local food systems that integrate diverse producers, scattered across the urban landscape. Social media can facilitate and help create such local food system. With this in mind, we re-interpret a survey completed by student researchers, that probed social media use by urban food traders and producers. We found the use of social media limited by costs and data access, and show how urban food producers and traders have adapted by developing hybrid systems that blend social media with word-of mouth marketing. We compare these findings with available literature and conclude on the key themes that will be important in the further study of social media in an urban agricultural context.

1. Introduction

Urban farmers and informal food traders have the opportunity to use social media to build enterprises, inclusive of clientele, a brand, their enterprise and a larger local food economy. Urban agriculture is an important opportunity for local municipalities as these areas have the potential to feed themselves (Walsh *et al.*,2022; Martellozzo *et al.*,2014; Thebo *et al.*,2014), provided sufficient land – 30% of the municipal area – is made available for the production of fruits and vegetables. These recent studies suggest that the structural constraints limiting urban food production could be overcome. Local food self-sufficiency in fruits and vegetables in a city is thus possible but would necessarily have to integrate many small, dispersed producers, and develop locally-based distribution and logistics systems. To mainstream urban agriculture and local food trade, we need to create a short path from production to retail, build local organising methods for sales and waste harvesting (to ensure fertility for production) and develop local institutions and opportunities to deliberate about food and its place in our society and economy. Social media would make all this possible, although it may not be sufficient. This article analyses research conducted amongst informal food traders and urban farmers with this in mind. The findings show how urban food traders and producers use social media in their enterprises. In a popular blog (<https://www.izindabazokudla.com/post/urban-peri-urban-and-small-scale-rural-agriculture-and-township-economies-a-manifesto>), we developed a manifesto for the creation of local food markets. This creates an imaginary useful to create new pathways for the development of urban food traders and producers in the informal sector in South Africa.

Basic information on the use of social media is necessary to ascertain if these systems have any potential to benefit urban agriculture and food systems, and, how these are used by

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emergent and informal producers and traders. This paper presents and analyses a survey of informal food producers and traders that investigated both agricultural production and use of social media to market the produce. This student research project and dataset is here re-interpreted in the light of more recent concerns about urban agriculture. The original survey delivered findings that are pertinent to new insights on urban agriculture and digital connectivity in South Africa and enables us to establish the extent to which UA is a viable activity in South Africa, enable us to show where and how social media is used for the marketing of food amongst producers and traders, the costs and benefits associated with it, and thus the current utility that may be derived from these systems. Although we found the use of social media to be pervasive, we also identify limits to its use, and these may be associated with the costs of data. Hence, we make a set of recommendations on how social media could be used to further the creation of local food systems for urban farmers and food traders.

This survey has clear limitations, and these are also of a conceptual nature, hence the need to reinterpret these findings with recent literature in mind. We nevertheless can make clear recommendations not only where the limits of social media use lie in South Africa (the costs of these services are still out of reach of nascent and emergent producers and traders) but also what a survey of such new urban agricultural producers and traders should focus on. We thus reinterpret the original findings from our student researchers, and present a set of issues that maybe relevant to future study of social media and urban agriculture.

2. Social Media And Its Potential: Costs As Driver Of Usage

Social networking sites are simple and cost effective (Morris and James 2017). They reach a large audience, and when combined with a consistent and efficient business plan leave opportunities for growth, can build strong brand loyalty among consumers, and increase sales (Duane & O'Reilly 2017). Stelzner (2015) emphasises the brand exposure this brings to enterprises, which would be impossible without this service. After the turn of the millennium, Castells emphasised the virtues of a network society (Castells 2010) and others the benefit of a peer-to-peer social mobilisation strategy (Engeström 2007). Social media platforms could thus bypass the existing food system, create a new market pattern, and this may be easiest in the informal sector, without constraints of governance and regulation. Malan (2015: 57) mentions short supply chains, and integration with and innovation in retail, embedded in local waste systems and social media could provide the means and communication channels to maintain such a system. This might alter how a business is perceived by consumers and is a new frontier in marketing and product design.

Freedom House's "Freedom on the net" (<https://freedomhouse.org/country/south-africa/freedom-net/2021>) indicates access to and use of the internet is broadly "free" in South Africa, with a score of 73/100. Regulation is independent and there is an absence of censorship and restrictions on online content. Manipulation and harassment, as is evident elsewhere, is nevertheless prevalent here. Connections to the global web are also stable and the internet is clearly open and useful to most of the South African population.

Freedom House reports that 63.3% of all households in South Africa have at least one member with access to the internet. In full, 59.5% of urban dwellers have access and in Metropolitan areas – the larger cities – 67.8% of households enjoy access to the internet, as would be the case in Soweto where our survey was done. 12% more men than women have access and 71% of the youth own a smartphone. As we write, the costs of smartphones continue to decline, reinforcing the idea that internet access could hold benefits for the transformation of the South African economy. There are significant efforts underway to make access affordable, but data costs on the mobile carriers is a point of contention as our study indicates. Freedom House mention that 42% of households have no access due to this. These are the households who would benefit from the local production and trade of food but have no means to access it through the internet.

South Africa is experiencing significant unemployment, which currently stands at 34.9% (<https://www.statssa.gov.za/?p=15407>) as compared to 29.1% in 2019 right before COVID when the survey was done (Statistics South Africa, 2019:2). Statista reports a monthly income figure of R23 982.00 per month per person for November 2021 (<https://www.statista.com/statistics/1227081/-average-monthly-earnings-in-south-africa/>). We compare this with urban agricultural incomes below. Unemployment would condition and limit many activities of people, including data purchases. In such a context, a social media-based market would be inappropriate and possibly regressive. Urban farmers do not only face financial challenges but also lack skills and knowledge to create networks facilitated by technology (Mpandeli and Maponya, 2014:135), which very few apps enable them to do. We also note the absence of an application that is focussed on the creation of local food networks. Due to a lack of smartphones, money, and knowledge, it is difficult for disadvantaged urban farmers to expand and improve their farming operations using social media. We discuss how these factors interrelate below, emphasising how farmers and traders used lowest cost options for trade including face-to-face trade, in effect innovating above the affordances a communication channel makes possible. In our analysis, we emphasise the limits to social media-based food trade, highlighting the key face-to-face benefits that may be created by urban farmers and food traders as they develop their enterprises. This leads to interesting recommendations, which we deliberate on in the conclusion.

Research on the utilisation of technology by urban farmers in Soweto is in an early stage. We do not know how urban producers and traders use applications and social media as a communication and marketing strategy, and if this has any promise of further development of their enterprises and the economy. The survey also aimed to identify the devices used by urban farmers, their access to the internet, and their communication methods with customers. We also identified the production systems of urban farmers, and the incomes, labour, and methods of sale used. We also asked questions on the costs and benefits, and preferred communication methods in the use of social media by urban farmers and traders. We also identify limits to this survey, and base our recommendations on ways these limits can be overcome and what additional issues the local self-sufficient production of food in cities invokes.

3. Urban Agriculture And The Informal Sector: a Proto-Food Systems

Urban agriculture is defined by Salau and Attah (2012) as producing food and fibre within the urban environment and its borders for household consumption and the market, including small scale processing and marketing activities. Urban farming can take place in a variety of ways, including community and backyard gardens, as well as rooftop and balcony gardens. Very many different forms and sizes of farms may be identified. Additionally, some urban farmers create a fruit and vegetable store in front of their homes or sell on the street as street vendors to increase their income (Gwamba, 2018:13), linking production and retail. We thus see the beginnings of a new food system that may draw on local resources for sustainable production. Battersby (2011: 546) cautions us to understand the “connections” between formal and informal food sectors, and the opportunity for social media to rationalise these connections is important. They can be used for higher order organising amongst stakeholders. This could extend to participation in broad public fora (RUAF 2010; UN Habitat 2008) or how “partnership brokers” (Serafin 2015) could organise producers and consumers into short food supply chains. We thus speculate on the information processing abilities that social media make possible in the conclusion.

Current examples of urban farming and informal food trade emphasise the informal nature of urban land access (Suchá *et al.*, 2020; Suchá & Duškova 2022), particularly in Soweto, where our survey was done. They advocate for the implementation of the principle of a “mutual beneficial relationship” (2020: 4) between urban farmers and landowners to secure tenure, and this could be highly conducive to interaction on social media. Social media, which has an “informal” character, could thus be used to maintain not only sales and marketing, but also access to land, and by implication, further relationships around investment, production and marketing. The governance of urban agriculture could also benefit from extra-institutional governance outside formal arena’s (Malan 2021) and social media can certainly play a role here. Urban agriculture struggles to produce food in significant

quantities (Zezza & Tasciotti 2010; Crush *et al.*,2010: 8), but this is done in a structurally constrained context. This highlights land tenure and its connection to income and livelihoods, and the informal ways these operate. Would social media create space for innovation and growth in urban agriculture, particularly if it can adjust how we manage land, resources and opportunities? To answer this question is outside the scope of this paper, but is relevant to the pronouncements of Walsh *et al* (2021) Martellozo *et al* (2014) and Thebo *et al* (2014) that 30% of land needs to be set aside for food production for municipal areas to be self-sufficient in vegetables and fruit. This structural shift will make land available for urban agriculture and could change its impacts. Should this be done, social media will certainly be used and this survey explores the potential of this avenue for growth.

4. Social Media And Marketing: A Hybrid System

Social media refers to web-based digital technologies that enable individuals to exchange and debate information (Edeoghon and Esene 2018). In South Africa the use of dedicated agricultural applications are emerging, like the Khula! App (<https://www.khula.co.za/>). Digital platforms such as Facebook, Twitter, YouTube, and WhatsApp are relevant, with Facebook appearing to be the most often utilized social networking site by agricultural businesses, owing to its vast appeal among the intended audience.

Tweeten (2014) emphasises access to technology and connectivity, as well as experience, as barriers to technology use. These barriers can have a negative impact on customer service – the totality of what an organisation does to add value to its products and services to meet customers’ requirements (Machado, 2015:6). As social media becomes pervasive, urban producers and traders have to adapt. By maintaining this customer experience the urban farmer and trader is in effect maintaining the network of trade and production. In this way they create customer value as the net benefits accrued over and above the total cost incurred (Pienaar and Vogt, 2016:16). Social media nevertheless enables a trader to go beyond the “5 Rs of order processing” that relate to the right quantity and quality (Chuah *et al* 2017: 126) charged at the right price and delivered (Sain 2017: 2) at the right location (Nieman, 2017:22). Hence, we look at how these services are used, to build and maintain relationships and speculate on the degree to which it could create a new pattern of trade in the food system.:

5. Producing Urban Agriculture Through Social Media

Farmers and traders would be able to expand their potential market by encouraging interaction amongst people who use the internet to accomplish a specific purpose such as marketing (Cleary, 2015:1), but also suggests how future development may play out in a hybrid context. The ability of social media to bind communities and create and maintain social capital is noteworthy. This could reorganise local production and consumption to create “symbiotic communities” (Signer *et al.*,2020: 587) or “autocatalytic networks (Lenton & Latour 2019) that can reorganise production, consumption, waste management and recycling, and thus “produce” a sustainable food system as it organises stakeholders into new relationships. These communication channels can extend to municipal planning, and although we did not touch on these larger issues in the survey, we make recommendations on how this can be taken further, which concerns the development of a public forum (Dubbeling 2010; UN Habitat 2008) or “public innovation lab” (Williamson 2018) that can steer food systems transformation.

6. Research Methodology

Our survey focussed on urban farmers and food traders in the Metropolitan area of Johannesburg, and specifically Soweto, where we may expect greater than normal internet access. The descriptive research design (Saunders *et al.*,2019:187-188) tracked respondents who frequent the iZindaba Zokudla Farmers’ Lab, and this Lab is located in Johannesburg, the biggest Metropolitan Municipality on South Africa. These traders are also informal, nascent or emergent (although this was not asked directly, the sampling drew from a population who frequent the Lab in order to develop their businesses, and the Lab is aimed at empowering new and emergent traders and producers).

A descriptive quantitative survey (Saunders *et al* 2019) was conducted using a structured questionnaire to collect data from urban farmers in Soweto. According to Thebo *et al* (2014: 2)

between 10 and 70% of urban dwellers may be engaged in urban agriculture. They suggest a median of 266 million urban households practicing urban agriculture, and it is clear this is a pervasive activity throughout the world, and we may see at least 100 000 urban farmers in Soweto according to these estimates. The poor are disproportionately represented in urban agriculture, as they are the first to take this up. This is pertinent for social media use and magnifies the cost driver of social media as particularly important, the informal character of food production and trade in the city, and the limits of managing all this on social media. The sampling clearly crowded-in resource poor farmers and traders, and this is reflected in the findings.

The survey initially aimed to hand out the questionnaires to the 400+ farmers that attend the monthly iZindaba Zokudla Farmers' Lab in Soweto. This was not possible owing to COVID-19 lockdown regulations in 2020 that abruptly terminated hosting this event. iZindaba Zokudla however has a significant presence on the internet, and several WhatsApp groups and groups on Facebook have formed. Hence, we were able to distribute the questionnaires via WhatsApp and Facebook group chats which were part of the communication network that emerged around iZindaba Zokudla. The response rate was very low, and researchers were forced to resort to telephonic interviews to reach farmers who did not have access to the internet or adequate data to respond. Eventually, after repeated phone calls, data from 40 farmers were collected. The structured questionnaire followed a purposive sample, where we looked for respondents who are trading or farming (or both).

All respondents had the opportunity to be informed of the aims of the survey, and all accepted ethical procedures were followed, including institutional review and approval. This survey created a database that includes farmers and food traders who are active online and who have used social media to a significant extent in their enterprises. The survey was piloted, and this increased its reliability. Because the survey was descriptive, we used words and phrases that would be familiar to urban traders and producers, and the themes were all common themes in agriculture. Social media use, with its own specific jargon, also presented challenges. However, the concepts used in the survey were simple and derived from the platforms themselves. Anyone using these would understand them. We believe the farmers and traders are familiar with the language and concepts used in the survey. The results obtained showed significant consistency with previous studies of urban agriculture. As this was a limited survey, we are able to express some confidence in the quality of the findings.

There were nevertheless some conceptual challenges in the survey. The question on the farm profile – that includes reference to “farm owner” or “manager” is ambiguous, as ownership of land is in question, and may be attained through informal means (Suchá *et al* 2020; Suchá & Duškova 2022). Both may refer to a de facto “ownership” or “access” to land. From experience, “ownership” could mean the farmer has secured the land either through a contract or through an “informal” arrangement. Clearly, the word “ownership” needs to be carefully interpreted in the light of this new research. Answers to our question “where do you farm” was also misunderstood, as some indicated they source food from the Johannesburg Fresh produce market. This is clearly a source of food for traders, but farmers would also have answered this in the affirmative, indicating complex supply chains for urban food trade in Soweto. These questions need to be rethought. We discuss this in the conclusion and suggest ways this can be better enumerated.

There is no database of urban farmers in Johannesburg and surrounding areas, and we have no information to clearly set out how far the findings from this survey can be generalised, although we note that urban agriculture is pervasive globally. The sampling strategy does make some generalisation possible, but it is also limited as we used a purposive sample that could have crowded in respondents. However, they offer valuable information from farmers and food traders who are using social media. They represent a group that is active on these platforms, and the findings thus speak to how these platforms may be used by urban farmers and food traders. This sample allows us to generalise to a limited extent how these systems can be used by urban farmers and food traders. We interpret the findings in the context of well-developed theoretical positions on urban agriculture and local food systems, and social media use. This allows us to generalise with reference to these sources

of knowledge and position our findings in the context of the greater movement towards local, circular and sustainable food systems.

7. Results and Findings

7.1 Biographical data

According to the research, all 40 farmers were African and resided in Soweto. Females comprise the majority of respondents (55% female, 45% male), as may be expected. Respondents ranged in age from 22 to 71 years, with the majority (43%) falling between the ages of 32 and 41 and 22% between 21 and 31 years. It is evident that an increasing number of young adults and middle-aged people are taking an interest in farming. One explanation for this could be a shortage of employment possibilities, and farming is an accessible choice for maintaining food security and supplementing income. The educational status of respondents revealed that the majority (57.5%) completed Grade 11 or lower, followed by those who completed Matric (22.5%), while 20% completed tertiary education. The fact that most respondents (80%) lack a higher education may have affected their decision to start a farming business to produce revenue and emphasises that the poor dominate this activity. Social media may be accessible to a very wide pool of users, and educational attainment is of lesser importance in its use. It also emphasises the “local” character of urban food trade and production, as these producers and traders have a low opportunity for social mobility. This in turn reinforces our aim to transform these systems to build local solidarities and hence they in a sense constitute a proto-food system amongst practitioners.

7.2 Farm profile

The majority of respondents (75%) own and operate their own farm (Figure 1), although we are aware that access and ownership may not be clear or permanent, as Suchá *et al* (2020; 2022) emphasised. Of the respondents, 18% are farm managers, and several respondents claimed that because it is a family business, family members typically oversee the operation. Only 8% are general workers, with most of these workers employed by larger producers. This is consistent with the findings of Suchá (2020) that underscores the informal nature of land access in the townships of South Africa. This augurs well for the interpretation that will follow, as this forms a base for social media to draw upon and build larger systems of exchange. The existence of farm workers suggests the occupational category of “urban agricultural worker” is emerging, further suggesting the sector is open to further development.

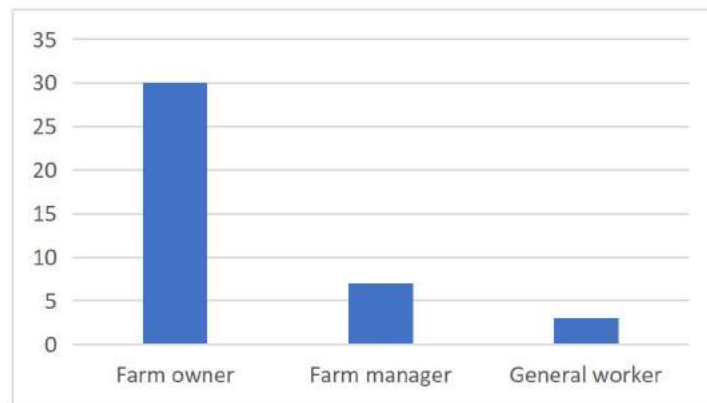


Figure 1 Occupation/Function on the farm

7.3 Years of practice

A third of the respondents (33%) had 4-6 years of agricultural experience (Figure 2), followed by 18% who started their farms more than 15 years ago. These long periods of engagement with urban agriculture points to a maturing sector. Please see below.

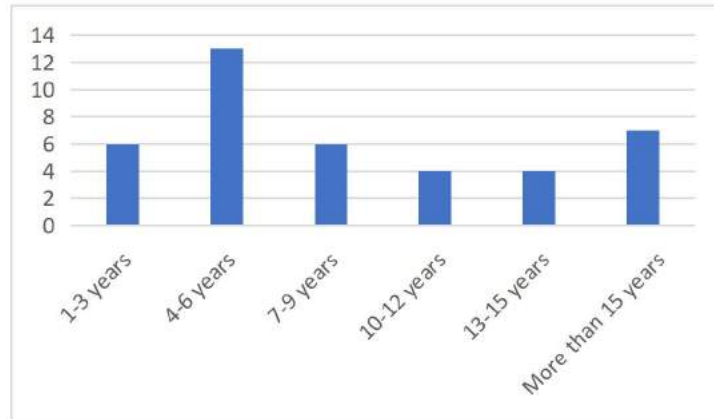


Figure 2 Years of farming practice

7.4 Agricultural production systems

Crawford (2021) recognizes different production systems of urban agriculture, including community gardens, rooftop gardens, aquaponics, vertical farms, greenhouses, and peri-urban farms. The research identified the following sources of food: rooftop gardens (2.5%), container gardens (2.5%), sourcing from the Johannesburg Fresh Produce Market (2.5%), backyard gardens (15%), open land gardens (35%), and community gardens (42.5 %). Community gardens and “open land” gardens are likely to be managed in “informal” ways, and could indicate pervasive systems in place that enable access to land and productive resources. The diversity of production sites and implied techniques augurs well for a robust and multi-faceted urban agricultural sector. Their small sizes, implies we have to organise many smaller pieces of land for food production and is suggestive of additional communicative methods. The mentioning of the Johannesburg Fresh Produce market in this answer, under “other” also indicates the deep linkages between urban agriculture and the larger food system. Urban farmers are thus integrated with own, local and distant and rural markets for food. This diversity of sources will enable the enterprises to deliver over and above the seasonality they will encounter in the urban area.

Diekmann et al., (2018) emphasise the nutritional advantage home gardens give, albeit in the “Global North”. Csortan, Ward and Roetman (2020) emphasise that years of experience and knowledge has a positive relationship with garden efficiency, and this is also borne out by urban farmers in Soweto. This in turn suggests lucrative opportunities for training and research on production techniques. They also emphasise the value of labour, which is also evident in our survey. Gardens, according to them (2020: 27) offer “access to a cheaper alternative” and they identify “raised-mixed” methods as most productive. These may be evident in open land, backyard and community gardens.

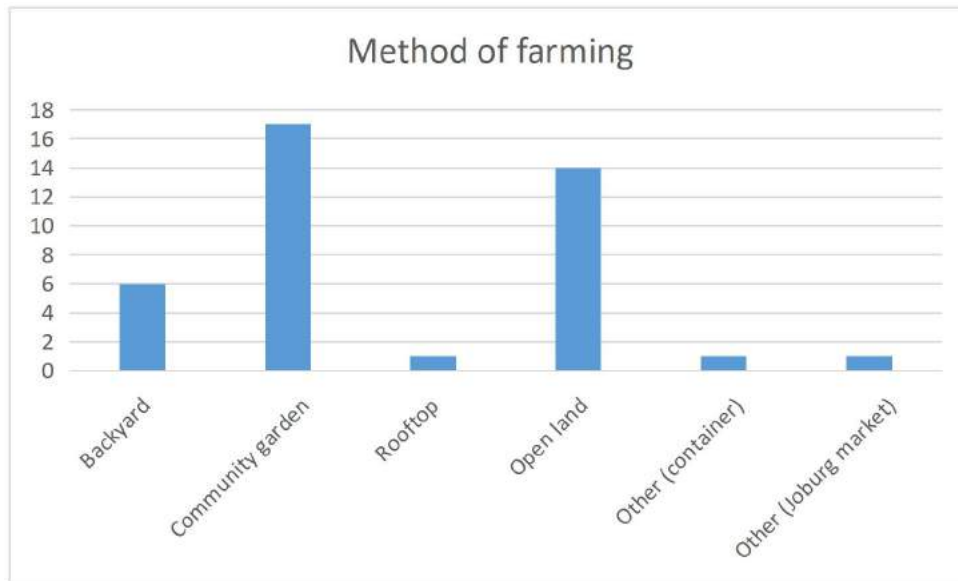


Figure 3 Techniques of urban agriculture

Rooftop production would normally use hydroponic or aquaculture production systems. These are prevalent in Soweto, although rooftop space is limited, as single story units dominate. Nevertheless, the existence of such production systems, in a confined space, point to the diversity of practitioners, and production systems. This suggests that the sector is able to mature and consolidate and be susceptible to engagement on policy issues. The findings on the fresh produce market may be explained by the fact that both traders and producers were targeted in the research.

7.5 Number of employees

According to the research, 40% of respondents do not have any employees on their urban farms. The respondents operate the urban farm alone and rely on assistance from family. This is typical of the informal sector, where enterprises are often “individualised” (Petersen 2020). About a third (32.5%) have at least one person assisting them or have a business partner. Typically, one partner will operate the business while the other does various business-related activities. Only 12.5% of the farms employ more than five people. These farms do provide work for a small number of individuals, they do so on a small scale but the existence of larger numbers of workers on the larger farms, indicates that this employment category has some merit. This would support the development of an urban agricultural training programme, as skilled workers could enhance productivity. Labour costs are a significant expenditure for urban farmers (Signer *et al* 2020; Csortan, *et al.* 2020) but the ability of Soweto farmers to employ people seems to be significant. This indicates the maturing character of the sector, and the need for labour indicates a significant redistributive potential.

7.6 Income

Our findings point to significant opportunities for urban farmers to earn income, although these do not beat the average wage in South Africa. Half of the farmers (50 %) make a net weekly income of between R0 - R499 after reinvesting a portion of their revenues (Replenishment of the farm or acquisition of additional supplies required for farming operations) This is slightly lower but comparable to incomes in the informal food catering sector (Petersen 2020) (Figure 4). About a quarter (18%) of the respondents earn an average of between R1000 and R1499 per week, which occurs most commonly during peak periods, which are typically at the end of the month or the start of the following month, according to the respondents. Farmers earning between R500 and R999 per week, as well as those that service larger markets and earn more than R2000 per week, make up 13% of respondents. The highest recorded sales normally take place at the end of the month (Figure 5). Generating an income of more than R 2000 per week indicates that urban agriculture and food trade could enable decent incomes. These could be exceptional farmers, whose practices need to be further

studied, as they may indicate not only how such incomes can be achieved, but also how we could move the whole sector to higher incomes.

Kapoor & Kumar (2015:215) affirm this buying trend driven by customers receiving their salaries at the end of the month. This overlaps with the social grant payment days and wage payment dates. This indicates a responsive selling strategy, optimised to the earning patterns of the consumer. Urban farmers and traders are responsive entrepreneurs who are able to adjust and manage their enterprises as new opportunities emerge.

Many studies have emphasised food insecurity amongst urban farmers in South Africa (Crush et al 2010) and the figures above seem to suggest that urban production is insufficient to ensure food security. The cost of an acceptable food basket in Johannesburg, according to the organisation Pietermaritzburg Economic Justice and Dignity, is R 4748,87 per month in July 2022 (https://pmbejd.org.za/wp-content/uploads/2022/07/July-2022-Household-Affordability-Index-PMBEJD_29072022.pdf). Only the most proficient urban farmers would be able to match this. Urban agriculture is in many respects a survivalist activity, but the most proficient farmers' incomes support the idea that this could be a path to economic development.

We need to know the contexts of such proficient farmers, and how they can garner such incomes from their farms. The existence of such proficient farms is evident in the literature and in anecdotal accounts and indicate that local self-sufficiency may be achieved. However, the stark differences between them and others who earn much lower incomes, suggests that the path to self-sufficiency would only be possible if the sector can transform significantly, as would happen if a comprehensive local plan was adopted to promote urban agriculture.

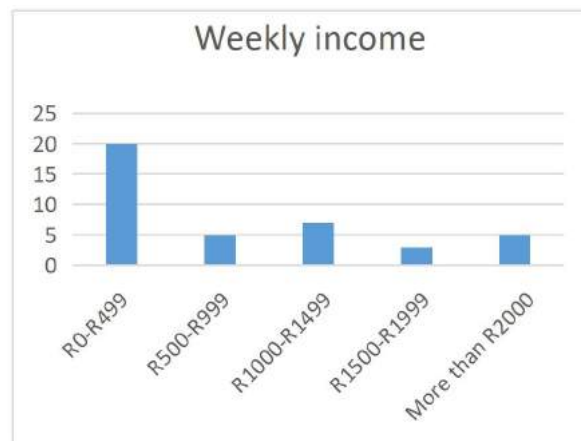


Figure 4 Weekly income

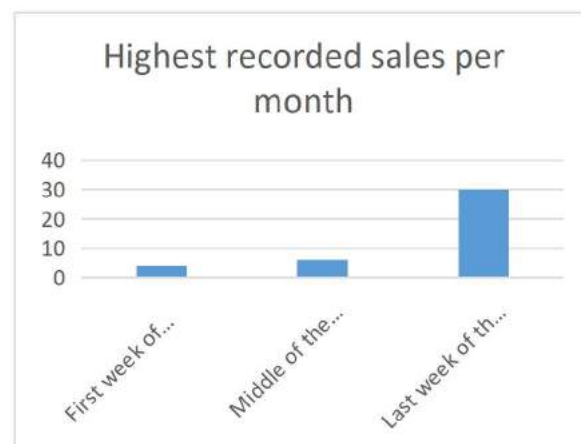


Figure 5 Highest recorded sales per month

7.7 Selling methods

Farmers lack internet access, and this is often unaffordable (Lyle *et al.*,2013: 10). Many lack smartphones and others lack access to the internet. As a result, many farmers in Soweto are unable to advertise or sell their products online. We also see this in the absence of applications used, and the absence of the use of the Khula! App (locally developed) indicates significant work is needed in popularising and promoting these applications.

Farmer's markets are small tables set up in open spaces where they sell their fruits and vegetables to passers-by. The majority of respondents (75%) were street vendors, while only 3% of the respondents uses WhatsApp for commerce. However, regular customers are most likely to place an order through the cell phone messaging application, indicating the ways social media create and maintain networks. This limited use of WhatsApp needs to be interpreted with reference to the pervasiveness of face-to-face trade and relationships. We thus ask, in the conclusion, if this is the result of the high costs of data and connectivity in South Africa and deliberate further on how these networks can be maintained and developed further by urban farmers and traders.

Only about a quarter (18%) of the respondents earn R 1000 per week or more. They would be able to produce enough to meet the needs of a wider market. These producers and traders are commercially focussed, suggesting that a class of producers and traders may emerge in urban areas if conditions are right. According to the data, the majority of farmers in Soweto work as street vendors, with only a small number of farmers selling their produce through social media platforms such as WhatsApp. The interaction between production (farmers) and trade (vendors) is a key point of interest. This may indicate that a more complex pattern is emerging, with farmers and hawkers and traders dividing the labour of urban food production and sales. This suggests that a relationships dependent food pattern is emerging, which would be open to maintenance through social media.

The pervasiveness of face-to-face relationships is also important to note. This could be accounted for by the costs of data and connectivity, but also that organising and mobilising customers would be most effective at the local and immediate level, and that the real relationships count in doing so. Hence, we can infer that only the most basic requirement of a sustainable local food system is evident in current patterns of trade, but that significant changes, in data costs, relationships building, and locally embedded production techniques are needed to reach its full potential.

7.8 Devices

Respondents primarily use smartphones (70% as per Figure 6) for communication. However, the primary method of communication between farmers, without connectivity, and their customers is word of mouth (58 %) (Figure 7). The pervasiveness of smartphones indicates that connectivity is available, but then the pervasiveness of word-of-mouth communication suggests data costs are a barrier. However, a future sustainable and local food system would necessarily have to be a hybrid system that uses social media and other digital tools in addition to face-to-face organising and marketing. This would be conducive to the development of ancillary activities around urban farms, like the local harvesting of wastes, and their further processing in local sites. Face-to-face relationships would be necessary to educate consumers about the value of local wastes, both food and recyclable wastes, and this may have to take precedence over a media and content heavy social media strategy.

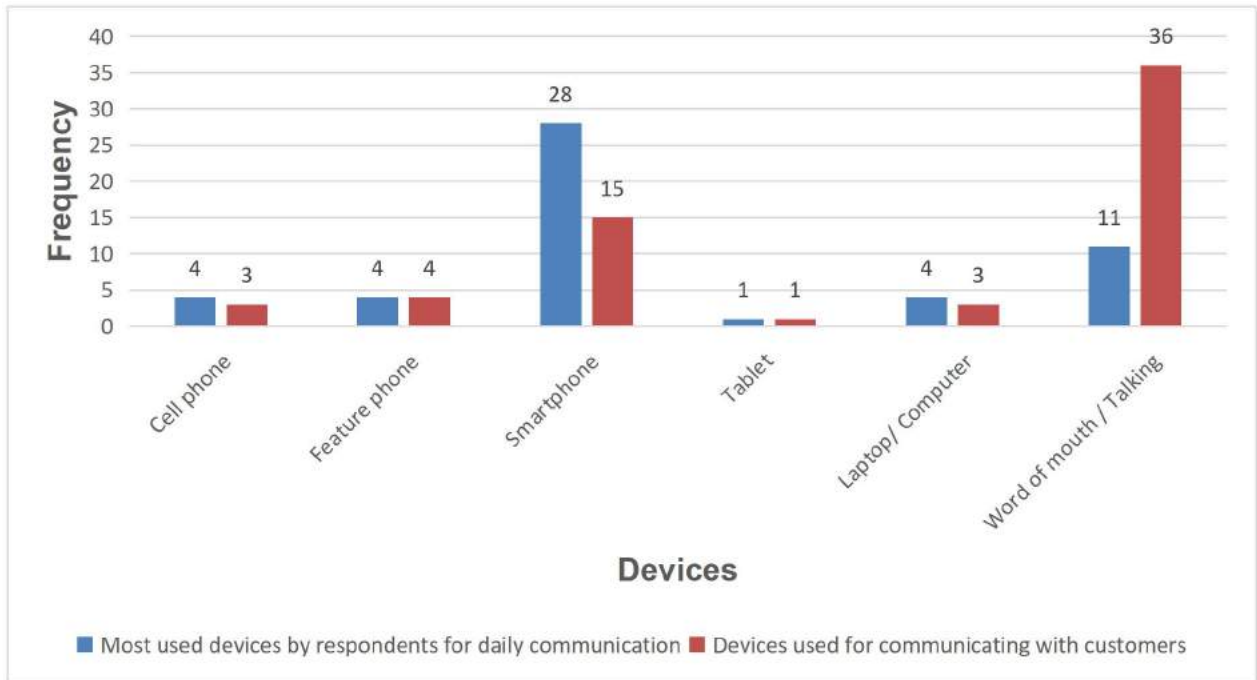


Figure 6 Devices

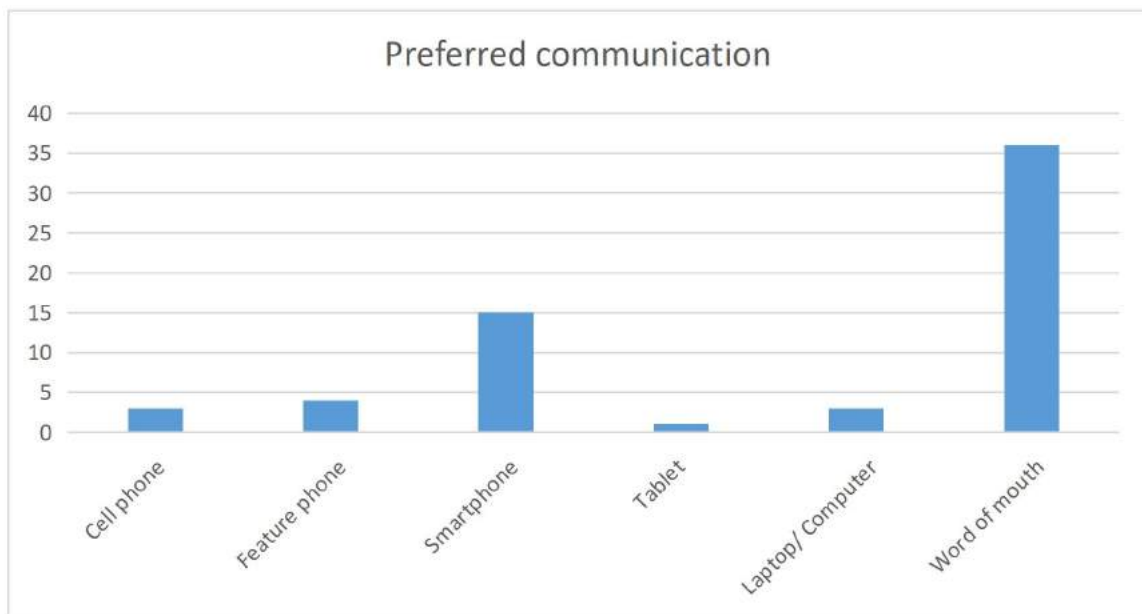


Figure 7 Preferred communication method

7.9 Internet access

Lyle *et al.* (2013:10) found that urban farmers in Soweto do not have accessibility to internet connection or smartphones due to affordability. Many farmers therefore lack the ability and resources to advertise or sell their produce online. According to our survey, two-thirds of the farmers (67%) do not have access to the internet. This underscores the need, in any attempt to develop this sector, to blend social media with face-to-face interaction, and suggests that farmers and food traders need to build a hybrid system to communicate to customers.

The respondents with internet connection prefer and mostly use WhatsApp for communication (Figure 8). WhatsApp seems to be able to fill this gap, suggesting that a general communication platform may be sufficient for local food trade, but this may preclude the use of more complex network management strategies. We however are mindful of the universe of multiple platforms that

may be relevant here. Social media is pervasive as a multiplicity of platforms, and the benefits of social media emerge on multiple platforms. Data costs may prohibit such use, but this may also point to the lack of a comprehensive application that is tailored to urban farmers. Even though many respondents own smartphones, they lack internet access (16,85%) to communicate with their clients and therefore depend on word-of-mouth communication as indicated in Figure 9.

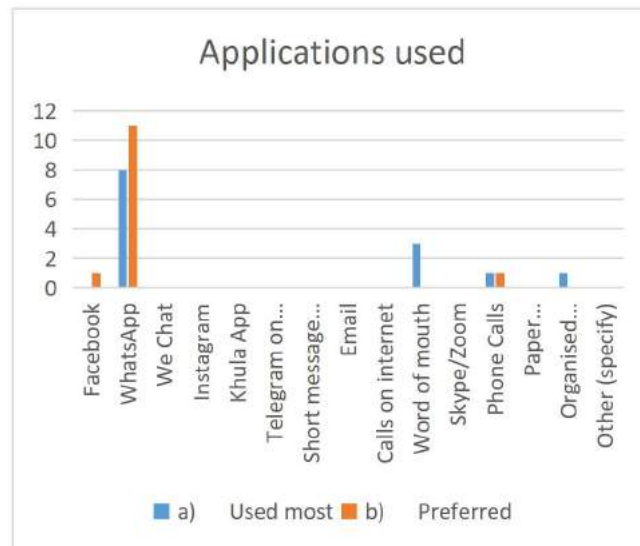


Figure 8 Applications

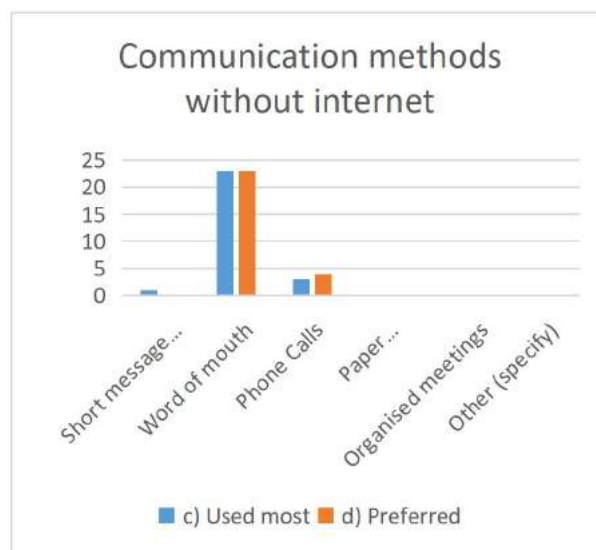


Figure 9 Communication methods without internet

One of the barriers to respondents obtaining internet connection is the prohibitively high cost of data and airtime. Three-quarters of the respondents (75%) spend between R0 and R99 on data and airtime and this is mostly used to contact family members and not for business purposes (Figure 10). Trade is blended with social reproduction, as respondents use WhatsApp for multiple purposes. It is clear the investment in data will not lead to the required returns as customers are also limited in using social media. There are many food traders in Soweto who source their food from the Johannesburg Fresh Produce markets through various channels, and they compete with local producers. Data costs may prohibit innovations in local production, but it is necessary to contemplate the possibility of developing a dedicated application to stimulate local food systems. Hence, we can suggest that future development of applications could blend social and business functionality, particularly at retail sales level, but data costs would have to be incorporated into the business model.

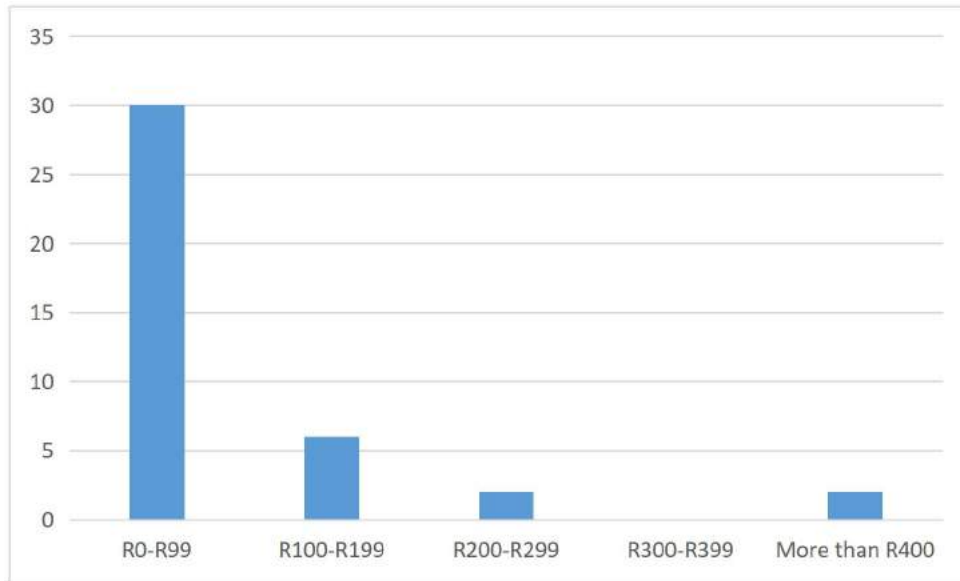


Figure 10 Connectivity costs

7.10 Applications

According to Varrella (2021), WhatsApp is the most popular social media program in South Africa (93% of internet users) and accounts for 23 million users in the country, followed by YouTube (92%) and Facebook (87%). YouTube (92%) has surpassed Facebook (87%) in South Africa in terms of usage, owing to lower data costs and increased broadband accessibility (HelloYes Marketing, 2020:1). However, in 2015 Facebook Lite was launched to developing markets and designed to work in areas with slower or limited internet connections (Facebook Lite 2018). By 2026, the expected number of WhatsApp users in South Africa would reach 28.6 million. The use of WhatsApp is thus highly appropriate, and underscores the functionality of this platform also as a business platform. Its ability to blend social communication and business communication needs to be noted for the development of future applications. It also raises question on the suitability of platforms like Facebook for the stimulation of local food economies. Data costs may be the root cause of this, but we nevertheless have to mention that the simplicity of a pure communication tool, may overshadow complex platforms and the interaction on them.

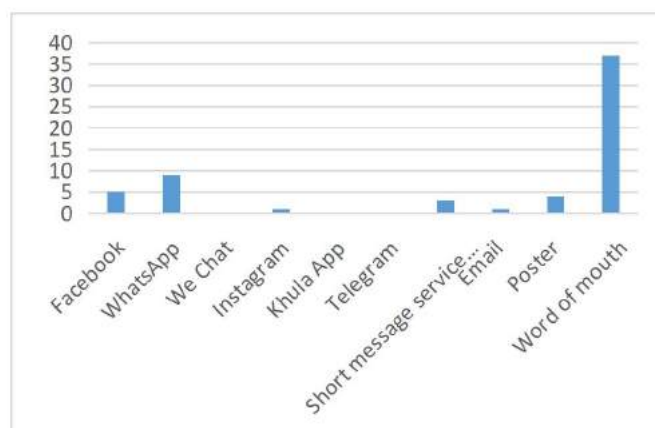


Figure 11 Applications utilised

As mentioned before 54% of respondents used smartphones for communication, but only 24% used them to communicate with clients (Figure 11), primarily using WhatsApp and Facebook. This deficit in digital communication should alert policy-makers on the ways in which urban agriculture and food self-sufficiency can be managed. It directly points to the need to mobilise in ways other than social media, and emphasises the need for face-to-face communication and organising.

7.11 Advertising

The respondents view word of mouth as a critical (88%) mode of advertising. Additionally, as seen from Figure 6, the farmers claimed that cell phones (65%), feature phones (70%), tablets (78%), smartphones (58%), and laptops/computers (78%) do not play a role in their farming business. The use of technology therefore has little impact on the way the farmers advertise their produce as they heavily rely on word-of-mouth advertising. This suggests local food systems are already evident in Soweto, with strong relationships being built, but this is being done with only the slightest use of social media. This is a sufficient basis for the development of further processes, like waste harvesting, and consumer education, but does not preclude the use of other, still unknown ways of organising. Should data costs be the key barrier to the adoption of more social media for these processes, we may see local sales, waste harvesting and local advertising emerge as key drivers of a local food system. However, Pienaar and Vogt (2016:16) argue that a successful supply chain requires information accuracy, visibility, and access to real-time data, and unfortunately, some respondents lack access to technology, preventing them from engaging with their customers efficiently (Lyle *et al.*,2013:10). The ability to draw on the analytics of platforms would be lost in a pure face-to-face approach to local food system development, and hence we are able to conclude that significant change may be expected if data costs can be lowered.

The majority of respondents utilize word of mouth to advertise their produce, and the freshness and quality of the produce is what attract clients. Most farmers responded that they prefer street vending since it allows them to gain new clients daily as people pass by and opt to purchase in addition to their regular customers. Farmers occasionally utilize airtime and data to communicate with suppliers and consumers, but most of their communication with customers and with one another occurs through word of mouth (Figure 7). They rely on passers-by to spread the word about their produce's quality. Only a small group of respondents use WhatsApp and Facebook as social media platforms to communicate with customers. According to the respondents, customers choose these modes of communication since they are economical and convenient to use. These are the three most viable modes of contact between respondents and their consumers. Additionally, the farmer-customer relationship is critical for effective communication because it is built on trust and an understanding of the customer's purchasing patterns.

7.12 Financial implications

Overarching our findings is the costs of data, and there is a dissonance between the state and society's wishes to expand internet access, and the costs of data. Urban agriculture is as old as cities, but in our social imaginaries it is a new phenomenon. It would most likely only be able to reach its full potential in a context where hybrid systems are used that straddle digital and face-to-face relationship building. Such hybrid systems would be necessary to develop a sustainable food system that responds to local priorities and resources. The beginnings of such a system is evident, but data costs and application development undermines the achievement of a sustainable local food system.

8. Conclusions

Farmers in Soweto rely heavily on street vending to sell their produce to clients. Impulse and convenience purchasing are evident in the usage of word-of-mouth communication. Furthermore, word of mouth is primarily employed by persons who do not have access to the internet. As a result, this group of farmers have not exploited the value added by technology to their operations, and we found, in general, the cost of social media use are too high for urban farmers and food traders. However, respondents with internet connection rely on the WhatsApp platform due to its simplicity of use, accessibility, affordability, and client preference..

9. Recommendations

While social media can aid urban farmers in promoting their produce, there are limitations which include a lack of connectivity due to the high cost thereof, and a lack of information regarding the use of social media as a marketing tool underscores the critical nature of training in this strategy. We also want to point to the lack of a comprehensive application that can connect production with households at the retail level.

The following recommendations are made considering the findings:

- Training for urban farmers in the use of social media as an advertising tool.
- The development of an appropriate application for urban farmers that can manage all the processes necessary to build a sustainable and local food system;
- The lowering of data costs to stimulate wider adoption and use of social media by nascent and emergent urban traders and food producers.

The formation of dense relationships between traders, producers and customers through social media is possible, but is yet unrealised. Many have indicated that the development of urban agriculture can be accomplished by integrating stakeholders and actors in multi-stakeholder forums (RUAF 2010; Malan 2020) or public innovation laboratories (Williamson 2018). These would have to be hybrid, between the digital and real life, and would build on the relationships already evident amongst urban producers and food traders.

We further recommend that future research emphasise the following issues:

- To what extent is land and access to it mediated by informal systems? What role can social media play in enhancing this access?
- Access and “ownership” of land for agriculture may be found in a variety of formal and informal ways. These need to be distinguished from each other and presented as such. This may need a research intervention on its own, and it may be necessary to probe for this in an open-ended way, to capture the diversity of ways farmers gain access to land for productive purposes.
- Labour and returns: Labour is extensively used in urban food production and trade, but if we know the returns on labour, we can ascertain to what extent a farmer can feed more people than himself, and this would be the basis of food security through local production. Understanding labour and productivity would enable us to cross reference with production techniques and other measures to gain an understanding of what production methods are best in an urban context.
- Productivity and returns on social media: it would be necessary to ascertain the extent to which investments in social media, from devices and data, stimulates the urban food enterprise.
- What do farmers do amongst themselves? Are they perpetuating an “individualism” or are they exploiting the powers of networks for economic advantage? We would have to analyse social media interaction to understand the extent to which farmers are able to form and maintain a durable Community of practice amongst themselves. This would be the basis of innovation in local areas, and this may be very important.

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BUSINESS AND ECONOMICS



Price Tariff Payment Models Used In Private Hospitals In South Africa To Provide Insights Into The National Health Insurance

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Keywords

Price tariffs, price tariff payment models, private hospitals, NHI

Abstract

Price tariff payment models are critical as private healthcare is unaffordable to most South Africans, and the introduction of the National Health Insurance (NHI) will require greater sharing of resources between private and public hospitals. This paper explores the various price tariff payment models used in private hospitals in South Africa to provide greater insights into the NHI proposals. Price tariff payment models charge price tariffs for patient treatment and reward providers for delivering value to patients. Most price tariff payment models reward the quantity of health care provided and are not linked to value based on patient outcomes. This paper reports the results of a qualitative investigation into the price tariff payment models used by two private hospitals for one procedure. A hypothetical case is used to illustrate the price tariff payment model highlighted by the Competition Commission as being key to driving innovation and competition in the South African private health care system. These price tariff payment models were compared to the preferred price tariff payment models put forward for purchasing in-hospital services for the NHI Fund, which all private hospitals will have to adopt if they want the NHI Fund to purchase in-hospital services from them. The results show that the DRG price tariff payment method preferred by the NHI is not a value-based price tariff payment model because it typically reimburses only for inpatient episodes or procedures and does not incorporate the full range of physician, outpatient, rehabilitation, education, and other services needed to achieve good outcomes over a complete care cycle.

1. Introduction

Worldwide, policymakers are attempting to lower the cost of providing quality health care. However, the opposite is taking place with the cost of health care increasing across the globe owing to numerous factors, including aging populations and medical technology advancements (Porter, Kaplan & Frigo 2017:25). There is a lack of understanding of how much it costs to deliver patient care. Cokins and Scanlon (2017:1) explain that it is not enough only to measure the cost to deliver health care, it must be coupled with the price tariffs charged to deliver health care. The setting of price tariffs that are based on appropriate costing structures of healthcare service providers is thus a critical component in managing a healthcare business. One of the most critical factors that influence the attributes of price tariffs is the price tariff payment model that is used to charge the price tariff to the patient. The price tariff payment model influences the unit of services that is acquired, the period for which the services are purchased, whether the price tariff payments are prospective or retrospective, and whether payments are fixed or variable depending on specific outcomes being achieved (Casto & Forrestal 2015:8). Price tariff payment models are also commonly referred to as provider payment models or reimbursement models, but the term price tariff payment model will be used in this article.

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Porter and Kaplan (2016:90) suggest that the price tariff payment models used to charge price tariffs for patient treatment need to reward providers for delivering value to patients, that is, for achieving health outcomes at a lower cost. Health care outcome measures indicate the impact of the health care services or interventions on the health status of patient or patient groups. Using health outcomes of care reveals the effect of care or intervention on the patient's life by using specific measures before and after treatment (Sedley, 2013:1-2). These could be assessed self-reported, observed, or clinically (physical examination, laboratory testing, imaging). Certain health outcomes involve complex assessments to determine if they are present or absent (Oleske & Islam, 2019:69-70). Most of the price tariff payment models reward the quantity of health care provided and not the reward value provided measured based on patient outcomes.

Price tariffs and the price tariff payment models that are used to charge them to patients have been subjected to much debate in South Africa. The Competition Commission inquiry included a reference to the impact of the price tariff payment model on price tariffs in the private health care system in South Africa (Competition Commission 2019:94). The South African government identified price tariffs models that will be used by the proposed National Health Insurance (NHI) Fund, the sole purchaser of health care services under the NHI, to procure health care services for the South African population from both private and public sectors providers to be central to ensure effective cost containment and the future sustainability of the proposed National Health Insurance (NHI) (Department of Health, 2015:63, 68, 71–72).

The primary objective of this article is to explore various price tariff payment models used in private hospitals in South Africa and the compatibility with the NHI proposal in the context of one specific procedure. This is achieved by comparing the price tariff payment models and price tariff data of two different hospitals for a laparoscopic appendectomy (a minimally invasive surgery to remove the appendix through several small incisions).

2. Problem statement

Private hospitals and/or hospital groups use various price tariff payment models to charge price tariffs to patients for medical procedures performed. The use of a particular price tariff payment for a given procedure is based on the agreement reached between the private hospital and/or hospital group and the different medical aid schemes (Noble 2018). This might cause one procedure to have various price tariff payment models being used to charge the price tariff. However, the NHI Fund has identified only one price tariff payment model which is the diagnosis-related groups price tariff payment model (DRG price tariff payment model) as the preferred model to purchase hospital inpatient services (Department of Health, 2015:63, 68, 71–72). Private hospitals and/or groups face a problem: they will be required to adopt the DRG price tariff payment model if they wish to contract with the proposed NHI to provide hospital inpatient care (Department of Health, 2015:63, 68, 71–72).

3. Research objectives

The primary objective of this research is to explore various price tariff payment models used in private hospitals in South Africa and the compatibility with the NHI proposal in the context of one specific procedure. These price tariff payment models will be evaluated to determine their usability when compared to the preferred price tariff payment model put forward for purchasing in-hospital services by the NHI Fund.

To assist in achieving the primary objective, the secondary objectives of this study were:

- i. To perform a literature review of price tariffs payment models being used in South Africa.
- ii. To investigate the characteristics of the price tariffs of the various price tariff models and apply them to a laparoscopic appendectomy procedure at two different private hospitals.
- iii. Compare the price tariff payment models used by private hospitals to provide insights into the preferred price model put forward for purchasing in-hospital services for the NHI Fund.

4. Literature review

Costing in health care organisations is focused on determining the unit cost of a particular service or episode of care (Hilsenrath, Eakin & Fischer 2015:2). Kaplan and Haas (2014:122) argue that the unit cost should be calculated over the cycle of treatment of a patient's primary medical condition and not only for the health care services provided or the episode of care. To better understand what it costs to treat a patient, the patient's condition should be the cost object and not department units, procedures, or services because the patient's condition is then the driver of the treatment provided and the direct and indirect costs incurred to treat the patient. For this article, costing is defined as determining the unit cost per patient's primary condition throughout the cycle of treatment by assigning both the direct and indirect costs that have been incurred in the treatment of the patient's primary medical condition.

According to Simon (2015: Loc 686), the definition of price tariffs has many aliases, for example, sales price, pricing, premiums, tuition fees, and tariffs. The definition of price tariffs is mostly dependent on the particular industry. Sharp, Bergh and Li (2013:45) define an industry as a group of organisations that offers similar products or services. The medical industries of South Africa and the United Kingdom refer to tariffs (South African Medical Association 2014:6) probably because the treatment provided to a patient is made up of various services with each service having its own tariff. Consequently, it was decided to use the concept of price tariffs in this article to refer to the amount that private hospitals charge patients for the treatment they receive for their primary medical condition.

The term alternative price tariff payment models refer to all price tariff payment models other than the fee-for-service price tariff payment model (Kaplan 2016:18). Noble (2018) explains the alternative price tariff payment models that are used in private hospitals and their impact on the cost of health care as:

- a) The per diem price tariff payment model charges tariffs using CPT 4 codes (CPT stands for Common Procedure Terminology) and specifies the procedure that was performed. It incentivises the hospital groups to manage the level of care, medicine provided, and consumables used in one day but provides no incentives for managing the length of stay.
- b) The fixed fee price tariff payment model also uses CPT 4 codes and incentivises hospitals to manage the length of stay, level of care, medicine provided, and consumables used.
- c) The global fee price tariff payment model is based on the CPT 4 codes. This model discourages unnecessary care and encourages care coordination between health care providers across the continuum of care. It incentivises the hospital, surgeons, and other health care providers to provide efficient treatment for the patient by managing the level of care, length of stay, medicine provided, consumables, and surgical items used, and includes pathology and radiology to ensure limited wastage of health care resources.
- d) The DRG price tariff payment method analyses resource usage for the particular primary medical condition.

The different alternative price tariff payment models have different characteristics, which will also affect the price tariff amounts for each of the various models. The price tariff payment models will be discussed in more in detail in the section below.

4.1 Price tariff payment models

The World Bank (2009:3) contends that price tariff payment models can act as an accountability mechanism between health care providers and purchasers. The models can enable health care service providers to achieve health policy objectives such as improving patient access to health services, promoting effective and efficient use of resources, and controlling costs. The importance of price tariff payment models was also highlighted by Berenson, Upadhyay, Delbanco and Murray (2016a:1) who argue that health care reforms in terms of patient treatment cannot happen in isolation and need to be integrated with the price tariff payment models used in the health care system. Berenson *et al.* (2016a) further state that each price tariff payment model has both strengths and weaknesses and, depending on its operational design features, affects the behaviour of health care providers differently.

The terms health care providers and health care purchasers need to be clarified to provide context to this section. Health care providers are the service providers that treat patients for their primary medical condition and health care purchasers are organisations, public or private, that acquire health services on behalf of a defined population. Health care purchasers are often health insurance organisations but they may also be employers, cooperatives, and other institutions that pool funds and purchase health care on behalf of their beneficiaries (Competition Commission 2019:17,244).

Berenson *et al.* (2016a:7) identified several price tariff payment models of which the following are the most widely used in health care systems (Casto & Forrestal 2015:9–14): (i) diagnosis-related group system, (ii) fee-for-service, (iii) per diem and (iv) bundled purchases. These four models can be categorised according to different criteria, which are discussed in the next section.

4.1.1 Diagnosis-related groups (DRG) price tariff payment model

Diagnosis-related groups' price tariff payment models (DRGs) classify patients' diagnoses according to variables, namely, principal and secondary diagnoses, patient age and sex, the presence of comorbidities and complications, and the treatment given (Mathauer & Wittenbecher 2013:746). Patients who are classified in the same group have similar diagnoses, treatments, consumption of resources and length of stay. These groups are assigned a weight that reflects the cost of treating patients in that category relative to other categories (Berenson *et al.* 2016b:18). This payment model tends to be a prospective payment method because payment is based on the diagnosis and not the treatment provided (Casto & Forrestal 2015:13). The health care provider receives a fixed amount for the specific diagnosis-related group. This makes it essential for the health care provider to use a costing model that can determine the unit cost for the specific diagnosis-related group, as the cost of the resource used is the starting point for the health care provider to negotiate diagnosis-related group rates with purchasers (Quentin, Geissler, Scheller-Kreinsen & Busse 2011:27).

The standardisation of classification, resource utilisation and clinical characteristics brought about by diagnosis-related groups supports transparency and describes hospital activity in standardised units that enable analyses that would otherwise not be possible (Geissler, Quentin, Scheller-Kreinsen & Busse 2011:11–12). However, to increase revenue per patient, coding practices of diagnoses and procedures or services could be changed, or additional treatment could be provided, leading to the reclassification of patients into higher-paying diagnosis-related groups, which is a limitation of this model (Melberg, Beck Olsen & Pedersen 2016:992).

4.1.2 Fee-for-service price tariff payment model

As suggested by the name, fee-for-service price tariff payment model, health care service providers are paid for each service provided. Payments under this model are traditionally retrospective and variable because health care service providers are paid per service provided (Casto & Forrestal 2015:9–10). This model allows either the providers or the purchasers to set price tariffs for services (Ellis, Martins & Miller 2017:113).

The fee-for-service price tariff payment model rewards the number of services provided and not the quality or efficiency of treatment (Porter & Kaplan 2016:88–89). This model also contributes to the fragmentation of health care delivery by paying health care providers based on service volumes rather than an episode of patient care, which creates little incentive to coordinate with other health care providers to deliver efficient health care to the patient (Bestmed 2014:68). The model's strength is its ability to accommodate elements of other price tariff payment models (Ginsburg 2012:1977–1978) and the model also incentivises the fullest possible care for patients (Barr 2017:6).

The price tariffs that are charged using this model are based on effort, which is denoted as relative value scales that measure both inputs by time and intensity of effort. The intensity of effort includes the cost of providing the service efficiently. The use of relative value scales is problematic because they need to be updated with new technologies. This is because they are affected by new standard treatment protocols, and the data quality needs to be good to enable an accurate update to the relative value scales (Ginsburg 2012:1979–1980).

4.1.3 Per diem price tariff payment model

With a per diem price tariff payment model, a fixed daily price tariff is charged for specific services or outcomes, regardless of the actual costs incurred for caring for a particular patient. The price tariff is usually a flat all-inclusive rate that may vary by the level of care (Noble 2018). Often hospitals will exclude days in an intensive care unit or another specialised unit where it is difficult to determine the cost of treating the patient unless there is a sufficient volume of regular medical-surgical cases to make the reimbursable costs predictable. Similarly, multiple per diems are often negotiated based on service type (medical-surgical, obstetrics, intensive care, heart surgery) (Berenson *et al.* 2016a:19).

This model's strength is that it transfers the risk relating to the treatment costs to the health care provider, as the per diem rate is a fixed rate for a particular level of care that is expressed in hospital days (Life Healthcare Group 2014:30). However, the per diem model also encourages health care providers to increase the number of inpatient hospital admissions or to extend the length of stay, or both to increase revenue for the health care provider, which is a weakness in this model (Casto & Forrestal 2015:13).

4.1.4 Bundled purchases price tariff payment model

With a bundled purchases price tariff payment model, a patient pays a single price tariff for all the care required for their primary medical condition across the entire care cycle or overtime for chronic conditions or primary care. The scope of care is defined from the patient's perspective and also extends to the management of common comorbidities and related complications (Porter & Kaplan 2016:90–92).

The bundled purchases price tariff payment model should include care for common complications and comorbidities but exclude treatments unrelated to the medical condition. The payment amount should be contingent upon achieving certain patient outcomes and provide a positive margin above the actual costs incurred by efficient and effective providers. The price tariff should also be adjusted for risk, for example, the patients' age and health status that may affect the complexity, outcomes, and cost of treating a condition and their social and living circumstances. These risk factors should be reflected in the bundled payment and in expectations for outcomes to reward providers for taking on hard cases. The bundle should be targeted at a homogenous patient population and risk-stratified across a broader covered patient population. The bundled purchases price tariff payment model includes stop-loss provisions funded by the payer to protect against catastrophic cases. The price tariffs should also be stable over a specified period to allow providers to capture benefits from the outcome and process improvements (Porter & Kaplan 2016:92). Well-designed bundled payments encourage teamwork and high-value care. The price tariff is tied to overall care for a patient with a medical condition, aligning payment with what the team can control (Porter & Lee 2013:60).

In South Africa, there are two forms of the bundled purchases price tariff payment model, namely, the global fee price tariff payment model and the fixed fee price tariff payment model. The global fee price tariff payment model is similar to the bundled price tariff payment. Both the fixed fee and global fee price tariff models are included in the bundled price tariff payment model category as their price tariffs encompass a bundle of health care services that relate to an episode of care (Scott 2018). Although the price tariffs of the per diem price tariff payment model also encompass a bundle of health care services, they do not relate to an episode of care but rather to a hospital day.

The operational workings of the global fee price tariff payment model and the fixed fee price tariff payment model used in South Africa are described below:

- a) The global fee price tariff payment model charges a single price tariff for a health care episode, that is, a procedure that includes the costs of all the service providers (surgeon, anaesthetist, pathologist, physiotherapist and hospital). This tariff is then paid to one of the primary providers (for example, the hospital or the treating medical practitioner), who, in turn, pays the other service providers (Profmed 2014:26). The price tariff structure of this model discourages the provision of unnecessary care while encouraging the coordination of care

among health care providers across the continuum of care. This has the potential to improve the quality and decrease the cost of care provided by reducing inefficiency and the redundancy of care provided in silos (DLA Cliffe Dekker Hofmeyr 2014:153). It is challenging to adopt this model in South Africa because the Health Professions Council of South Africa (HPCSA) prohibits hospitals from employing specialists and, therefore, specialists have to perform their own billing (DLA Cliffe Dekker Hofmeyr 2014:20). This means that their price tariffs cannot form part of the global fee price tariff payment model's single tariff.

- b) The fixed fee price tariff payment model uses a single price tariff for all the hospital costs for a specific procedure but the amount excludes the specialist's costs for the given procedure (Scott 2018). This payment model transfers the risk associated with all hospital-related costs to the health care service provider for a specific procedure (Competition Commission 2018:50). The fixed fee price tariff, irrespective of the actual resource costs of treating the patient, brings about savings to the medical aid scheme. However, personal characteristics affect a patient's medical condition and resource usage (Balakrishnan, Pugely & Shah 2017:2). The model transfers the risk associated with hospital costs but excludes specialist costs, which is problematic as the specialists determine the type and intensity of treatment that the patient receives. This creates fragmentation, and the specialists have no incentive to work with the hospital to reduce costs and improve efficiencies in patient care.

4.2 Price tariff payment models used internationally

To provide further context to the use of price tariff payment models, the price tariff payment models used in America, India, Nigeria and Zimbabwe are illustrated in Table 1. To adequately explain the use of price tariff payment models in these countries, one must differentiate between private medical aid schemes and National Health Insurance (NHI) in universal health care. As the NHI also uses a price tariff payment model to purchase health care services from either private or public health care service providers, it often plays a leading role in deciding which price tariff payment model to use.

These four countries are selected to describe the use of price tariff payment models in different contexts. America illustrates the price tariff payment models used in a developed country. India illustrates the price tariff payment models used in a country that has an NHI that covers a significant number of people, while also having one of the most innovative private health care providers in the world (KPMG 2017:10). Nigeria and Zimbabwe allow for a comparison between the price tariff payment models used in these African countries and in South Africa. Table 1 summarises the various price tariff payment models used in four countries.

Table 1: The various price tariff payment models internationally

Country	Price Tariff Payment Model
United States	The United States does not have universal NHI. Medicare and Medicaid are the two largest public health insurance programmes that serve the elderly, disabled and the lower income population. The <u>diagnosis-related group (DRG) price tariff payment model</u> is the most widely-used for purchasing health care services from hospitals (Benson <i>et al.</i> 2016a:19).
India	The private health care industry uses the <u>fee-for-service price tariff payment model</u> . However, the government is considering more innovative price tariff payment models (Bali & Ramesh 2015:312–313, 315). About 407 million people are covered by NHI schemes and around 53–58 million by private medical aid schemes. Most of India's population (± 63%) has little or no coverage. The Indian government has focused primarily on getting health coverage for the very poor instead of the entire population (KPMG, 2017:10).

Country	Price Tariff Payment Model
Nigeria	In the public health care system, the staff receives a performance bonus that is derived from the <u>fee-for-service price tariff payment model</u> (Beith, Wright & Ergo 2017:17–18). Most of the population does not have access to private health care and relies on the public health care system. Nigeria does have a NHI that has been in existence for more than 10 years, but it only covers 6 million members, comprising mainly of the private sector and federal government workers (KPMG, 2017:12). The NHI scheme purchases health care services mostly using the <u>capitation price tariff payment model</u> , whereas a <u>fee-for-service price tariff payment model</u> is used for patient referrals to secondary or tertiary levels of hospital care (Mohammed, Souares, Bermejo, Sauerborn & Dong 2014:10).
Zimbabwe	Zimbabwe does not have an NHI. Only 10% of Zimbabwe’s population of 13 million has private medical aid, which limits access to private health care for the urban and rural poor unless they pay via out-of-pocket expenses (Mugwagwa, Chinyadza & Banda, 2017:7). The remaining 90% of the population has to rely on government-provided health care facilities. Zimbabwe’s health care system is divided into public and private systems. The <u>fee-for-service price tariff payment model</u> is mostly used in the private health care industry (Dube 2014:45–46).

Source: Own compilation

Table 1 shows India and Nigeria have a NHI scheme. The NHI purchases services using the fee-for-service price tariff payment model in India and the capitation price tariff payment model in Nigeria.

4.3 Price tariff payment models used in South Africa and the proposed NHI

In South Africa, there are two health care systems: public health care and private health care systems. The public health care system is staffed by approximately 30% of the country’s physicians who provide health care to approximately 59% of the national population, of which 84% are uninsured. The remaining 70% of physicians services approximately 41% of the national population. The 41% of the population is broken down into 16% of the population that is insured and 25% that is uninsured and pay out of pocket (Younger, 2016:1131). This shows the need for more equitable financing, health care provision, and distribution of physicians between the public and private health care systems.

Analysts regard South Africa as having one of the world’s most inequitable health systems, where of a high quality, but expensive health care is slanted towards the private system. Historically, more than 80% of South Africans could not afford private medical insurance and relied on poor quality public hospitals and facilities (Baleta, 2012:1188). According to the World Economic Forum (2014:32), the delay in implementing the proposed National Health Insurance (NHI) to address the inequality in South Africa’s health care expenditure could lead to social unrest in the not too distant future.

In order to bridge the gap between the private and public health care systems, the South African Government investigated the possibility of introducing a National Health Insurance (NHI). The proposed implementation of the NHI was released in the form of a Green Paper on 11 August 2011. It aims to improve access to quality health services, pool the risks into a single health fund, procure services on behalf of the entire population to efficiently mobilise and control financial resources, and strengthen the public health system (Matsoso & Fryatt, 2013:156).

The proposed NHI financing model under review predicts that resource requirements will increase from R125 billion in 2012 to R214 billion in 2020 to R255 billion in 2025 if the proposed NHI is implemented gradually over a 14-year period (Department of Health, 2011:37). The proposed NHI will pool funds from three sources: a surcharge on taxable income, payroll taxes for employees and

employers and an increase in value-added tax. Taxes will be mandatory but the option to belong to a private medical aid remains (Baleta, 2012:1188).

In order to ensure effective cost containment and the future sustainability of the proposed NHI, the government has identified the price tariff payment models as the key to achieving these two objectives. To procure hospital health care services, the government will purchase from both private and public hospitals and has identified the Diagnosis-Related Group (DRG) price tariff payment model as the preferred model to purchase hospital inpatient services. Both private and public hospitals will also need to adopt the DRG price tariff payment model if they wish to contract with the proposed NHI for the provision of inpatient care (Department of Health, 2015:63, 68, 71–72).

In South Africa the fee-for-service (FFS) price tariff payment model, is currently, the predominant payment mechanism in the private health care system (Department of Health 2015:63, 68, 71–72), however, the Competition Commission Inquiry recommended a transition from a fee-for-service price tariff model to alternative price tariff payment models. They further hope to encourage the adoption of alternative price tariff payment models that promote real risk sharing, provide better value for money and also reward physicians and facilities for value and quality (Competition Commission, 2018:474).

The global fee price tariff model is the model that the Competition Commission (2019:172) identified as being central to drive innovation and stimulate competition in order to expand access to healthcare services in the private healthcare industry. The NHI Fund has identified only one price tariff payment model which is the diagnosis-related groups price tariff payment model (DRG price tariff payment model) as the preferred model to purchase hospital inpatient services (Department of Health, 2015:63, 68, 71–72). The problem that private hospitals and/or groups face is that they will be required to adopt the DRG price tariff payment model if they wish to contract with the proposed NHI for the provision of hospital inpatient care (Department of Health, 2015:63, 68, 71–72).

5. Research methodology and design

To explore the price tariff payment models used in private hospitals in South Africa, the price tariff payment model and the price tariff data for laparoscopic appendectomy from **Hospital A** and **Hospital B** were calculated to illustrate the impact that different price tariff payment models have on the characteristics of price tariff, using primary research. In addition, a hypothetical calculation for this procedure was also performed using the global fee price tariff model which is the model that the Competition Commission (2019:172) identified as being central to drive innovation and stimulate competition in order to expand access to healthcare services in the private healthcare industry. The various price tariff payment model used in the laparoscopic appendectomy illustration were evaluated to determine their usability when compared to the preferred price tariff payment model put forward for purchasing in-hospital services by the NHI Fund.

The price tariff payment model and price tariffs were requested from **Hospital A**, while the information for **Hospital B** was requested from a medical aid scheme that had an agreement with the hospital.

5.1 Data for hypothetical case illustrating the global fee price tariff payment model

For the hypothetical case, the basis of the calculation was a detailed process description of an actual laparoscopic appendectomy that was performed and included resource usage in terms of time, nursing levels, theatre time used, ward usage, medicine, and gas usage. After that, approximate costs for the various resources were sourced and resource rates were calculated for each resource based on practical capacity and. Finally, the cost of the resources was determined by multiplying the resource rate by the resource usage. Once the unit cost was calculated, the global fee was based on a combined single price tariff that included a 30% profit mark-up on the hospital unit cost. The following formulae were used to calculate the global fee price tariff of the hypothetical case:

- Resource Rate X Unit of Measure = Total Rand Value
- Total Rand Value + 30% Mark-up = Global Fee Price Tariff

6. Results

Table 2 shows the results and the elements of the different price tariff payment models for laparoscopic appendectomy. Table 2 further shows the price tariff payment model and the associated price tariffs for the two private hospitals, **Hospitals A** and **B**, and the hypothetical case. This illustrates the impact that the different price tariff payment models had on the characteristics of the price tariffs for the given procedure.

Table 2: Results of different price tariff payment models for a laparoscopic appendectomy

Category Breakdown	HOSPITAL A			HOSPITAL B	Hypothetical Case
	Diagnosis-related group (DRG) fixed fee price tariff payment model	Fee-for-service price tariff payment model	Per diem price tariff payment model	Fee-for-service price tariff payment model	Global fee price tariff payment model
Theatre time price tariff	R 30 427 per diagnostic group	R10 132 - basis theatre time that is based on per minute rate	R9965 basis per diem -15-minute blocks	R6203 basis theatre time that is based on per minute rate	R 40 436 Inclusive of Surgeon and Anaesthetist
Ward price tariff		R 2 170 - basis per day or half day thereof	R2 817 basis per diem – per day	R6412 basis per day or half day thereof	
Pharmacy price tariff		R 7 081-basis per item	R 0 – basis included in the per diem tariff	R6254 basis per item	
Equipment price tariff		R 3 249 per use	R0 - basis included in the per diem tariff	R3 165 per use	
Laparoscopic rate price tariff			R14 861 - basis per day Lap modifier		
Other price tariff			R2608 - basis other modifier	R43 per item	
TOTAL PRICE TARIFF for laparoscopic appendectomy		R 30 427	R22 632	R30 251	

Source: Researchers calculations

Table 2 shows that **Hospital A** and **Hospital B** used different price tariff payment models and charged different price tariffs for the same procedure because the different medical aid schemes negotiated both the price tariff payment model and the price tariffs with the individual hospital groups on an annual basis. Furthermore, Table 2 also shows that the different price tariff payment models impact the characteristics and the amount of the associated price tariffs. The highest price tariff for the procedure is the Global fee price tariff model and the lowest tariff is the Fee-for-service price tariff.

6.1 Discussion of results

Table 2 confirms that private hospitals can have more than one price tariff for the same procedure as is the case with **Hospital A** having a DRG fixed price tariff, fee-for-service, and a per diem price tariff model for this procedure compared to **Hospital B** that only used a fee-for-service price tariff payment model. **Hospital A's** combination of models included two alternative price tariff payment models (DRG and per diem) in addition to the fee-for-service price tariff payment model, compared to **Hospital B's** which used only a fee-for-service price tariff payment model.

Table 2 further shows that the use of the global fee price tariff model was R10 000 higher than the other price tariffs because it included the surgeon's and anaesthetist's price tariffs. This model further discouraged unnecessary care and encouraged coordination of care between health care providers across the continuum of care (DLA Cliffe Dekker Hofmeyr, 2014:153).

The dilemma with price tariff payment models is that they influence the characteristics of price tariffs and, consequently, the risk transfer between private hospitals and private medical aid schemes. Furthermore, the models affect the behaviours of health care providers and funders, which makes it essential to consider both the operational details and the strengths and weaknesses of price tariff payment models when comparing the different models (Competition Commission 2019:79).

Another key element of the price tariff payment models is the risk transfer between the funder and the service provider. Risk transfer assists to align the incentives of the two negotiating parties, facilitating positive outcomes for both parties. Under the fee-for-service price tariff payment shown in Table 2, the risk relating to the risk of cost increases remains with the funder as each additional treatment is billed to the funder. Whilst the per diem price tariff payment model combines a number of items and services of in-patient care into a fixed daily rate, with any costs or savings from claims being above or below the agreed rate accruing to the provider. Thus the risk of escalating costs is partially transferred away from the funder, but the funders are still at risk for any additional costs such as length of stay, the volume of admission, and procedure mix. DRG price tariff payment model covers the entirety of a patients' care cycle for a particular event and the funder is still liable for the costs associated with an increased volume of patients needing care (Competition Commission, 2018:50-51). The global price tariff payment model transfers the actual care risk to the providers they deliver and can influence directly (Porter & Kaplan, 2016:91).

Health care purchasing is moving from using a fee-for-service price tariff payment model to value-based price tariff payment models (Cokins & Scanlon, 2017:1). A value-based price tariff model bases price tariffs on health care providers achieving certain outcomes. However, the DRG price tariff payment model which is the preferred price tariff payment model that the South African government identified to purchase hospital services for the NHI Fund falls far short of being a value-based price tariff payment model because it typically reimburses only for inpatient episodes or procedures and does not incorporate the full range of physician, outpatient, rehabilitation, education and other services needed to achieve good outcomes over a complete care cycle. Nor does it foresee for more than one management protocol per admission. It favours treatment via a particular procedure or a specified type of care, rather than encouraging innovative treatment for multiple medical conditions (Porter & Kaplan, 2014:7). It is worrying that the proposed NHI has identified the DRG price tariff payment model as its preferred model to purchase inpatient health care services when there is a move towards value-based price tariff payment models. The proposed DRG price tariff payment model does not have the attributes to become a value-based price tariff payment model for the above reasons.

Of all of the price tariff payment models shown in Table 2 only the global fee price tariff payment model is a value-based price tariff payment models because this model promotes risk sharing as it involves a single payment for the entire episode of care and any unnecessary care and waste will be at the health care providers' risk. This model supports multidisciplinary practices as it provides a single price tariff that is charged for a health care episode, that is, a procedure that includes the costs of all the service providers (surgeon, anaesthetist, pathologist, physiotherapist and hospital) (Profmed,

2014:26), which discourages unnecessary care and encourages coordination of care between health care providers across the continuum of care. (DLA Cliffe Dekker Hofmeyr, 2014:153). Hospitals that are integrated in this fashion would be able to negotiate better prices when they purchase supplies in bulk. It also provides greater transparency in outcomes and price due to the published information. This model will support the measurement and reporting of outcomes versus costs (DLA Cliffe Dekker Hofmeyr, 2014:153) and in so doing enable patients to compare and choose between different health care providers for their given healthcare condition in terms of outcomes and price. This will increase competition based on value and providers that are effective and efficient will grow, earn attractive margins and expand regionally and even nationally. In contrast, the rest will see their margins decline. Those with poor outcomes will lose patients and bear the extra costs of dealing with avoidable complications, infections, readmissions, and repeat treatments (Porter & Kaplan, 2016:93–94, 98). Private hospitals should note that the use of the DRG price tariff is proposed by the NHI and should understand how this method could possibly influence their current practices.

7. Implications of the research

The research illustrates that each price tariff payment model has both strengths and weaknesses, and each model affects the behaviour of health care providers differently, depending on their operational design features. This is extremely important to note for both health care providers and funders when managing their risk as the operational design of features of the price tariff payment model impacts the associated price tariffs risk-sharing arrangement between the two parties which has a financial implication for both parties.

The price tariff payment model also has business implications, with the most important being that the associated price tariff must be based on an accurate unit cost that is reflective of the cost of resources used to provide both efficient and effective care and not based on set price tariffs. The price tariffs should provide a margin over a provider's full costs when using effective and efficient clinical and administrative processes throughout the care cycle to ensure the health care provider makes enough profit to cover their costs. Furthermore, implications includes whether the price tariff payment model either encourages or discourages waste reduction (James & Poulsen, 2016:104), the impact of price tariff payment models on patients and their physicians in making decisions that are in the patients' best interest (James & Poulsen, 2016:104–105), whether health care providers bear only the risks related to the actual care that they deliver and can influence directly (Porter & Kaplan, 2016:91) and lastly how does the price tariff model affect innovation (Porter & Kaplan, 2016:93).

8. Conclusion, limitations and future research

Price tariff payment models play a central role in health care reforms. Price tariff payment models can enable health care service providers to achieve their health policy objectives by improving access to health services for patients, promoting the effective and efficient use of resources, and improving cost control. Price tariff payment models also have an impact on the setting of price tariffs for health care services by influencing the units of health care services purchased (Waters & Hussey 2004:176), whether payments are prospective or retrospective and whether payments are fixed or variable (Casto & Forrestal 2015:8). Furthermore, it was found that the features of the different price tariff payment models are often combined in order to mix incentives for both health care providers and patients (Waters & Hussey 2004:176). Noble (2018) explained that no alternative price tariff payment model is optimal across all medical and surgical treatments of a patient's medical condition. Each condition requires different treatments, levels of care, and length of stay. For example, a fixed fee price tariff payment model needs to have predictable outcomes, standard treatments, and high volumes.

The introduction of value-based price tariff payment models is on the horizon in South Africa. In South Africa, both the fixed fee and global fee price tariff payment models are forms of the bundled purchases price tariff payment model. In the fixed fee price tariff payment model, all the hospital costs for certain procedures are included in one price tariff amount, but the specialist's costs for the given procedure are excluded because, under HPCSA rules, hospitals are not allowed to employ specialists. Consequently, specialists are required to perform their own billing (DLA Cliffe Dekker Hofmeyr 2014:20). In the case of a global fee price tariff payment model, one tariff is charged for the

procedure, which includes both the hospital costs and the specialist's costs. By definition, a global fee price tariff payment model should include all costs, but it does not in all cases (Noble 2018). The medical aid schemes are in favour of implementing this model, but the HPCSA has advised its members that they are not allowed to enter into these contracts.

Certain private hospitals have implemented a DRG price tariff payment model that is technically not a true DRG model. A true DRG price tariff payment model makes payment based on the patient's diagnosis and not the procedure that was performed (Scott 2018). It is estimated that up to 30% of the diagnosis coding is lost by how the South African ICD 10 coding is submitted to the medical aid schemes. The lost diagnosis coding often relates to comorbidities that the patient may have that would influence the price tariff rate in a proper DRG system.

Access to private health care is unaffordable to most South Africans, which led to an inquiry by the Competition Commission. The release of the completed Competition Commission's Inquiry Report into private health care and the proposed implementation of the National Health Insurance (NHI) highlights the importance of price tariff payment models. This research shows the need for further investigation into price tariff payment models by providing an overview of the most widely-used price tariff payment models and summarising the alternative price tariff payment models used by private hospitals. Although the amount for the fee-for-service price tariff payment model seems to be the lowest, it does not consider the treatment's appropriateness or quality as payment is based on activities and not health care outcomes. Furthermore, this model does not transfer the risks relating to the intensity, cost, and severity of care to the health care provider, and the medical aid scheme carries these risks.

The global fee price tariff payment model on the other hand has higher price tariffs as it includes surgeon's and anaesthetist's price tariffs. This model discourages the provision of unnecessary care while encouraging the coordination of care among health care providers across the continuum of care. This model also has the potential to improve the quality and decrease the cost of care provided by reducing inefficiency and the redundancy of care provided in silos owing to the risks associated with the cost, intensity, and severity of care being transferred to the various health care providers.

This research also evaluated the appropriateness of the NHI identifying the DRG price tariff payment model as its preferred model to purchase inpatient health care services. It was found that this model does not have the attributes to be considered a value-based price tariff payment model and thus not aligned with the worldwide and Competition Commission's recommendation that private hospitals adopt value-based price tariff, payment models. The Covid-19 pandemic has brought about opportunities for private hospitals as the government entered into contracts with private hospitals to admit public patients based on prescribed rates that were calculated on a cost-recovery basis (Kahn 2020). These arrangements pave the way for the greater sharing of resources between public and private health care systems towards the introduction of the NHI. The central role that price tariffs play in government contracting services from private hospitals and also in the functioning of the NHI emphasises the importance of research into price tariffs.

Although the calculations in this study include a single procedure, they can be extrapolated to all clinical situations and procedures. Future research should consider the unit costing models that could be used to determine the unit cost for providing treatment for a patient's primary medical condition in South Africa. Furthermore, the influence of unit costing models on price tariffs should be investigated. This will reassure health care providers and purchasers that the price tariff is based on the actual cost of resources used to treat the patient, which will provide more transparency to price tariffs. This will also assure health care providers that the price tariff is sufficient to cover their unit cost of treating patients for their medical conditions.

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To KBE or not to KBE?: Insights From a Macroeconomic Agent-Based Model

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Keywords

Agent-based modelling; Strategic decision making; Knowledge-based economy.

Abstract

This paper aims to investigate how strategic decision-making of firms affects an economy. Research in this area is necessary as without a coordinated strategy between industry, academia, and government in attempts to achieve a knowledge-based economy (KBE), economic growth may be constrained, while the levels of unemployment, inequality and poverty may deteriorate. An agent-based model is developed that simulates micro-level economic interactions between individuals and firms in different markets, resulting in emergent macro-level features. The simulations show that a shift towards a KBE has an insignificant impact on GDP over the long-term. However, the shift does produce a significant increase in unemployment. The higher unemployment is shown to be particularly high for the unskilled sectors of the population. It is therefore paramount that companies embark on skills development, training and educational initiatives when following a path of technological and knowledge innovation. There should be a transformation of the education system. The education system should be inclusive, focused on quality, adaptive, encourages creativity, aligned with the needs of industry, and stimulates research and development.

1. Introduction

Firms are an integral part of an economy, so that a collective strategic shift by firms in an economy could result in significant macroeconomic consequences. Such strategic shifts are often driven by external factors such as prevailing economic conditions, changes in government policy, increased competition, or technological change. Recent political uncertainty, struggling state-owned enterprises, and low business confidence has led to many South African companies reducing their investment in fixed capital, with a resulting downturn in economic growth and persistently low unemployment (Hungwe & Odhiambo, 2019; Lings, 2017). South Africa is also wanting to move towards a knowledge-based economy (KBE), which will result in considerable change for many existing companies and will require new innovative companies to be created (National Planning Commission, 2011; Vadra, 2017). It is important to consider the economic consequences of such a paradigm shift.

An economy is a highly complex system, comprised of many agents that are constantly changing and interacting with each other in a myriad of ways. Constructing and analysing models are an attempt to understand complex real-world phenomena. This complexity often requires simplifying assumptions or considering only certain aspects of the system (Giordano, et al., 2014). Microeconomics considers the properties and behaviour of each of the individual economic agents (Besanko & Braeutigam, 2013), while macroeconomics attempts to understand the aggregated behaviour of an economy as a whole. Various economic modelling techniques can be used to understand, describe, or predict the behaviour of each of these aspects. One modelling technique that has gained some traction in recent years is agent-based modelling (ABM) (Siegfried, 2014; Gatti, et al., 2011). The appeal of ABM in economic modelling is that by implementing the micro-level properties and behaviour for many agents, macro-level phenomena should emerge (Dawid & Gatti, 2018). In principle, it provides a tool that can tangibly connect the realms of microeconomic and macroeconomic theory.

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2. Problem Investigated

An agent-based macroeconomic simulation model was developed that can be used to explore the macroeconomic consequences of a collective strategic shift by firms. As more firms in the economy make strategic choices to embrace technological sophistication, nurture innovation and invest in knowledge, the simulation should provide a means to predict any significant long-term changes in macroeconomic measures.

3. Research Objectives

The primary objective of the project is to implement an agent-based simulation that can be used to determine the macro-economic impact of firms strategically adopting higher levels of technological sophistication. It should demonstrate the consequences of micro-level strategic decisions on macroeconomic indicators. This would facilitate a quantitative analysis of the short-, medium-, and long-term impact of macroeconomic policy decisions. The implementation incorporates both quantitative and qualitative techniques to model the behaviour of individuals and firms in an economy, placing it within a positivist research paradigm (Guo & Sheffield, 2006; De Vos, et al., 2011).

Two simulation scenarios are considered: one scenario (referred to as the *baseline scenario*) that is used as a reference or benchmark, and a second scenario (referred to as the *explored scenario*) in which firms in the economy have made a shift towards higher investment in knowledge and higher levels of technological capabilities. Several Monte Carlo simulations (Rubinstein & Kroese, 2016) will be conducted with a set of base parameters for each of the scenarios, establishing baseline trends in several macroeconomic and other variables. Stochastic fluctuations from each Monte Carlo run are then averaged out, giving the underlying output variables from the model.

4. Literature Review

This section provides an overview of strategic planning and the role of technology within firms. Section 4.1 provides an overview of strategic planning within organisations. An important contemporary perspective of strategic planning is encompassed by the resource-based view (RBV), discussed in Section 4.2. The agent-based model developed in later chapters will require a mathematical model of a firm's production that is outlined in Section 5.3. Section 5.4 discusses the importance of technology and knowledge, and in particular the 4th industrial revolution and the knowledge-based economy (KBE). Section 5.5 provides some brief comments about the relevance to South Africa. Finally, Section 5.6 provides a detailed discussion of the agent-based modelling.

4.1. A Perspective on Strategic Planning

Organisations need to constantly evaluate where they are, where they want to be and how to get there. The essence of strategic planning is to provide a path between the current status and a desired future status (Butuner, 2015). There are three main questions that organisations need to consider, leading to various strategic planning phases (Louw & Venter, 2013). The "*where are we?*" question is addressed in the strategic analysis phase. The "*where do we want to be?*" question addressed is in the strategic development phase. The "*how do we get there?*" question is answered in the strategy implementation phase.

- (a) **Strategic analysis:** A careful and critical analysis of the business and its operating environment needs to be undertaken. Typically, an organisation would need to address many questions such as: *What are the current problems? What are we doing well? What are we doing badly? What is our market? What is happening in our market? What can be done about it? What are our strengths and weaknesses? What opportunities do we have? What threats or risks do we face?* Many strategic analysis tools can be used in this process (Fleisher & Bensoussan, 2007), including: SWOT analysis, the PESTEL framework, etc.
- (b) **Strategy development:** With an understanding of the current situation, an organisation can then begin to develop its strategic intent, which essentially aims to answer the question: *Where do we want to be?* As opposed to operational or functional plans that are short-term, strategic plans are usually long-term in nature, and so the strategic intent should describe aspirations for a desired, distant future (Butuner, 2015). The importance of strategic intent is

illustrated by the quote by Lewis Carroll, “*if you don’t know where you are going, any road will get you there.*”

Strategic intent is usually encapsulated in an organisation’s vision, mission, and goals (Rothaermel, 2016). A ‘vision’ articulates an organization’s future aspirations, providing an answer to the question: *What do we want to become?* (David, 2014). Collins & Porras (2011) suggested that a vision should consist of a vivid description of the future and be a “*big hairy audacious goal*” (BHAG). A BHAG is a clear and compelling future objective that an organization can strive for. The ‘mission’ encapsulates what an organisation actually does, defining the way in which the vision can be achieved, answering the question: *What is our business?* (David, 2014) . It establishes the goods and services the organisation plans to provide, and the markets in which it plans to operate. The goals are broad targets or milestones that need to be achieved in order to accomplish the mission and vision. Underpinning the future intent would be the aspired culture within the organisation and the values establishing how it would operate.

- (c) **Strategy implementation:** With a clear understanding of where they are and where they want to go, it becomes necessary to formulate a plan to achieve the strategic intent. This would entail developing short-term operational plans, possibly restructuring the organisation, identifying the leadership requirements, developing processes and systems, effective communication, formulating a change management plan, analysing possible future scenarios, and implementing techniques for monitoring and control (Louw & Venter, 2013). There are several tools that can assist in this process. Organisational analysis and design can be performed using the McKinsey 7S framework (Ravanfar, 2015). Business processes can be formulated using business process re-engineering (Hammer & Stanton, 1995). Tools such as the balanced scorecard can be used to develop approaches to measurement and control (Atkinson, 2006).

In practice formulating a strategic plan should be an iterative process and organisations typically iterate between each of the phases outlined above (Steiner, 2010). Within the model developed here, the strategic intent of firms would shift towards adopting greater levels of technologically sophistication and making more effective use of knowledge within the organization. The implementation of such a shift would require an appropriate allocation of resources.

4.2. Resource Based Theory

The ability of an organisation to effectively identify, understand, and exploit any potential sources of competitive advantage are important goals of strategic management (Barney & Clark, 2007) . A competitive advantage can be expressed in terms of a firm’s ability to implement a value-creating strategy than cannot be easily adopted by competitors (both current and future). A *sustained competitive advantage* is a competitive advantage whose benefits cannot be easily duplicated by competitors in the long-term. Strategy can be viewed in the context of resource-based theory (RBT) as “*the match an organization makes between its internal resources and skills and the opportunities and risks created by its external environment*” (Grant, 1991) . The relationship between resources, capabilities, competitive advantage and strategy in the context of strategic analysis in the resource-based view is illustrated in Figure 1. The diagram illustrates the closed-loop link between strategy and resource allocation. This idea will be instrumental in the implementation of strategic decision-making used in the current model.

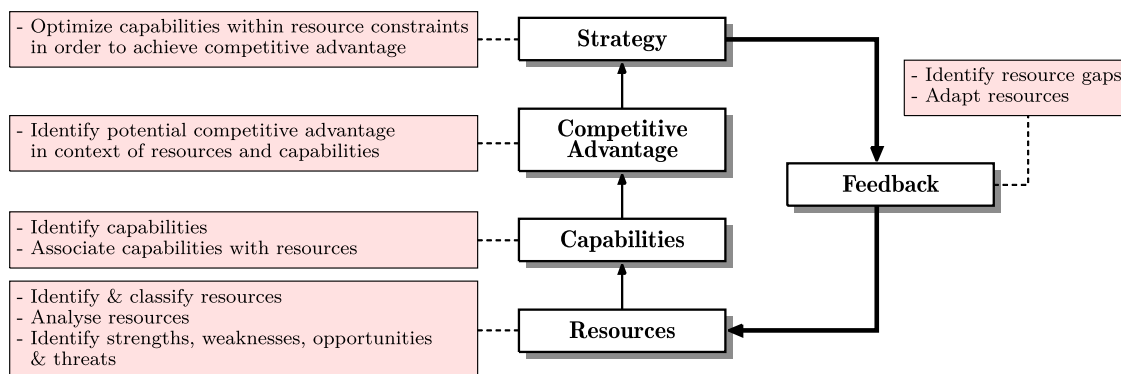


Figure 1: A resource-based framework for strategic analysis. (Adapted from Grant (1991))

Barney (1991) proposed a resource-based model incorporating four factors that are required to achieve a sustained competitive advantage: the resources must be valuable (*V*), rare (*R*), imperfectly imitable (*I*), and non-substitutable (*N*). These characteristics are often referred to as the ‘*VRIN*’ framework (Foss, 2011). Valuable resources can lead to a sustained competitive advantage since they enable a firm to implement strategies that improve efficiencies and effectiveness. If the resources are homogeneously available to many organisations, then each organisation can utilise the resources in a similar manner, thereby ensuring that no one organisation has a competitive advantage (even though the resource may be valuable). When the valuable resources available to an organisation are rare, then those resources have the potential to establish a sustained competitive advantage. Barney (1991) goes on to argue that valuable, rare resources can only be a source of sustained competitive advantage if they cannot be easily obtained by other firms, i.e. are imperfectly imitable (Barney & Clark, 2007). The final requirement for a resource to be able to lead to a sustained competitive advantage is that it is not strategically equivalent to another resource. If a resource can easily be substituted by another resource, which may not be valuable or rare, to implement a particular strategic plan, then that resource is not a source of competitive advantage.

It is more widely recognised in the economics literature that performance is strongly influenced by the path taken by a firm, i.e., ‘*history matters*’ (Liebowitz & Margolis, 1999; David, 2005; Martin & Sunley, 2012; Lockett & Thompson, 2001). Within the RBV, the resources to a firm (its ‘*opportunity set*’) are unique to the particular firm and are acquired or developed over time (Lockett & Thompson, 2001; Lockett, et al., 2009). Several path-dependent aspects of firm behaviour are strategically relevant for the firm (Lockett & Thompson, 2001): (a) various patterns of diversification and market entry; (b) corporate refocusing and market exit; (c) the ability of firms to innovate and exploit their dynamic capability; (d) the relationship between diversification and performance; and (e) the evolution of an industry with rapid technological change. Of relevance to this project is the evolutionary role of knowledge, innovation and dynamic capabilities.

Motivated by the RBV of the firm, Zott (2003) proposes a model in which a firm is characterised by its resource configuration at any point in time that is comprised of three variables: product quantity, product innovation rate that encapsulates the resources allocated to product differentiation, and process innovation rate that incorporates the resources that a firm allocates to achieve innovation. The resource configuration is reconfigured in four stages: variation (through imitation/experimentation), selection, retention and competition. Dynamic capability refers to a “*firm’s ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments*” (Zott, 2003). The dynamic capability attributes that characterise the evolutionary process are the timing of the change, the cost of the change and how the firm learns from changes. The essence of the current project is to determine the macroeconomic impact of widespread changes in the resource configuration of firms in an economy.

4.3. Modelling Firms

Firms play a vital role in an economy by transforming available productive resources into final goods and services. The manner in which they accomplish this is often highly complex (Walker, 2016). The productive resources (land, labour, capital equipment, natural resources, raw materials, water, electricity, etc.) can be characterised as inputs or *factors of production* that firms use in the production or transformation process, while the outputs are the various goods and services that the firm produces (Besanko & Braeutigam, 2013).

The mathematical relationship between the inputs and outputs of a firm are encoded in a *production function* (Heathfield & Wibe, 2016). It allows one to simplify the operational details within a firm and focus purely on the most significant factors of production. At an abstract level, the production function encapsulates a firm's production process, and is often expressed in terms of a mathematical model that describes the transformation process of a firm. The production function can then be used to model the output behaviour for the firm, without going into details on how the production is physically accomplished. One needs to clearly define the inputs and outputs of the system. It is assumed that each factor of production may be aggregated and quantified in some way (Heathfield & Wibe 2016). For example, a firm may have a wide variety of equipment used in its manufacturing process but are all 'lumped together' as a quantifiable measure of equipment. This is an enormous simplification but is often a necessary step in mathematical modelling (Giordano, et al., 2014). A widely used production function is the Cobb-Douglas production function,

$$Q = K^\alpha(AL)^{1-\alpha}$$

where K is the capital factor of production, L is labour, A is a labour productivity parameter and α is the output elasticity of capital, while $1 - \alpha$ represents the output elasticity of labour (Sørensen & Whitta-Jacobsen, 2010; Romer, 2011).

4.4. The Role of Technology and Knowledge

Technology plays an important role in many contemporary economic growth models (Romer, 1990; Sharipov, 2015). Schumpeterian growth theory recognizes the importance of innovation in replacing old technologies through creative destruction (Aghion, et al., 2014; Aghion, et al., 2015). In the Schumpeterian framework, improvement in production quality and efficiency as a result of process innovations is the 'engine of economic growth' (Acemoglu, 2009). The Romer (1990) model for economic growth, incorporates knowledge accumulation as a dynamic endogenous variable. It can be argued that technological change and innovation is driven by both *technological capabilities* and 'know-how' or *knowledge* (Cantner & Pyka, 1998). These two interrelated aspects of technological evolution have been incorporated in the agent-based model developed here as two separate variables: *technological sophistication*, τ , and knowledge, W (refer to 5.2.1 for details). These two variables allow for the implementation of level and composition effects in determining productivity growth, loosely aligned with the approach of (Vandenbussche, et al., 2006).

Digital connectivity coupled with innovations in software technology are fundamentally changing society and business. Some of these innovations include implantable technologies, big data for decision making, cloud computing, artificial intelligence (AI), 3D printing, blockchain, smart homes, the internet of things, etc. (Schwab, 2016). It has been observed that innovation can benefit organisations and consumers in several ways (Powell & Snellman, 2004). Reducing costs through improved productivity and higher levels of efficiencies are important benefits for a business. Innovation has led to a dramatic proliferation of new goods and services, which is attractive to consumers. Using data-mining, AI, machine learning, and big data analytics technologies, many companies are now able to exploit their vast amounts of data towards gaining a competitive advantage (Provost & Fawcett, 2013). Data and the ability to extract knowledge is becoming an important strategic resource (Smith, 2020). This observation has become one of the fundamental principles of data science (Provost & Fawcett, 2013).

4.5. Knowledge-Based Economies

The ability to solve complex problems by extracting useful knowledge from data is an important part of a modern business (Provost & Fawcett, 2013; Larose & Larose, 2014). Knowledge has become an important driver for economic growth in many countries (Godin, 2006). This has led to the concept of a knowledge-based economy (KBE). “*The knowledge-based economy is an expression coined to describe trends in advanced economies towards greater dependence on knowledge, information and high skill levels, and the increasing need for ready access to all of these by the business and public sectors*” (OECD, 2005). Vavra (2017) proposed four pillars that underpin the successful cultivation of a KBE:

- (a) a highly educated and skilled workforce,
- (b) an environment that nurtures research and development,
- (c) a dynamic and effective information and communications technology infrastructure, and
- (d) a culture that promotes knowledge development.

These pillars are closely aligned with the four pillars comprising the World Bank Knowledge Economy Index (Chen & Dahlman, 2005). The World Economic Forum has identified several technological drivers of change for the foreseeable future: high-speed internet connectivity, AI, big data analytics and cloud-based technology (WEF, 2018).

Knowledge, innovation and the ability to successfully leverage technology has become important strategic resources for organisations. Andrade et al. (2018) showed that a higher return on investment from research and development (R&D) is achieved as firms approach the technological frontier. The RBV and a firm’s dynamic capability may explain why certain firms are better positioned to develop new innovative processes or products. An innovative firm tends to create an environment that fosters further innovative behaviour, resulting in ‘innovability’ being an important intangible and dynamic resource for the firm (Saunila & Ukko, 2014). There is an increasing need for firms to focus on the role of learning and continuous innovation (Powell & Snellman, 2004). Such a firm will tend to be more flexible, perceptive, adaptable and profitable. A firm’s dynamic capability, including its ability to innovate and utilise its accumulated knowledge, is therefore closely associated with the firm’s ability to learn and embrace change. Once a firm embarks on a path of innovation to enhance its capabilities, the positive feedback loop (as shown in Figure 1), may lead to superior performance and a sustained competitive advantage.

4.6. The South African Situation

South Africa is experiencing persistently poor economic growth, high levels of inequality and poverty (Akanbi, 2016). Based on long-run historical data, Akanbi (2016) demonstrated that there are several causal links between growth, poverty and inequality. It has been observed that South Africa is “*one of the most unequal societies in the world*” (Tregenna & Tsela, 2012). Income inequality, measured using the Gini index, in South Africa has followed an upward trend since 1993, as can be seen in Figure 2(c) and as observed by Tregenna & Tsela (2012). A recent report by Stats SA highlighted that South Africa currently has a Gini coefficient between 0.65 and 0.67 (Statistics South Africa, 2019), ranking it the worst in the world (World Population Review, 2022).

Some of the reasons for the poor economic performance include, decreasing levels of foreign direct investment (shown in Figure 2(a)), high levels of uncertainty (Redl, 2018), a struggling education system (Reddy, et al., 2015), poor performance by state-owned enterprises, an underperforming manufacturing sector (Ly, 2019), and a low savings rate (Hungwe & Odhiambo, 2019).

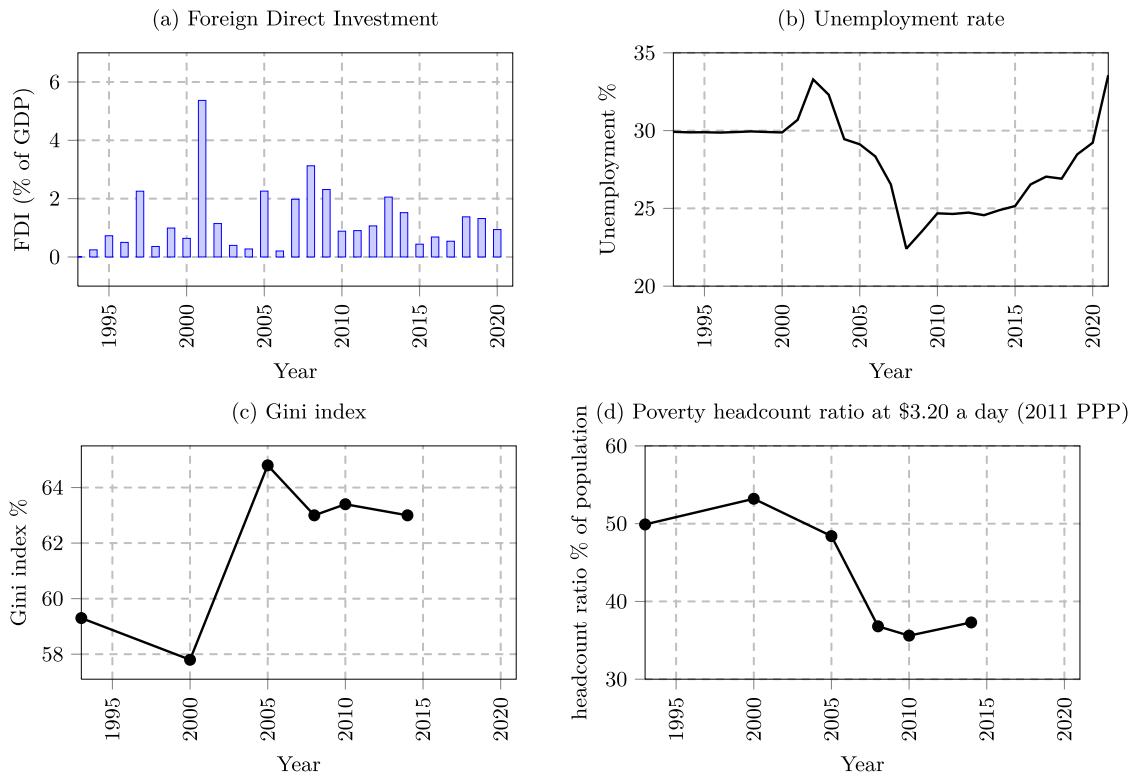


Figure 2: Various macroeconomic indicators for South Africa. Raw data source: World Bank (2021)

Recent media articles have noted the potential negative implications of the 4IR on South African unemployment (Biepkke, 2018; Falkenberg, 2018). South Africa has a high unemployment rate fluctuating around 30% (shown in Figure 2(b)), and a relatively large number of low-skilled workers (Davies & van Seventer, 2020). Without significant improvements in education and skills development, the fourth industrial revolution may result in even higher levels of unemployment. The agent-based model developed in this project aims to test this hypothesis.

4.7. Agent-Based Modelling

Agent-based modelling (ABM) is a computational approach for simulating the behaviour of a large number of autonomous *agents* within an artificial *environment*, where the agents may interact with each other and their environment (Siegfried, 2014). It has become an increasingly useful tool in the study of complex adaptive systems, particularly in social systems including areas such as economics, sociology, geography, ecology and environmental sciences (Billari, et al., 2006; Epstein, 2006). Complex adaptive systems are characterised by many coupled elements whose properties are interdependent (Siegfried, 2014; Gatti, et al., 2018).

There are three basic ingredients in an agent-based model: *agents* as the active elements in the model, an *environment* in which the agents operate and a *scheduler* that determines the sequence and timing of events in the simulation. An agent can be defined as a discrete, heterogeneous, software object, with a set of unique defining attributes or characteristics, that exists within some artificial environment, is capable of autonomous action governed by a set of behavioural rules and interacts with other agents in order to meet its objectives (Siegfried, 2014). Each type of agent is assigned attributes and possesses behavioural functionality that encodes their interactions with other agents as well as the environment. The environment could also be attributed with characteristics that may either be externally determined or altered based on the interactions with the agents. A key feature is that “*the only equations present are those used by individual agents for decision making. Different agents may have different decision rules and different information; usually, no agents have global information, and the behavioral rules involve bounded computational capacities.*” (Axtell & Epstein, 2006).

Another distinguishing feature of an ABM is that it is a ‘bottom-up’ approach to modelling in which one models the micro-level behaviour, decision-making and interactions of the various agents in the system (Grow & Van Bavel, 2017). An important consequence of the ABM approach is the concept of *emergent phenomena*. The term emergence is used to characterise aggregated structures that may arise from simple rules (Gatti, et al., 2011). An advantage of ABM is that it provides a way to study the interplay between different scales within a system since it is possible to interrogate the relationship between micro-level behaviour and macro-level phenomena (Gatti, et al., 2018). In an economic ABM model, macro-economic phenomena emerges from micro-level behaviour. It provides a computational link between microeconomics and macroeconomics (Gualdi, et al., 2015; Gatti, et al., 2005; Lengnick, 2013; Gatti, et al., 2018). For example, macroeconomic consumption within a country is a consequence of the aggregated consumption decisions of all the households in the country. The emergence of macroscopic behaviour from microscopic interactions is an important principle in physics, where for example, the empirical laws of thermodynamics emerge from the quantum interactions of a large ensemble of particles using the theoretical framework of statistical mechanics (Pathria 1996).

Agent-based approaches have become a popular tool to economic modelling in a wide variety of economic applications (Boero, et al., 2015). The appeal is due to the fact that simple behavioural rules determine how agents interact within a complex environment (Ashraf, et al., 2017). The usefulness of agent-based economic modelling is that it provides a way to integrate theoretical models with empirical data, allows for the exploration of causal effects, provides a way to incorporate different levels of heterogeneity of the economic agents, is usually scalable, and can integrate social dynamics (Boero, 2015). Some applications of *macroeconomic* agent-based modelling (MABM) include: emergent macroeconomic phenomena (Gualdi, et al., 2015; Gatti, et al., 2005; Lengnick, 2013; Gatti, et al., 2018), financial markets (Grilli & Tedeschi, 2016), the impact of technology on economic growth (Napoletano, et al., 2005), the effect of inflation on macroeconomic performance (Ashraf, et al., 2014), the role of banks in an economy (Ashraf, et al., 2017), the impact of economic policy decisions (Dawid, et al., 2014; Riccetti, et al., 2017; Bonaventura, 2011), the impact of consumer behaviour (North, et al., 2010; Tsekeris & Vogiatzoglou, 2011), and the dynamic impact of various types of firms (Assenza, et al., 2015; Ikeda, et al., 2007; Ciutacu & Micu, 2015).

A recent review article by (Dawid & Gatti, 2018) summarised and compared several *macroeconomic agent-based models*. Lengnick (2013) argues that there are two categories of agent-based computational economics models: models that try to accurately mimic real-world economies, and models that are more stylized or abstract that try to develop a deeper understanding of macroeconomic theory. The simplest MABM models, such as the model by Lengnick (2013), incorporate only two types of agents: households and firms. They only interact via two markets: the consumer goods product market and the labour market. More complex MABMs incorporate more types of agents (such as government, banks, different types of firms, etc.) that would interact via additional markets. Markets therefore serve as an important mechanism for interaction amongst economic agents.

5. Research Methodology

The agent-based model that has been developed is based on a simplified economy consisting of various types of agents and markets as shown in Figure 3. The model consists of 5 types of agents: *individuals*, *consumer firms* (C-firms), a *capital firm* (K-firm), other *countries*, and *government*. The agents interact via three markets: a *product market*, a *foreign market* and a *labour market*.

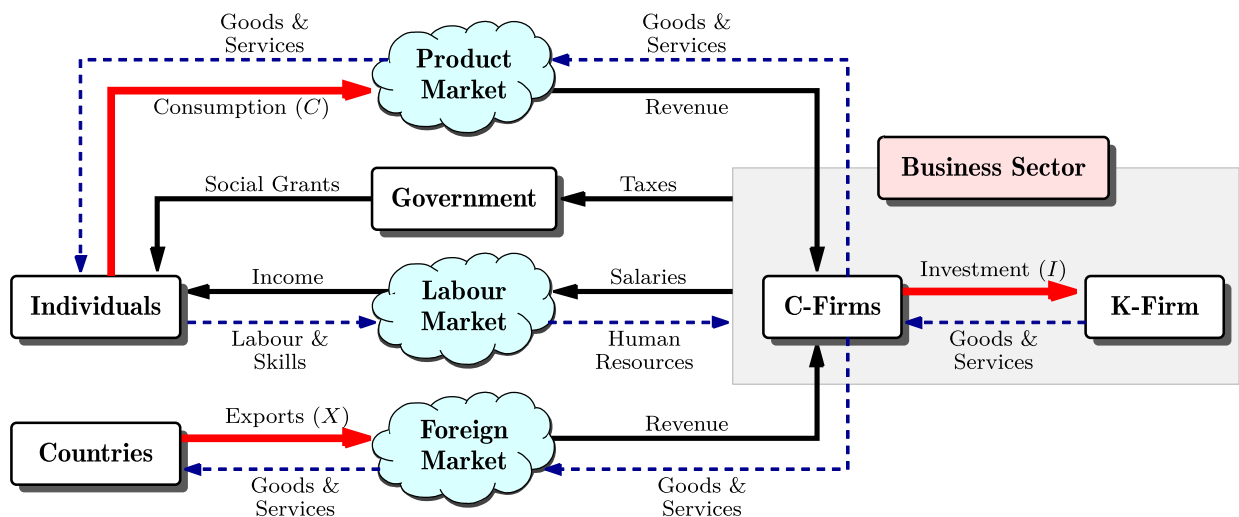


Figure 3: The economic framework used as the basis for the simulation model.

The sections that follow provide highlights of some features of the model. Full details are available in the thesis (Giovannoni, 2021).

5.1. Individuals

The primary consumers in the economy are individual agents, that also serve as the workforce for firms. The collection of all individual agents forms the population. Each individual agent is characterised by an age, a level of education, an economic status, a demand for various goods and services, available cash and accumulated wealth.

The agent-based model presented here differs from many of the other macroeconomic ABM (MABM) models outlined in Section 4.7, with the main difference being in the nature of an individual agents' ability to evolve over time. The number of individual agents within the population will grow at a predefined growth rate, so that the number of individuals in the economy is not constant as is the case with many other MABM models (Assenza, et al., 2015; Gualdi, et al., 2015; Lengnick, 2013). In addition, each individual will undergo a life-cycle, by being born, ageing and eventually dying. It is for this reason that the consumers are referred to as 'individuals' and not 'households'.

Individual agents will have an amount of *cash* representing their disposable income. Income received either from salaries or social grants will increase the cash available. A fixed percentage of cash, dependent on the level of education, will be allocated to savings. After a person has retired, they will live off their accumulated *savings*.

5.1.1. Age of Individuals

Each individual agent in the population is created with an *age* attribute that increases yearly. The age distribution of individuals in the population is initialised in such a way as to follow the general shape of the South African age distribution curve. The population distribution is approximated by a half-normal distribution function, and so the population of individual agents is initialised with randomly drawn ages that approximately follow a half-normal distribution.

The initial and final distribution of ages in a typical simulation run is shown in Figure 4, together with fitted half-normal distribution curves and the appropriately scaled actual distribution of ages in South Africa (Statistics South Africa, 2019). The simulation has approximately maintained the half-normal population distribution throughout the simulation runs.

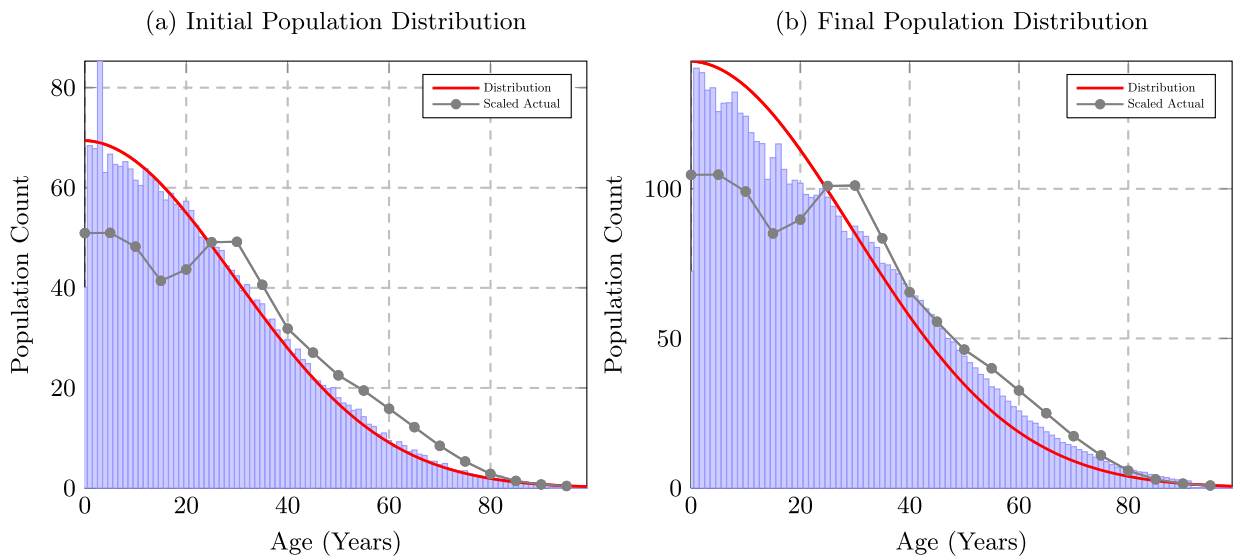


Figure 4: Initial and final age distribution of the population from the baseline simulation. The scaled actual data points are based on South African population data (Statistics South Africa 2019b, Table 11).

5.1.2. Status of Individuals

There are two properties that characterise the role of an individual within the economy: an *education* attribute, and a *status* attribute. The *education* attribute defines the individuals' level of education in a similar way as by (Kinsella, et al., 2011). The *education* attribute may be assigned the values: *unskilled* (no qualification), *matric* (semi-skilled), *bachelors* (skilled), or *postgraduate* (highly skilled). In later sections, each of these levels of education is identified by the index, *e*.

As individuals age their role in the economy is determined by the *status* attribute. When 'born', they are classified as a *child*, and after entering the schooling system identified as *school*. They progress through the education system, possibly progressing to tertiary education (*studying*) gaining higher levels of qualification (assigned to the *education* attribute). Upon exiting the education system with a particular level of education, the individual is classified as *unemployed* and enters the labour market. If a firm decides to employ an individual, the *status* attribute is set to *employed*. The individual will then work until retirement. The possible values for the *status* attribute are therefore: *child*, *school*, *studying*, *unemployed*, *employed*, or *retired*. The various status possibilities are shown in Figure 5, together with a status categorisation scheme used to identify if an individual is a *consumer*, or a *passive* member of the population.

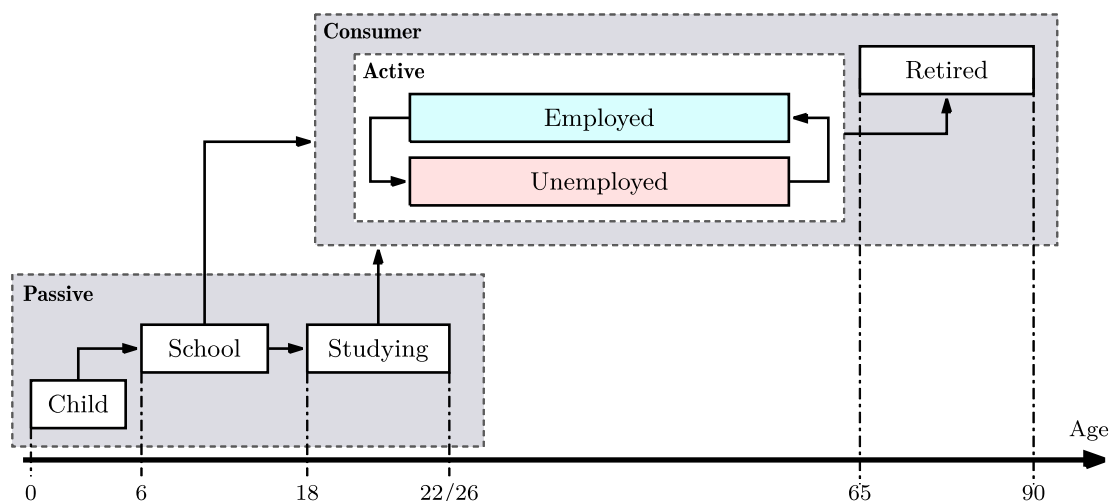


Figure 5: A diagrammatic representation of the evolution of the status attribute for individuals.

5.1.3. Behavioural Rules

The change in *status* of an individual is a function of the age of the individual, random choices or decisions that the individual makes, and whether they are employed. The choices or decisions are based on a set of progression probability parameters used for the simulation. At various times when a progression choice needs to be made, a uniformly distributed random number is generated. Progression through the education system is based on the random number relative to the progression probability. For example, if an individual has finished school and obtained a matric qualification (with *education*, e , assigned the value of *semi-skilled*), there is a progression probability of 0.4, that the individual will enter higher education, upon which the *status* attribute is assigned the value *studying*. The remaining 60% of those individuals with matric would enter the labour force as active members of the population, with a *status* as *unemployed*. The individuals that are categorised as consumers (Figure 5) receive various sources of income: the *employed* receive salaries, the *unemployed* receive social grants and the *retired* use their accumulated savings. Each month, the income received is added to the individual's *cash* variable. After receiving a salary, employed individuals will save a percentage of their income adding to their accumulated savings. The propensity to save increases with *education*. Any remaining cash is then available to purchase goods from the product market.

During the month, the consumer individuals will decide on the *basket* of goods required, analogous to the '*consumption bundle*' of Ashraf et al. (2017). The various categories of consumers will each demand a different mix of products. Unemployed and retired agents will have a goods basket dominated by *essential* goods, while employed individuals will have a mix of goods that progressively includes more *luxury* goods at higher levels of education.

5.2. Firms

The second major class of agents in the economic model are firms that produce consumer goods, referred to as *C-firms*. A fixed number of C-firms are created (based on population size) and are infinitely lived. For the sake of simplicity, it is assumed that each C-firm in the economy produces a single product. A single capital producing firm, or *K-firm*, provides the necessary capital equipment or knowledge infrastructure to the consumer firms. Both types of firms will employ individuals, earn revenue, accumulate profits, and pay taxes. Thus, the only costs incurred by firms are labour costs and taxation. There are no material costs in the model. It is assumed that salaries paid to an individual do not change with time.

Each C-firm is defined by several parameters including: the type of *product*; the base sales *price* for the product; the labour skills *composition*; its investment in *capital* and *knowledge*; and the level of *technological sophistication*. A firm can produce one of two possible types of products (or services): *essential* goods or *luxury* goods. These types of products established two sectors in the product market. Each product sector is assumed to have a similar market structure in terms of product homogeneity, pricing, technological sophistication, labour requirements, productivities, etc.

5.2.1. Knowledge and Technological Sophistication

Two variables are used to define different yet complementary aspects of the technological capabilities of a firm: *knowledge* and *technological sophistication*.

- **Knowledge, W :** The accumulated knowledge of a firm, incorporating 'know-how', systems, procedures, associated infrastructure, etc., is captured by the knowledge variable, W . Knowledge is treated as an asset, which means that the knowledge variable is measured in currency units. Firms can therefore invest in knowledge in a similar way as investing in capital. A primary difference between *capital* and *knowledge* in the model is that knowledge does not depreciate over time.
- **Technological sophistication, τ :** The technological capabilities of a firm are represented by the technological sophistication variable. It encapsulates aspects such as production technologies employed, the level of automation, resource planning systems, etc. Each firm is created with an initial level of technological sophistication, taking on a value between 0 and 1, that grows slowly over time. The lower limit, $\tau \approx 0$, represents a firm with low

technological capabilities; while $\tau = 1$, represents the technological frontier for the industry (Andrade, et al., 2018). Technological sophistication is used to establish the skills *composition* of employees within the firm, discussed in the following section.

Technological progress as an important determinant of economic growth has been decomposed into these two complementary factors. The role that these variables play within a firm will be described in the sections that follow.

5.2.2. Labour

A firm will employ individuals with an appropriate mix of skills. There are two aspects of labour that a firm needs to consider: the total number of employees, and the capabilities of the employees (Bechet, 2008). In the model, it is assumed that the total number of employees is determined by production requirements, while the required capabilities is determined by the technological sophistication, τ , of the firm. A more technologically sophisticated firm will require a workforce with a higher percentage of skilled employees. The skills requirements of a firm are described by a qualifications mix of employees, as a function of τ . The *labour composition* of employees, L_{fe} , is an array of the number of employees for a firm, f , with a particular level of education, e (see Section 5.1.2).

5.2.3. Production

The production capacity for each firm, f , is assumed to depend on the *labour composition*, L_{fe} , the available capital, K_f , and accumulated knowledge, W_f . The firm capital, measured in currency units, represents the total investment in plant and equipment. Capital depreciates over time at a fixed depreciation rate for each firm. Each C-firm is assumed to follow a Cobb-Douglas type production function used to calculate the production capacity of a firm, given by

$$q_f^{MAX} = C_f (A_f^K(W_f) K_f)^{\alpha_f} \left(\sum_e A_{fe}^L(W_f) L_{fe}(\tau_f) \right)^{1-\alpha_f},$$

where, C_f is an overall production scaling parameter; $A_f^K(W_f)$ is the capital productivity as a function of knowledge; $A_{fe}^L(W_f)$ are the labour productivities for each education level, e , and α_f is the output elasticity for capital. The modelled components of technological progress: knowledge and technological sophistication, affect the firm production function in different ways. The key idea is that knowledge influences the capital and labour productivities, while technological sophistication influences labour composition.

5.3. Markets

In the model, markets are the mediating mechanism by which the various economic agents interact with each other. There are three types of markets used in the model shown in Figure 3: a *product market*, a *labour market* and a *foreign market*. A **market** software object was created to provide generic properties of a market, consisting of a collection of **buyer** agents who will attempt to purchase an assortment of products in each market sectors; and a collection of **seller** agents that are each able to supply a product in a particular market sector. In the *product market*, the **buyers** are individuals, the **sellors** are C-firms and there are two product sectors for *essential* and *luxury* goods. Each individual will establish its required *basket* of products that it needs to purchase from the market, based on income, *education* and *status*. In the *labour market*, the **buyers** are firms, the **sellors** are individuals and there are four ‘product sectors’ for each level of education. The *basket* of skills required by a firm is determined based on its production needs, current levels of employment and *labour composition* needs based on its level of technological sophistication (see 5.2.2). A **buyer** will make several trips to the market in an attempt to fill its *basket* and will only purchase a product if it has enough cash available.

5.4. Firm Choices and Strategic Decisions

Based on prevailing market conditions a C-firm may adjust its production capacity and the sales price of its product. There are various approaches to production and pricing decision-making used in existing MABM models (Dawid & Gatti, 2018). The approach to changing a firm's production capacity, motivated by the approach of (Lengnick, 2013), is to adapt the factors of production, using stock, Δ_f , as a firm's measure of demand. Low stock provides a signal for high market demand; while high stock levels indicates low demand (at the firms current prices.) These adaptations can occur at different frequencies for each firm. Pricing adjustments can be made with relative ease and so can occur relatively frequently. The ability to change production capacity would take more time, hence less frequently. Long-term decisions are made every few years and result in significant changes to the factors of production: labour, capital or knowledge. These decisions are more strategic in nature and typically would require knowledge of the prevailing market conditions and require long-term history of market performance.

5.4.1. Relative Stock as a Signal of Demand

Each firm will have a unique production capacity and operate in a particular market sector. Using current stock levels for a firm, Δ_f , is problematic as an absolute measure of demand since each firm would have different production capacities. A relative measure of stock, $\delta_f = \frac{\Delta_f}{q_f^{MAX}}$, provides a more convenient measure since it is a normalised variable, with $\delta_f = 0$ representing a stock-out scenario, signalling high demand; while $\delta_f = 1$ represents an extreme condition of zero sales, signalling low demand. Furthermore, a moving average of the relative stock is used to ensure that decisions are made based on persistent market conditions, so that firm decisions are not based on possibly anomalous conditions for a particular month.

5.4.2. Pricing Heuristic

Firms will change their prices based on their supply capabilities, demand characteristics and their prices relative to prevailing market prices. If the demand is low, signalled by a high value of average relative stock, the firm should reduce its price; while a high demand means that a firm can increase its price. A firm would also need to compare its product price, to the average market price in the sector. If the firm's price is higher than the average market price, then the firm should decrease its price; while if the price is lower than the average market price, then the firm should increase its price.

There are two scenarios where the rules conflict: high demand with a higher-than-average market price and low demand with a low product price. A high demand with a high-price scenario is favourable for the firm, meaning that despite having higher than average market prices, the firm is still able to sell its product. In this case, the firm should leave the price unchanged, or reduce the price by a very small amount in order to remain competitive. The low demand with low relative market price case is an ambiguous scenario for the firm. Despite having a low price, the firm is still incapable of selling all its products. In this case, the firm would only slightly decrease its price in an attempt to sell more products in the market.

5.4.3. Labour Adaptation

Periodically, firms would adapt their production capacity based on relative stock levels serving as signals of market demand. Various stock-level trigger parameters are used to determine the required change in labour, ΔL . Low values of δ_f will result in an increase in the labour count ($\Delta L > 0$), while high values of δ_f will result in a decrease in the labour count ($\Delta L < 0$).

5.4.4. Capital and Knowledge Adaptation

With similar reasoning as with labour adaptation, firms may adapt their investment in capital, K , and knowledge, W , based on relative stock. The changes in capital and knowledge investment (ΔK , ΔW) are calculated based on the relative stock using continuous sigmoid functions. A relative increase in knowledge will increase the level of technological sophistication.

5.4.5. Implementing Strategic Shifts

Each firm is initialised with an investment period of between 1 to 3 years in which the firm would make a strategic decision on how to invest its savings. Firms can make significant changes to their labour force, make large-scale investments in new capital or embark on knowledge development programmes. In the model, the strategic choice is made by selecting one of the three factors of production to change over the next few years. This choice is regulated by a single parameter, the *capital-labour investment probability*, ζ . In the *baseline* simulation, $\zeta = 0.4$, which means that 40% of the time the firm will choose to expand its labour force; 40% of the time the firm will invest in capital equipment; and 20% of the time the investment will be in knowledge development programmes. For the *explored* simulations, chosen with $\zeta=0.35$, 35% of the time the firm will choose to change its labour, 35% of the time the firm will invest in capital, and 30% of the time the firm will invest in knowledge. All changes to the factors of production are measured in currency units, so the firm will only make the long-term investment if it has sufficient savings. Since there is no banking sector in the model, all financing of the investment is assumed to be from the firm. Adjusting this single simulation parameter results in a shift in the overall trend of how (on average) firms choose to invest for the future. By changing the simulation parameter from $\zeta = 0.4$ to 0.35 is the way in which the firms in the model are made to shift towards a knowledge-based paradigm.

6. Results and Findings

Simulations were run over 600 months, with 20 Monte-Carlo runs for each scenario. The underlying output variables from the model are obtained by averaging over all the Monte-Carlo runs thereby averaging-out stochastic fluctuations arising from each simulation. A burn-in of 3 years was used before data was recorded to ignore any initial transients in the simulation. The simulations were initialised with a seed population of 2,500 individuals, an initial unemployment rate of 25%, and a population growth rate of 1.5% per annum. Only one K-firm was used, 15 C-firms were created in the *essential* goods sector, and 10 firms in the *luxury* goods sector.

As noted previously, two simulation scenarios were considered: a *baseline* or benchmark simulation (with the capital-labour investment probability parameter $\zeta = 0.4$) and an *explored* simulation (with $\zeta = 0.35$) providing a higher average investment in knowledge and technology. Here, results for GDP and unemployment are presented for the two scenarios. Model validation checks are performed by fitting the simulation results to the Solow-Swan growth model and through confirmation of Okun's law.

6.1. GDP

Comparing the change in GDP, shown in Figure 6, we note a slight decrease in the long-term GDP from the baseline simulation to the explored simulation. The decrease is the result of slightly lower consumption, with exports and investment showing little change. The lower consumption is a consequence of changes in unemployment, shown in the following section. In the model, GDP is influenced by the population growth rate, which was unchanged between the two scenarios.

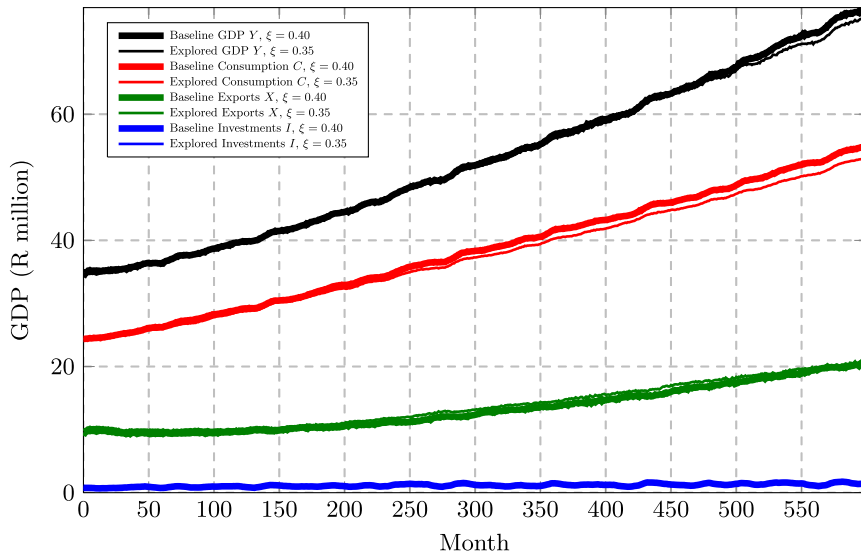


Figure 6: Comparison of GDP for the two simulation scenarios.

6.2. Unemployment

Figure 7 shows the unemployment rate for the two scenarios. In the long-term, there is significantly higher unemployment in the explored scenario. The higher level of unemployment impacts the spending patterns of the population. A larger number of consumers with low disposable income, would result in lower aggregate consumption and hence a lower GDP.

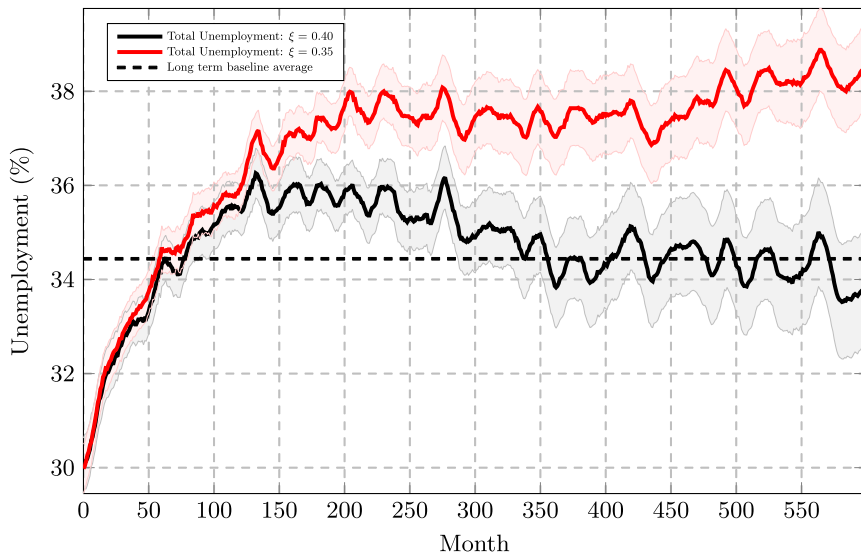


Figure 7: Comparison of the total unemployment for the difference simulation scenarios.

Comparing the change in unemployment for the different skill levels, shown in Figure 8, there are significant increases in unemployment for the unskilled and semi-skilled education levels of the population. For the more highly skilled sectors of the population, unemployment steadily declines, with lower levels of unemployment long-term for the explored scenario. This shows the need for a more highly skilled workforce in the long-term when there is a shift towards higher levels of technological sophistication in the economy.

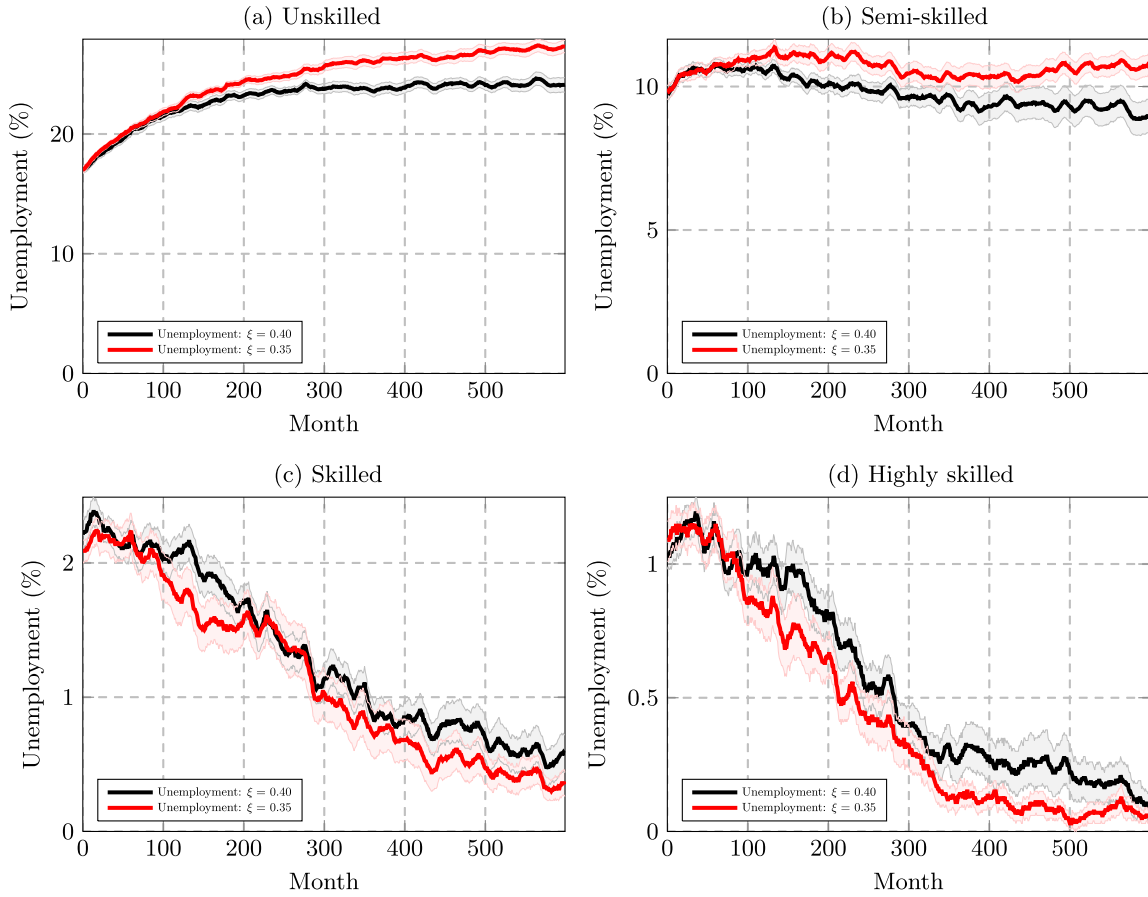


Figure 8: Unemployment for the simulation scenarios and different education levels.

6.3. Firm labour composition

Results for the labour composition (as a percentage of the total labour force) of all firms between the two scenarios are shown in Figure 9. In both scenarios, the labour composition of unskilled workers steadily declines over time, semi-skilled workers remains fairly constant in the long-term; while the composition of the more highly skilled workers increases over time. As could be expected, the unskilled labour composition is lower in the explored scenario since fewer unskilled workers would be required in a more technologically sophisticated economy. The significant deviation between the two scenarios appears in the composition of the more highly skilled workers (skilled and highly-skilled). The explored scenario shows a significant increase in the labour composition of the more highly skilled workers. These results demonstrate that as firms strategically shift towards higher levels of technological sophistication over time, their workforce would need to be more highly skilled.

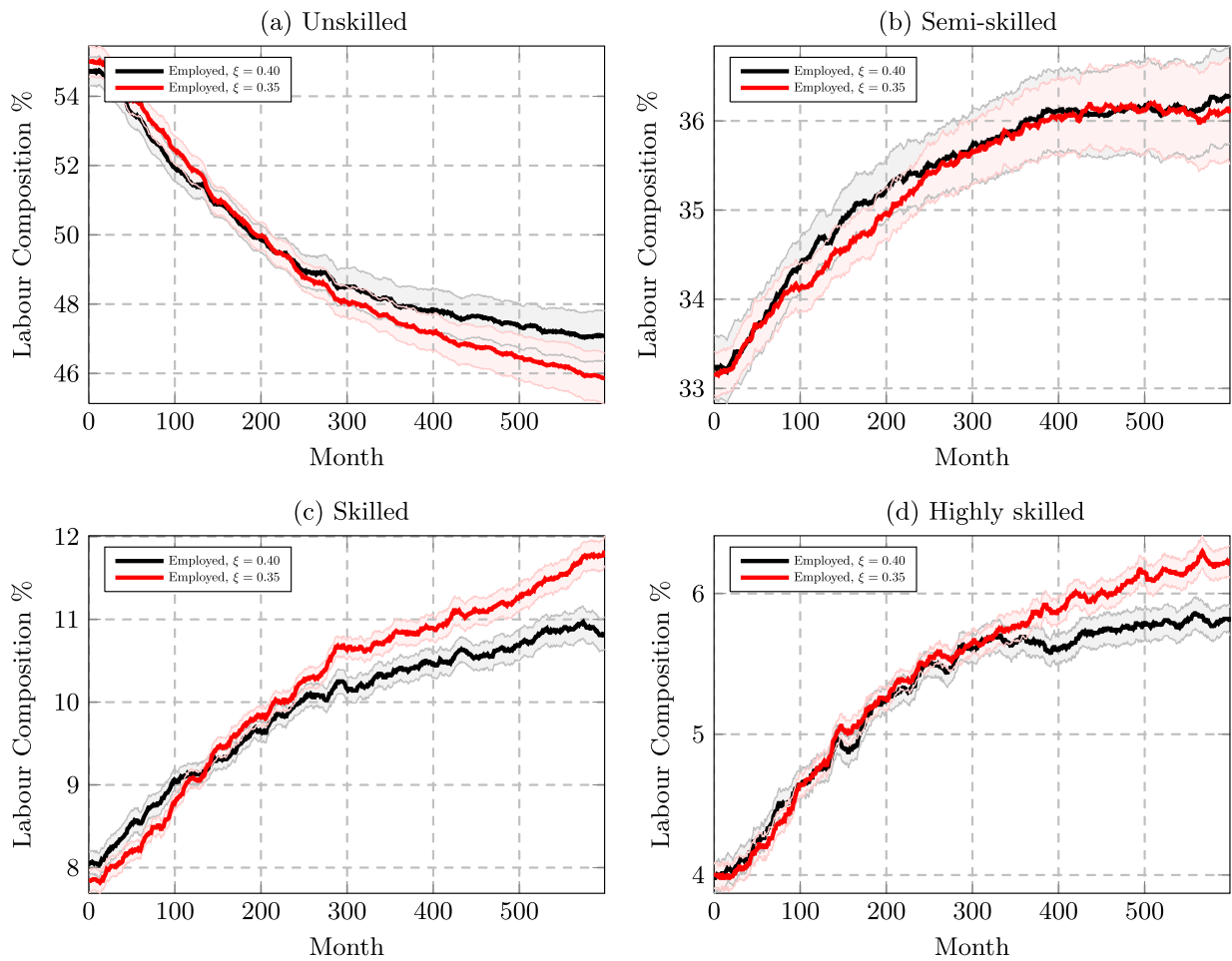


Figure 9: Total labour composition by education for the simulation scenarios.

6.4. Validation of results

The results obtained can be validated according to established macroeconomic models.

6.4.1. Solow-Swan growth model

The Solow-Swan model serves as a simple macroeconomic model for understanding economic growth (Sørensen & Whitta-Jacobsen, 2010; Romer, 2011). The solution to the Solow-Swan model is parameterised in terms of the initial GDP, Y_0 , the initial capital per unit of effective labour, k_0 , the aggregate output elasticity for capital used in a 2-input Cobb-Douglas production function, α , the capital depreciation rate, δ , the savings rate, s , the labour productivity growth rate, g , and the labour growth rate, n . In validating the simulations to the model, the Solow-Swan solution was fitted to the GDP data for the two simulation scenarios shown in Figure 10.

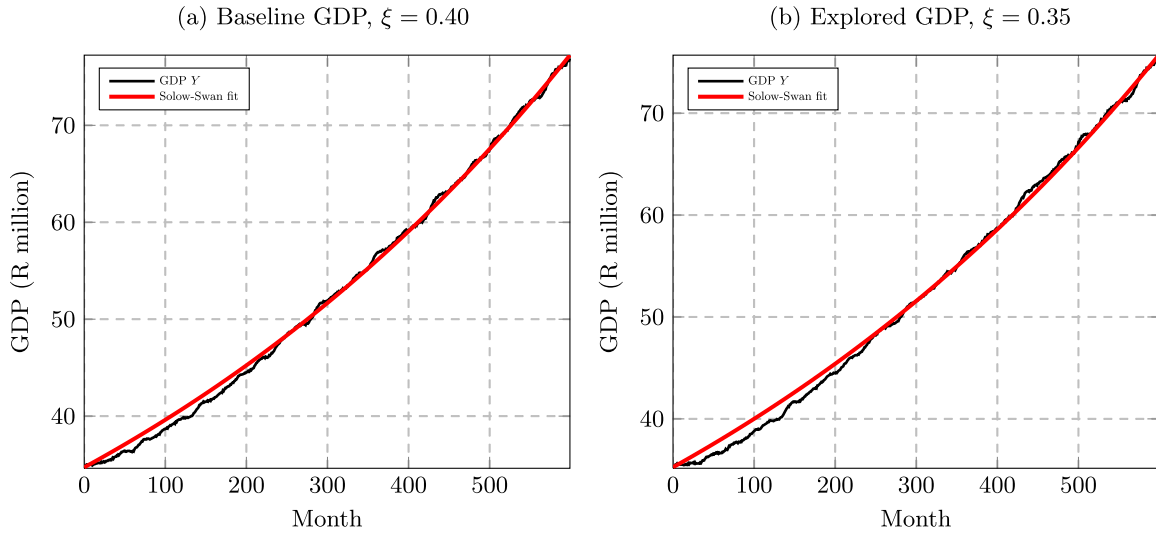


Figure 10: Comparison of GDP to fitted Solow-Swan solutions.

The initial GDP was obtained as the value of GDP in the first month. The labour growth rate was obtained by performing an exponential fit to the total labour force. The savings rate in the Solow-Swan model relates the capital investment to GDP, $I(t) = sY(t)$. Using the capital investment results together with the GDP data, it was possible to calculate the average savings rate, over the duration of the simulation run, which was used as the seed value for the fit. The average savings rate obtained for the baseline simulation was found to be $s_b = 1.77\%$; while for the explored simulation it was found to be $s_e = 1.48\%$. These values indicate a lower overall investment in capital in the explored scenario since there was a greater investment in knowledge in that case. A fit to the baseline simulation results produced the following model parameters:

$$Y_0 = 34.7, k_0 = 0.07, \alpha = 0.499, \delta = 0.0\%, s = 1.78\%, g = 0.132\% \text{p.m.}, n = 0.12\% \text{p.m.}$$

Fitting the explored simulation results produced the model parameters:

$$Y_0 = 35.3, k_0 = 0.06, \alpha = 0.503, \delta = 0.0013\%, s = 1.49\%, g = 0.137\% \text{p.m.}, n = 0.11\% \text{p.m.}$$

The following observations can be made from these parameters:

- (a) The savings rate is reduced from 1.78% in the baseline simulation to 1.49% in the explored simulation. This highlights a decrease in capital investment in the explored simulation scenario, which was the result of the reallocation of investment towards knowledge development within the firms.
- (b) A relevant difference between the fit parameters is the increase in the aggregate labour productivity growth rate, g , from 0.132% p.m. in the baseline simulation to 0.137% p.m. in the explored simulation. Knowledge level effects in the production function of an individual firm were such that an increase in the firm's investment in knowledge would result in an increase in the labour and capital productivities (as shown in 5.2.3). The average relative increase in knowledge investment in the economy in the explored scenario, resulted in an overall increase in the aggregated productivities for the firms in the economy.

The change in parameters of the Solow-Swan growth model therefore confirms the change in behaviour of the agent-based model between the two simulation scenarios.

6.4.2. Okun's law

Okun's law predicts a relationship between changes in GDP and unemployment (Sørensen & Whitta-Jacobsen, 2010; Romer, 2011; Burda & Wyplosz, 2017). The premise is that higher unemployment suppresses GDP growth. A linear growth form of Okun's law may be written as (Abel, et al., 2016)

$$\frac{\Delta Y}{Y} = k + c\Delta u,$$

where $\frac{\Delta Y}{Y}$ is the percentage change in growth of GDP, Δu is the change in unemployment, k is the intercept at $\Delta u = 0$, and c is the slope relating changes in unemployment to changes in GDP. Historical data indicates that there is a tendency for increases in GDP to be accompanied by decreases in unemployment (Sørensen & Whitta-Jacobsen, 2010). This means that Okun's law postulates that the slope parameter, c , should be negative.

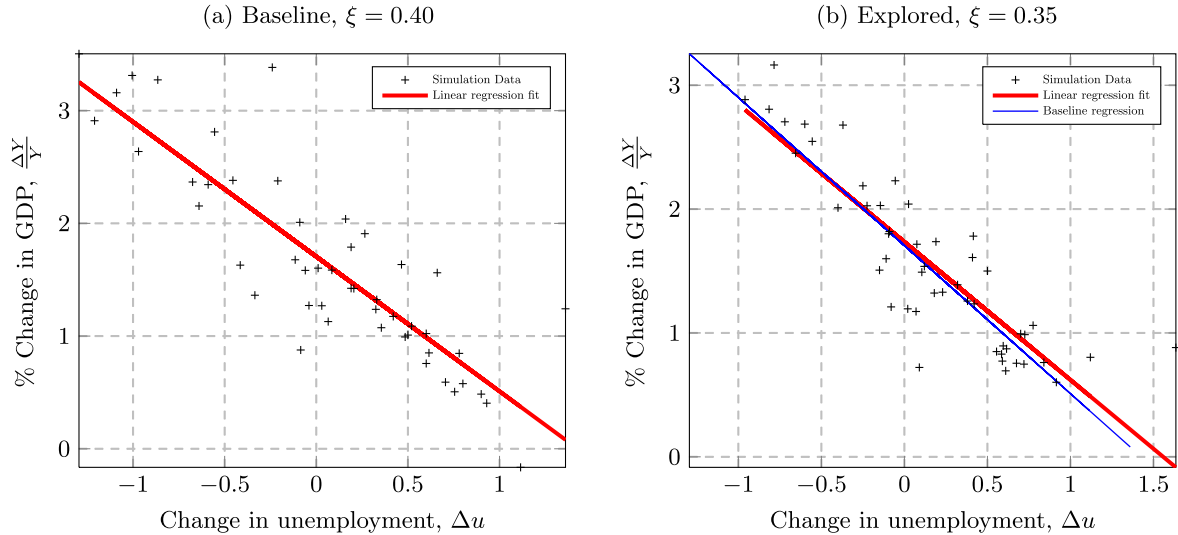


Figure 11: Comparison of annual % change in GDP to change in unemployment for the two simulation scenarios, showing Okun's law.

Figure 11 shows the monthly percentage change in GDP versus the change in unemployment for the two simulation scenarios. The data points show the annual changes in the Monte Carlo averages from the simulations. A linear regression was performed on the data from each of the two scenarios, with the regression lines shown in the figure. In both cases a negative slope was obtained, with $c = -1.195$ in the baseline scenario, and $c = -1.112$ in the explored scenario, confirming the essential postulate of Okun's law. In the model, a 1% increase in unemployment results in a 1.195% decrease in GDP for the baseline scenario, and a slightly smaller 1.112% decrease in GDP for the explored scenario. These values are of the same order of magnitude as those obtained from a recent study on South African data (Mazorodze & Siddiq, 2018).

7. Implications

The results from the model highlight several implications for business and macroeconomic policy decisions, especially in the South African context.

7.1. A holistic approach

The simulations only considered the consequences resulting from a change in a single parameter: investment in knowledge. The composition of skills within the population was unchanged as firms invested more heavily in knowledge. This resulted in stagnant economic growth and higher levels of unemployment. Attempting to leverage the advantages of the 4th industrial revolution (4IR) and the knowledge-based economy without increasing the skills composition of the population will ultimately constrain long-term future growth opportunities.

An aggregate measure of the level of development of a KBE is provided by the World Bank Knowledge Economy Index (KEI), (Chen & Dahlman, 2005). The KEI incorporates the four pillars, and the important consequence of the four pillars framework is that *no single economic stakeholder can be the driver for knowledge-based development*. A coordinated strategy between academia,

industry and government is imperative (Etzkowitz & Leydesdorff, 1995; Leydesdorff, 2012) . Academic curricula need to be aligned with the needs of industry. Government policies need to facilitate human capital development; be aligned with the needs of industry and educational institutions; allow for the efficient allocation of resources; stimulate creativity; encourage collaboration and integration; promote research and development; and incentivise innovation and knowledge development (Chen & Dahlman, 2005; Asongu, 2017). Companies need to engage more closely with academic institutions and implement skill development programmes.

The simulations show that unemployment is highest for the unskilled sector of the population, despite being the largest labour composition within firms. Furthermore, a shift towards a knowledge-based economy resulted in even higher levels of unemployment, particularly within the unskilled and semi-skilled labour force. An important consideration is that the education throughput rates were the same for all simulations, so the population composition of skills was unchanged. Furthermore, it was found that in the long-term, inequality will remain relatively unchanged when moving towards a KBE. The results reinforce the observation that education inequality will lead to higher levels of poverty and income or wealth inequality (Akanbi, 2016).

***Implication:** Failure to adopt a coordinated strategy between industry, academia, and government in attempts to achieve a KBE may result in constrained long-term economic growth and deteriorating levels of unemployment, inequality and poverty.*

7.2. Education and skills development

A largely unskilled population arising from poor education throughput in the model resulted in higher levels of unemployment when moving towards a KBE. In South Africa, despite modest improvements in the education system, there are significant challenges that remain. A recent report by the Centre for Risk Analysis highlighted several of these challenges, including poor throughput rates in the basic education system, high failure rates, large disparities in the attainment of educational qualifications between different racial groups, poor infrastructure in schools, etc. (CRA, 2018).

Investment in human capital, as well as the necessary infrastructure to support high-technology industries, is essential in order to develop a KBE (Blankley & Booyens, 2010) . Perhaps the most critical component required to develop the capacity for a KBE is a highly skilled population (Blankley & Booyens, 2010; Vadra, 2017) . Some important aspects of developing a highly skilled population include: increasing the quality of the education system, balancing the needs of a general education with a technical education, increasing R&D, and promoting a culture of life-long learning (Asongu & Odhiambo, 2020) . In part, this would require a more flexible education system that can adapt to developing the necessary skills required by a more technologically sophisticated economy (Lee, et al., 2018) . Companies wanting to shift towards higher levels of technological sophistication and knowledge utilisation should invest in human capital development and engage more closely with educational institutions to align curricula with their needs.

***Implication:** A necessary condition for a KBE is the transformation of the education system to one that is inclusive, focused on quality, adaptive, encourages creativity, aligned with the needs of industry, and stimulates R&D.*

7.3. The efficiency incentive

An economic incentive for firms to invest in knowledge development is to improve efficiencies. Higher levels of productivity and efficiency can be achieved from technological progress through knowledge development (Perelman, 1995; Powell & Snellman, 2004) . The agent-based model resulted in higher aggregate capital and labour productivities in the economy. When comparing the simulation results to the Solow-Swan growth model, it was found that an increase in investment in knowledge and technology results in an increase in the aggregate Solow-Swan labour productivity parameter. Firms would undoubtedly embrace productivity-improving initiatives in order to increase profitability and operating efficiencies.

Implication: Improved efficiencies provide an economic incentive for companies to invest in knowledge development.

8. Conclusion

An agent-based model was developed in order to simulate and investigate the macroeconomic consequences emerging from the strategic decisions of firms to invest in knowledge development. Technological progress through innovation and knowledge development are important drivers of economic growth (Diaconu, 2011; Asongu & Andrés, 2020). Complementary aspects of technological progress were used in the model: *technological sophistication* and investment in *knowledge*. Two simulation scenarios were constructed, one used as a baseline or reference scenario, and an explored scenario in which there was a higher tendency by firms to invest in knowledge development. The simulation results showed no significant change in GDP as firms in the model economy invested more heavily in knowledge. However, the greater investment in knowledge development resulted in significantly higher levels of unemployment, particularly for unskilled workers. The unemployment rates for the more highly skilled sectors of the population decreased over time as firms became more technologically sophisticated. The results were validated by fitting the simulation data to the Solow-Swan growth model and through the confirmation of Okun's law relating GDP growth and unemployment.

8.1. To KBE, or not to KBE, that is the question!

“A knowledge-based economy will not necessarily ensure national economic prosperity, improved health and well-being, ecological sustainability and reduced inequalities” (Blankley & Booyens, 2010). In other words, a knowledge-based economy is not a silver bullet that can be used to solve broad socio-economic problems of poor economic growth, unemployment, inequality and poverty. The simulation results do not however simply show that a country like South Africa should not embrace the KBE paradigm. What the simulation does show is that embracing a knowledge economy without changing anything else would be problematic in the long-run. A holistic, multi-faceted approach would be required.

There is also another dimension that must be considered: global competitiveness. New opportunities for growth and development in developing countries have been created by the globalisation of technology (Vadra, 2017). The model assumed that global demand would steadily increase regardless of anything else. Not adopting global trends in technological development could leave a country behind due to lower levels of productivity. For South Africa it would be a case of: *damned if we do, damned if we don't*.

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Developing a Water Disclosure Index For The Food, Beverage and Tobacco Industry: An Integrative Approach

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Keywords

Water; water disclosure index; food, beverage and tobacco industry; integrated reporting; sustainability reporting; inductive-, abductive- & deductive reasoning

Abstract

Companies worldwide are accused of lagging responsibility for their environmental footprints. Against the backdrop that the World Economic Forum identified water as one of the top five risks in terms of impact, the main objective of this paper was to develop a generic water disclosure index for the food, beverage and tobacco industry. Within the context of theories that focus on companies' communication on their corporate sustainability reporting (CSR) to stakeholders, three approaches of reasoning contributed to the development of the index. This paper illustrates how a preliminary water disclosure index was:

1. Inductively developed from guiding principles and content elements of integrated reporting (IR), existing water disclosure frameworks, and other literature.
2. Deductively empirical tested in a sample of 49 companies from Australia, South Africa, and global companies.
3. Abductively return to the literature to find some best practices to be incorporated into an improved index.

The novelty of the study is that the guiding principles and content elements of IR are pertinently incorporated into the new index. All the deductive tests have indicated that this index is efficacious. Therefore, this paper recommends that companies in this industry adopt this improved index, consisting of 29 elements grouped into seven constructs, to enhance their reporting on sustainability development to stakeholders.

1. Introduction

Companies worldwide are accused of lagging responsibility for their environmental footprints, such as depletion of natural resources and climate change (Braam *et al.*, 2016:724). Water, species, land, air, and ecosystems are examples of natural capital. Their sustainable development is key to human society (Dong *et al.*, 2021:2). There are many definitions of sustainability or sustainable development. However, the Brundtland's report "*Our Common Future*", published by the WCED (1987:37), remains contemporary, which state that: "*Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs*".

To assist companies in reporting on their sustainable development, Elkington coined the "*triple bottom line (TBL)*" phrase in 1994. That was not only an accounting tool but also a clarion call for deeper thinking of capitalism and the future thereof (Elkington, 2018:4). Khan *et al.* (2021:3) explain the concept of TBL as three compartments, economic sustainability to ensure profits, social sustainability to develop human capital, and environmental sustainability that refers to the

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consumption of natural resources. Sustainability accounting, which includes collecting, analysing, and reporting sustainability information to stakeholders, may enable companies to deal with the three compartments (Burritt & Schaltegger, 2010:832). However, the reported information is only helpful in making decisions if it adheres to the qualitative characteristics, relevance, representational faithfulness, verifiability, timeliness, understandability, and comparability (CFI, 2022). Furthermore, ACCA (2013:3) mentions that disclosed information should also be measurable using quantifiable data or key performance indicators (KPIs).

The increase in the global population negatively affects the water, food, and energy nexus (Molajou *et al.*, 2021). Consequently, fundamental hereto is the understanding and accounting of the interrelation between food, energy, and waters' interaction with the environment and human wellbeing. Water is part of natural capital, so its impact and dependency must be measured and communicated to businesses and society.

There are various initiatives aiming to support companies' sustainability reporting, including water reporting, through their frameworks and guidelines, for example, the Water Footprint Network, Global Reporting Initiative (GRI), Climate Disclosure Standards Board (CDSB), Carbon Disclosure Project, The Association of Chartered Certified Accountants (ACCA) and King IV. Since companies acknowledge the TBL concept, they tend to separate their sustainability reporting into stand-alone financial (economic) reports, and non-financial corporate social responsibility (CSR) reports that cover social and environmental issues.

As stakeholders demand different information, they question the usefulness of long and complex stand-alone reports (De Villiers *et al.*, 2014). Furthermore, Bernardi and Stark (2018) note that environmental and social activities are presented in silos that are not integrated into the company's primary operations. These limitations have led to the establishment in 2010 of the International Integrated Reporting Council (IIRC) (Eccles & Serefeim, 2011), which task was to investigate the possibility of the replacement of stand-alone reporting with integrated reporting (IR). IR became an alternative to stand-alone reporting, which aims to support integrated thinking and decision-making (Moolman *et al.*, 2016).

With the nexus mentioned above in mind, this paper's focus is on water reporting (disclosure) in the food, beverage, and tobacco industry. McKinsey and Company (2009) indicate that this industry, among others such as mining and pulp and paper industries, is highly exposed to water scarcity due to their heavy dependency on water. The food, beverage and tobacco industry is highly exposed to the CSR issue of water reporting since they have the potential to affect the environment negatively and, in turn, society (Kemp *et al.*, 2010).

Within the context of theories that focus on companies' communication on their CSR disclosures to all stakeholders, the literature and existing water disclosure frameworks were used to develop a new water disclosure index for the food, beverage and tobacco industry. The paper's novelty is that the guiding principles and content elements of IR are pertinently incorporated. This paper also illustrates how inductive, deductive, and abductive reasoning was applied in a single study.

2. Problem Investigated

Although sustainability reporting is rapidly becoming more prevalent and may hold substantial benefits to reporting companies, it is not without limitations. There is, however, an increasing debate over the lack of completeness and credibility of CSR information and its potential benefits to investors and financial stakeholders (Michelon *et al.*, 2015:60).

Some shortcomings arising from the literature pertaining to sustainability reporting, with special reference to water related reporting, are: Considerable diversity in the types of formats increased over the years, and verification also carries considerable costs (Kolk, 2010:373); The various available water accounting frameworks may become internationally incomparable and inconsistent as the accounting standards are not regulated (Chalmers *et al.*, 2012); The CDP's Water Disclosure Program,

which provides guidelines to companies to disclose water information, emphasise the need to accelerate the progress of water performance benchmarks and standardised measures (CDP, 2015); Environmental accounting can be helpful that companies simultaneously create value in core business activities while operating in a cleaner and greener environment (Menike, 2020); Stand-alone reports provide more information, however some information is irrelevant, camouflaging other vital items of disclosure (Michelon *et al.*, 2015:73); The debate on the appropriateness of IR, which was developed to overcome some shortages of traditional stand-alone reporting, is still not solved (Perego *et al.*, 2016); There are imputations that GRI-based reporting may mislead the users thereof since it seems that some unsustainable practices are not reported on (Fonseca *et al.*, 2012); and There is a need for a better-standardised water reporting framework to assist companies to benchmark their operations with competitors' activities (Semmens *et al.*, 2013).

With the above arguments as a base, the question arises of how companies in the food, beverage and tobacco industry can improve their water disclosure. In short, the question is what a contemporary water disclosure index for this industry should look like.

3. Research Objectives

The main objective of this paper is to develop a generic water disclosure index for the food, beverage and tobacco industry. The development occurred in four phases, which are also represented by the following secondary objectives:

1. To conduct a literature review to determine possible constructs and elements (sub-constructs) that should be included in such an index.
2. To inductively develop a preliminary index by refining the above constructs and elements and incorporating additional IR guiding principles and content elements.
3. To deductively test the preliminary index in a sample of companies in the mentioned industry.
4. To abductively investigate best practice water disclosure of the selected companies that may be included in the index.

4. Literature Review

4.1. Theoretical framework

Sustainability reporting has become an increasingly needed and common practice by companies to meet the expectations of various stakeholders. A broad array of stakeholders continually demand that companies provide transparent disclosure on multiple dimensions of their TBL (Maubane *et al.*, 2014:153). To fulfil these expectations and respond to stakeholders' pressures and criticisms, companies have to communicate their business activities and the impact thereof on the environment and society (Akhter & Dey, 2017:62).

The institutional-, legitimacy-, and stakeholder theories are most often used as essential frameworks for social and environmental accounting research (Bhattacharyya, 2014:27). They are generally alike because they share a similar ontological view and are system-orientated theories (Gray *et al.*, 1995:50).

The institutional theory advocates that a variety of external pressures (whether from government, customers, or communities) activate institutions (companies) to respond and disclose required information (Amran & Haniffa, 2011:143). In practice, this implies that society may affect the company over time; however, on the other hand, the company can impact society. For example, a company that uses a shared water source may affect a community, i.e., water that could be utilised by the community. This community may claim benefits from the company, for example, employment in the company.

According to the legitimacy theory, companies justify their core business activities by linking them to their social and sustainability goals (Silva, 2021:1). Therefore, sustainability accounting and reporting are utilised by companies to legitimise their actions (Deegan *et al.*, 2002:319). The legitimacy theory complements the stakeholder theory, which embraces the relationship between a company and its stakeholders. As stakeholders demand social and environmental information, companies are forced to

document and report their sustainable performance (Sisaye, 2021:9). Both theories regard a company as part of its society; the legitimacy theory emphasises the expectations of the community; the stakeholder theory focuses on different groups (Deegan, 2014). To illustrate, the latter is concerned that there are various stakeholders (government, local community, and shareholders), while the former focuses on their expectations. For example, the government will be concerned about compliance with rules and regulations, the local community will be concerned about clean household water, and shareholders about economic profit.

The theories share some related themes, such as the company's interlinked relationship with its stakeholders. The theories addressed above may be broadly similar because all focus on the internal or external pressures on a company to communicate socially responsible disclosures to all stakeholders (Tamimi & Sebastianelli, 2017:1662). This confirms the statement by Gray *et al.* (1995:52) to view all these theories as complementary rather than to recognise them as competing. These theories serve as a conceptual framework for the study that aims to develop a water disclosure index to communicate (report) water issues to stakeholders.

4.2. Integrated reporting

As already mentioned, IR was established to provide an alternative for stand-alone reporting. IR is a tool to create value for its stakeholders, including shareholders, society, and the environment (IIRC, 2013a:1). IR aims to provide insight into the resources used and affected by a company and are referred to as "*capitals*" in the IR framework. A company must explain how it interacts with the external environment and various capitals (IIRC, 2013b:4). Flower (2015:5) criticises IR on the extent to which it addresses sustainability and anticipates that IR will have little effect on corporate practices. However, Adams (2015:25) states that sustainability is not the primary purpose of IR and that many businesses are adopting IR.

IR fundamentally changed how companies report to their stakeholders by supporting integrated thinking and decision-making. The IIRC (2013b) is a source document that provides a list of guiding principles and a list of content elements. Table 1 displays on the left the seven guiding principles of IR, while on the right, an explanation by the authors in a water reporting context is provided. These principles are essential to this study as they may be incorporated into the new water disclosure index.

Table 1: Guiding principles of IR within a water reporting context

Guiding principles of IR	Explanation within water reporting context
Strategic focus and future orientation	The IR should provide information about the company's water strategy, which impacts future operations and water risks.
Connectivity of information	Indicate an overview of the combination, relation, and dependencies between water issues that affect a company's ability to create value.
Stakeholder relationships	Insight into the nature and quality of the company's relationships with its key stakeholders that effect water.
Materiality	Disclose information about water issues that affect a company's ability to create value over the short, medium, and long-term.
Conciseness	Sufficient context to understand the company's water strategy, water governance, and prospects without being burdened by less relevant information.
Reliability and completeness	Including all material water-related matters, both positive and negative, in a balanced way without material error.
Consistency and comparability	Ensure consistency over time and enable comparisons with other companies about to water disclosure.

Source: Adapted from IIRC (2013b:5).

The content elements of IR as suggested by the IIRC (2013b:5) were also reviewed and put in context by the authors with water reporting in Table 2. These content elements were also considered to be incorporated into the new water disclosure index.

Table 2: Content elements of IR within a water reporting context

Content element	Explanation of content element within water context
Overview/ external environment	Indicate the effect of water on the circumstances under which the company operates.
Governance	The company's governance structure on water should support its ability to create value in the short, medium, and long term.
Business model	Provide the company's business model and how it influences water and the water nexus.
Risks and opportunities	Identify the risks and opportunities in water that could affect the company's ability to create value over the short, medium, and long term. Determine the strategy and resource allocation in terms of water risks.
Performance	Indicate whether the company achieved its strategic objectives regarding water for the period.
Outlook	Indicate challenges and uncertainties the company could encounter in pursuing its water strategy, with potential implications for its business model and future performance.

Source: Adapted from IIRC (2013b:5).

4.3 Literature and existing water disclosure frameworks

With the IR guiding principles and content elements in the above section in mind, existing water disclosure frameworks were also investigated, namely (i) GRI 303: water and effluents (GRI, 2017, 2018a, 2018b), (ii) GRI G3 and G4 guidelines (GRI, 2013), (iii) CDP water disclosure framework (CDP, 2015), and (iv) GRI sector guidance for food and beverage processing (GRI 2013). Other relevant literature was also investigated. From the sources, prominent themes were selected to be considered as constructs in the preliminary and improved water disclosure indices. [To avoid confusion, the three main sources to develop the index are named as follows: IR guiding principles and IR content elements; existing water disclosure frameworks that represent the GRI and CDP sources; and other relevant literature.] The selected themes are:

- Governance and management: The board of directors is responsible for establishing appropriate mechanisms to monitor and control the activities of a company and to be accountable and transparent through the disclosure of information (Dias *et al.*, 2017:4).
- Risk assessment: Since 2015, the water crisis has remained one of the top five risks in terms of impact from 2016 to 2018 (World Economic Forum, 2018:1).
- Supply chain: Companies are accountable not only for their operations and processes but also for their suppliers. But on the contrary, Bateman *et al.* (2017:119) state that most companies only report on their own operations and not the entire supply chain.
- Targets and measures: The phrase "*what gets measured, gets managed*" could be applied to address the water issue. This section deals with the quantitative part of water disclosure, as corroborated by ACCA and the GRI, where they distinguish between narrative reporting and KPIs (ACCA, 2013:3; GRI, 2018a:6).
- Site information: By providing consistent information across all sites, companies can show that they are not manipulating their reports by cherry-picking the best stories and report across their operations (Leong *et al.*, 2014:98).
- Materiality: It should be recognised as a guiding principle in financial and non-financial information, and currently, we are in a transitional phase where sustainability reporting is shifting from a voluntary regulation system to a more concrete or rigorous one (Ortar, 2018:20).
- Future-orientated information: Some critics of the GRI stated that it adopts a predominately retrospective approach and that more future-orientated information is needed (Fonseca *et al.*, 2012:74).

The space restriction to this paper only allows a brief description of the selected themes that may be considered to form constructs of the new index. However, Appendix A exhibits a concise summary of the relevant literature, mainly how the existing water disclosure indices were applied to develop a unique index. Note that only the first five of the above themes from the existing frameworks and other

literature appears in Appendix A as constructs. The reason is that existing frameworks were used as the starting point in developing the new index, and the five constructs fit the existing frameworks better. Therefore, the following five constructs appear in Appendix A, 1) government and management approach, 2) risk assessment, 3) interaction with water as a shared resource (supply chain), 4) targets and measures and 5) site information.

The above starting point is consistent with the study of Weber and Hogberg-Saunders (2018). They utilised the GRI as a basis to develop the water risk benchmarking framework applied in their research. Weber and Hogberg-Saunders (2018:967) stated that the GRI is one of the critical sustainability reporting standards, decreasing subjectivity. While adding the previous GRI guidelines, the latest GRI 103 (GRI 2016) and GRI 303 (GRI 2017, 2018a, 2018b), the CDP (CDP, 2015), the GRI sector guidance for food and beverage processing (GRI, 2013), and grounded literature on water reporting were also incorporated. Appendix A also exhibits how the above sources from the guiding principles (Table 1) and content elements (Table 2) of IR were preliminary organised together with the GRI guidelines and CDP water disclosure framework in the process of developing a new water disclosure index. For example, "*materiality*" as a guiding principle of IR was included in the "*governance and management*" construct.

This literature review concludes the first secondary objective, to determine possible constructs and elements that should be included in such an index.

5. Research Methodology

The research process includes three types of reasoning, firstly, induction, followed by deduction, and finally, abduction.

5.1. Inductive reasoning

The second phase was to develop a preliminary index. That was to refine the constructs and elements in Appendix A, by incorporating more IR guiding principles (Table 1) and content elements (Table 2), describing constructs and elements, adding/moving items, and adding detailed quality descriptions to each element.

Inductive reasoning was applied up to this point of the process, as the constructs were allowed to emerge from existing frameworks, related literature, and IR's guiding principles and content elements (Maree, 2021:42). In other words, this study commenced from the "*concrete*", i.e., the existing indices and literature, and moved to the "*general*", i.e., identified constructs and the elements included in those constructs (Joubert, 2017). Note that the "*general*" implies that the identified constructs and elements are only one of many possible outcomes, meaning that different researchers could select other constructs and elements if they were developed a similar index.

5.2. Deductive reasoning

Deductive reasoning is when researchers look for evidence of a priori constructs in data (Maree, 2021:42), meaning reason "*from the general to the particular*." This type of reasoning is usually associated with positivism, implying that an investigation can only lead to a single outcome. Relevant to this study is that there is only a single possible outcome, meaning that different researchers will obtain the same result each time.

Deductive reasoning was applied in the third phase of developing the index, namely to empirically test the preliminary index. The aim was to calculate a water disclosure score for selected companies in the food, beverage and tobacco industry. A three-point assessment scale was adopted, ranging from 0 to 2, to quantify the elements within the constructs. The minimum score of "0" is assigned in case of no disclosure, whereas the maximum, "2" is set when all possible information is disclosed. This scaling process allowed that qualitative and quantitative data could be converted to calculate a comparable water disclosure score for each company.

Data were extracted from 49 companies' annual reports for 2017/2018 which was the latest data available at the time of analysis. There are 13 companies that adhere to the Dow Jones Sustainability Index (DJSI) listing requirements. They were selected to represent the global economies. Australian

and South African companies were also selected as both countries are arid and experiencing extreme water scarcity (Wright, 2018). The 20 largest of the 26 companies from the Australian Security Exchange (ASX), and the 16 available Johannesburg Security Exchange (JSE) companies, were selected. The largest companies based on market capitalisation were selected, similar to a study conducted by Remali *et al.* (2016) that analysed 10 of the largest Malaysian public listed companies by market capitalisation.

Content analysis was conducted to collect data from the 49 companies' IR and stand-alone reports. Content analysis is employed by researchers to make replicable and valid inferences within the conceptual framework of their study (Krippendorff, 2013). This data collection technique was applied by codifying quantitative and qualitative data into the predetermined constructs (Guthrie *et al.*, 2004). A manual coding process was preferred above a computer-aided method as some companies' reports provide extensive information in interactive web pages, which could be challenging to enter into a computer-aided program. Furthermore, as quantitative, and qualitative information was extracted and best practices were identified, careful and in-depth reading was required. To enhance the coding process, a pilot coding of 10% of the sample companies was done together with an experienced colloquium, before the final coding process commenced by the principal author. An independent senior academic with ample experience in environmental accounting repeated the coding process to ensure that critical data was not overseen.

Descriptive statistics (minimum-, maximum-, standard deviation-, and mean value) were used to give meaning to the elements. Furthermore, to determine whether the elements in the preliminary index are sensible, meaning that they belong there, a principal component regression analysis was conducted. This is a data reduction technique to justify the inclusion of each element in the index (Pietersen & Maree, 2021:266). Principal component regression analysis is a variation of factor analysis that attempts to identify the principal component(s) that best explains the constructs, including the elements. Principal component regression analysis analyses a data table represented by several dependent variables that are generally inter-correlated (Abdi & Williams, 2010:433).

As part of the principal component analysis, the Kaiser-Meyer-Olkin (KMO) Measure of Sample Adequacy was conducted. That provides an index ranging from 0 to 1, with 0.50 considered suitable for factor analysis and indicates the proportion of variance in variables that might be caused by underlying factors (Williams *et al.*, 2010:5). Secondly, we did Bartlett's test of sphericity to test if the data is appropriate for factor analysis (Kaiser, 1974:35). Bartlett's test should be significant with a p-value of less than 0.05. Then we did a scree plot to indicate the number of factors, where the line (plot of the eigenvalues) typically forms an apparent bend (elbow). The eigenvalues at the upper end of the "elbow" equal the number of factors (Pietersen & Maree, 2021:265). Finally, the factor loadings for each element were calculated, which should be more than 0.40 to justify its inclusion (Pietersen & Maree, 2021:266).

To measure the internal consistency of a test or scale, Cronbach's alpha coefficient, which is expressed as a number between 0 and 1, could be utilised. It is recommended that Cronbach's alpha coefficient values be above 0.7 to be acceptable (Babin & Zikmond, 2016:281). The Cronbach's alpha scores were calculated for the entire index and for each construct.

5.3. Abductive reasoning

Eriksson and Lindström (1997) explain that abductive reasoning is a fundamental idea to recognise and create a context of meaning and interpret underlying trends and patterns. Mantere and Ketokivi (2013) add that this is used to draw theoretical conclusions from empirical data. To further enhance the preliminary developed index, abductive reasoning was applied by adding additional information found in the literature. The literature, including IR guiding principles and content elements, existing water disclosure indices, and other sources, were used to develop the preliminary index inductively. At this point, the fourth phase of developing the index commenced, i.e., the researchers went back to the literature, namely the IR and stand-alone reports of the 49 selected companies, to extract further data that can be added to enhance the preliminary index into an improved index. This data extraction

coincided when the above-mentioned qualitative and quantitative data was collected from the company reports to test the index empirically. During the data collection, some practices by the companies were spotted that stood out what can be labelled as "*best practices*" in this industry's water disclosure.

6. Results and Findings

6.1. Developing a preliminary index

The second secondary objective was reached with Appendix A as the basis. That was to develop a preliminary index, where additional IR guiding principles and content elements were added, constructs were added and regrouped, elements were moved around, and detailed quality descriptions were added to each element. A preliminary index, similar to Appendix B was developed. The difference between the preliminary index and Appendix B is that the latter includes some best practices found in the fourth phase of the development. Table 3 exhibits a summary of the preliminary index. To enhance the readability, the elements were rewritten in Table 3 into concise quality descriptions.

The index in Table 3 includes the five constructs selected in Appendix A, governance and management approach, water-related impacts in its supply chain, targets and measures, site-specific information, and risk assessments. Two constructs were added in Table 3, materiality, and future-orientated information. Twenty-seven elements were included under those seven constructs.

The construct, and elements included in it, "*targets and measures*" consist primarily of information in existing water disclosure indices. The "*supply chain*" as a construct is primarily developed from existing indices and other literature, while "*site information*" is mainly developed from other literature. The constructs and their elements, "*governance*", "*risk assessment*" and "*materiality*", are developed from existing indices, other sources, and IR's guiding principles and content elements (Tables 1 and 2). Also note for example, G3 that require from companies to include water related aspects in their *business plan*, is a direct derive from one of the IR content elements in Table 2. The new construct "*future orientated information*" is directly derived from the IR guiding principles in Table 1.

6.2. Testing the preliminary index

The third secondary objective was to test this index on the sample of companies. Data were collected from all 49 companies to attach a value between "0" and "2" to all 27 elements. The assessment scale (ordinal scale) enabled the index to provide the disclosure quality. It is worthy to note that a quality assessment scale applicable to each element in the water disclosure index was developed to enhance the accuracy of coding every item. In all cases, the minimum score was zero and the maximum score two, implying that each element's mean score lies between "0" and "2". The scores were converted into percentages. Table 3 shows the descriptive statistics for the 27 elements, i.e., the standard deviation and mean percentage. The element with the highest mean score is RA1, the first element in the "*risk assessment*" construct, "*disclosure of physical water risk*", with a score of 69.39%. The lowest mean score is SI1, the first element in the "*site information*" construct, "*water-related information for each facility*", with 17.35%.

In developing the index, the question arises of what weight should be attached to each construct, and elements within such a construct. Therefore, a principal component regression analysis was conducted. The KMO Measure of Sample Adequacy estimate was 0.806, well above the cut-off point of 0.5. The Bartlett's Test of Sphericity yielded an Approximate Chi-Square estimate of 1173, which was significant at $p = 0.000$, well below 0.05. A scree plot indicated that only one factor is necessary to summarise the index. This factor is appropriate as it explains more than half of the total variance, i.e., 52.72%. The factor loading for each element is indicated in Table 3. The factor loadings are all above 0.4 and range between 0.513 and 0.846. The element with the highest factor loading is G5, "*the company has water-related policies*" (0.846), followed by RA5, "*stakeholders identified in water assessment risk*" (0.843), and G1, "*environmental management system (EMS) in place and developed water strategy*" (0.841). Finally, the Cronbach's alpha coefficient for the entire water disclosure index consisting of all 27 elements was 0.964, indicating good internal consistency reliability as this is well above 0.7. A Cronbach's alpha coefficient was also calculated for each of the seven constructs to

ensure that the elements included in it belong together. Values were all above 0.7 and ranged between 0.754 and 0.930.

Table 3: Preliminary water disclosure index

Construct: Sub-theme or element		Factor loading	SD	Mean %
Materiality	M1: Identify water as a material aspect.	0.759	44.49	50.00
	M2: Describe the process and identify stakeholders.	0.694	44.49	42.86
Governance and management approach	G1: Environmental management system (EMS) in place.	0.841	42.91	59.18
	G2: Understands the context in which it operates.	0.750	35.92	66.33
	G3: Includes water-related aspects in the business model.	0.712	39.80	34.69
	G4: Indicates board-level oversight for water.	0.759	40.41	40.82
	G5: The company has water-related policies etc.	0.846	39.50	60.21
Supply chain information	SC1: Identify suppliers causing water-related impacts.	0.611	28.98	27.55
	SC2: Policy to manage water-related aspects in SC.	0.756	39.10	40.82
	SC3: Identifies water risk factors in SC.	0.754	41.44	48.98
	SC4: Understands role players in SC (nexus).	0.743	37.68	43.88
Targets and measures	TM1: Total water withdrawal per source.	0.787	41.62	43.88
	TM2: Total water discharged.	0.716	42.76	32.65
	TM3: Disclosure of water quality.	0.676	40.82	42.86
	TM4: Total water consumption.	0.544	44.46	39.80
	TM5: Volume of water recycled and reused.	0.513	43.96	32.65
Site information	SI1: Water-related information for each facility.	0.572	26.12	17.35
	SI2: Water risk assessments at a geographical scale.	0.663	34.04	25.51
Risk assessment	RA1: Disclosure of physical water risk.	0.745	36.54	69.39
	RA2: Disclosure of regulatory water risk.	0.612	37.37	53.06
	RA3: Disclosure of reputational water risk.	0.731	38.19	35.71
	RA4: Procedures & methods of water risk assessment.	0.822	39.47	47.96
	RA5: Stakeholders identified in water risk assessment.	0.843	40.35	43.88
Future-orientated information	FO1: Reports on future-orientated water information.	0.820	38.66	58.16
	FO2: Identified a long-term water strategy.	0.812	37.34	33.67
	FO3: Information on which could affect value creation.	0.696	30.83	24.49
	FO4: How does water risk assessment affect future growth.	0.693	36.94	26.53

Source: Own compilation

6.3. Investigating best practices from selected companies

The fourth phase in developing the index was to detect some best practices from the analysis that can be incorporated to improve the preliminary water disclosure index. As a result of space restriction, only two items identified in the company reports – baseline year and efficiency ratios – will be discussed.

Providing a baseline year in a water disclosure index gives more interpretation perspectives to the reader. Many reporting organisations utilised their quantified water information under the targets and measures construct (TM1 – TM5) as a basis to provide future-orientated disclosures in terms of water. For instance, Nestlé (2017:80) aspires to reduce direct water withdrawals per ton of product in every category to achieve an overall reduction of 35% by 2020 – against an achieved reduction in water withdrawals of 28.7% per ton of product since the baseline year of 2010. Correspondingly, the Oceana Group (2018:44) set a September 2020 target of 44% absolute reduction in potable water consumption, and British American Tobacco (2017:27) aims to reduce water use to 3.17 m³ of water per million cigarettes equivalent produced by 2025 – 35% lower against their 2007 baseline. The baseline year was added to the index in the "*targets and measures*" construct as TM6, which would provide stakeholders with comparable information to a baseline year.

The above reference to British American Tobacco (2017:35) illustrates where the 3.17 m³ of water is relative to one million cigarettes. Distell (2018:48) reported usage of 3.33 litres compared to 4.94 litres used by Diageo (2018:8). Considering that both companies operate in the alcoholic beverage industry, the expression of water efficiency ratios could provide valuable and comparable information to stakeholders. The companies disclosing water efficiency ratios are utilising their measurements from total water withdrawal (TM1), to calculate an efficiency ratio in terms of water used per kilogram of the finished product or litre of the packaged product. For example, ThaiBev (2018:94) listed on the DJSI divided their water intensity ratios per product line – to advance comparability. The water efficiency ratio was added as an element in the "*targets and measures*" construct as TM7.

7. Developing an improved water disclosure index

The study's main objective was to develop a water disclosure index for the food, beverage and tobacco industry. Appendix B exhibits the improved index, reaching the four mentioned secondary objectives (phases). The index includes the same seven constructs as in Table 3, materiality, governance, water-related impact on its supply chain, targets and measures, site information, risk assessment, and future-orientated information. After the inclusion of TM6 and TM7, the seven constructs consist of 29 elements. Appendix B provides on the left-hand side a quality description of each element and on the right-hand side some guidance that a company may follow to achieve the element's disclosure.

The factor loadings in the preliminary index with seven constructs and 27 elements ranging between 0.513 – 0.846 was an important indication that all elements load sufficiently onto one factor, implying that the index can be constructed. The improved water disclosure index included two new elements (TM6 and TM7) observed from best practices in the empirical analysis, which would provide stakeholders with additional information to compare companies in the same industry. The improved water disclosure index could be used in another empirical analysis to test whether the elements TM6 and TM7 sufficiently load onto one factor. Including companies from the DJSI in the empirical analysis compared best practices in sustainability reporting to be included in the improved water disclosure index.

8. Managerial implications

The preliminary water disclosure index inductively developed from the literature, the deductively empirical testing thereof, and the abductively return to the literature to find some best practices all contributed to the development of an improved water disclosure index for the food, beverage and tobacco industry.

The practical managerial implications of this index are that it accounted for the integrated nature of water disclosures in the food, beverage and tobacco industry. Consequently, the improved water disclosure index could be applied by companies in the food, beverage and tobacco industry – regardless of whether or not a company is implementing IR. Currently, various water accounting frameworks are available, leaving companies to decide what to measure and report, which could result in non-monitoring of fundamental water activities and incomparability of reports. Implementing the developed water disclosure index would allow the reporting company to combine essential water-related aspects into a holistic, concise, and comparable report. This would provide key stakeholders with forward-looking and strategic water-related information incorporated into the business model to deal with the challenges from the external environment.

9. Conclusion

In the context of theories that focus on companies' communication on their CSR disclosures to all stakeholders, the research question of what a contemporary water disclosure index for the food, beverage and tobacco industry should look like was answered by reaching four secondary objectives built-up to achieving the main objective. The main objective has been reached by developing the improved water disclosure index as presented in Appendix B.

An inductive approach was followed where the literature and existing water disclosure frameworks were used to develop a new index. However, the novelty of this study is that the guiding principles and content elements of IR were incorporated into the new index. A deductive approach was followed to test the index empirically, and all the statistical measures indicated this index's efficacy, namely the KMO Measure of Sample Adequacy and Bartlett's Test of Sphericity. Furthermore, the loadings of the principal component regression analysis and Cronbach's alpha coefficients all confirmed the suitability of the elements included in the index. An abductive approach was followed to further improve the index by incorporating some best practices found in the reports of the selected sample companies.

The practical value (linked to the managerial implications) is summarised that through the methodological process of applying the three reasoning approaches and the integrative approach followed, an improved water disclosure index is made available to companies in the food, beverage and tobacco industry. The purpose of the paper was not to consult stakeholders but to provide key stakeholders with a water disclosure index that all companies could use to report on water. Noticeable concepts such as materiality, governance, risk assessments and future-orientated information included in the index would provide stakeholders with concise, comparable and forward-looking information on a company's water-related practices. The study also contributed to the theory, i.e., the institutional-, legitimacy-, and stakeholder theories were relevant as this study provides an enhanced manner of how companies can communicate their CSR responsibility of water disclosure to all stakeholders.

As with all studies, this research is not without limitations. Consequently, the results, conclusions, recommendations, and contributions of the study, need to be considered in light of the following limitations. Firstly, it is recognised that the constructs and elements included in the water disclosure index were compiled from multiple literature sources, applicable to different industries and that some could be omitted. Secondly, applying content analysis as a research design will always involve individual judgments by coders. Thirdly, the associations and relationships from the sample cannot be generalised – which was not the study's intention. Areas for future research include extending the study to other industries and to other countries allowing for cross industry- and country comparisons.

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Appendix A: Existing indices and literature review

The previous GRI (EN 8, EN 9 & EN 10)	The latest GRI (GRI 303) water and effluents, 2018	CDP, GRI sector guidance, and literature studies
Governance and management approach		
<p>Materiality Does the company identify water as a material aspect?</p> <p>Environmental management system (EMS) Establish whether the company has EMS for water-related issues by identifying the following:</p> <ul style="list-style-type: none"> Does the company have indications of improving operational water systems by applying internal measures? Does the company indicate that it understands the context in which it operates in terms of water stress, flooding, water quality, and regulatory uncertainty? Has the company developed its own water strategy? <p>Governance Establish the awareness of governance aspects for water by identifying the following: Does the company have a director or senior staff member responsible for water disclosure programs? Does the company have a water-related policy / policies?</p>	<p>Disclosure 103-1: Explanation of the material topic and its boundary An explanation of why the issue is material. The explanation of why the issue is material can include:</p> <ul style="list-style-type: none"> A description of the significant impacts identified and stakeholders' reasonable expectations and interests regarding the topic. A description of the process, and impacts related, such as due diligence, that the organisation used to identify the topic. <p>The boundary for the material topic, which includes a description of:</p> <ul style="list-style-type: none"> Where the impacts occur; The organisation's involvement with the effects. <p>Any specific limitations regarding the topic boundary.</p> <p>Disclosure 103-2: Management approach and its components An explanation of how the organisation manages the topic. A statement of the purpose of the management approach. A description of the management approach includes policies, commitments, goals and targets, responsibilities, resources, grievance mechanisms, or specific actions (i.e., processes, projects, programs, and initiatives).</p>	<p>Detrimental impact Has your organisation experienced any detrimental water-related impacts? Describe the water-related detrimental impacts experienced by your organisation, your response, and the total financial impact.</p> <p>Risks and opportunities: Risk exposure How does your organisation define substantive financial or strategic impact on your business? Water-related risks and response. Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.</p> <p>Business strategy: Value creation The inclusion of water issues as part of the company's business model was evident in the study by Sánchez-Hernández <i>et al.</i> (2017:845), and such inclusion could be considered one of the best practices. Robust governance management systems are required to manage water; consequently, water governance in the boardroom is essential. Companies with board-level oversight of water issues are reaping the rewards, including market differentiation, shareholder</p>

		<p>confidence, and business. Across all your operations, what proportion of the following water aspects are regularly measured and monitored?</p>
Risk assessment		
<p>Risk assessment Establish whether the company has risk assessment actions for water-related issues by identifying the following:</p> <ul style="list-style-type: none"> • Has the company identified physical risks such as flooding, water stress, and pollution? • Has the company identified regulatory risks such as water permits, water controlling rates, water withdrawal, discharge quantities and other restrictions? • Has the company identified reputational risks such as tensions between businesses and local communities or businesses and other supply chain members? 	<p>Disclosure 103-3 Evaluation of the management approach: An explanation of how the organisation evaluates the management approach, including:</p> <ul style="list-style-type: none"> • The mechanisms for assessing the effectiveness of the management approach; • The results of the evaluation of the management approach; • Any related adjustments to the management approach. 	<p>Business impacts Recent impacts on your business. Describe the water-related detrimental impacts experienced by your organisation, your response, and the total financial impact.</p> <p>Procedures Risk identification and assessment procedures.</p> <ul style="list-style-type: none"> • Does your organisation undertake a water-related risk assessment? • Select the options that best describe your procedures for identifying and assessing water-related risks. • Which contextual issues are considered in your organisation’s water-related risk assessments? • Which stakeholders are considered in your organisation’s water-related risk assessments?
Interaction with water as a shared resource (supply chain)		
<p>Water sources significantly affected by the withdrawal of water (EN 9) Does the company report on the total number of water sources significantly affected by the withdrawal of water, taking the following into account?</p> <ul style="list-style-type: none"> • Size of water source in cubic metres (m³); • Whether the source is designated as a protected area (national/international); • Biodiversity value (i.e., species diversity and endemism, number of protected species); and <p>Value or importance of water source to local communities and indigenous people.</p>	<p>Disclosure 303-1: Interaction with water as a shared resource A description of how the organisation interacts with water, including how and where water is withdrawn, consumed, and discharged, and the water-related impacts caused or contributed to, or directly linked to the organisation’s activities, products, or services by a business relationship (e.g., effects caused by runoff). Extract: The description of how the organisation interacts with water can include [...] information on what the water is used for in direct operations and elsewhere in the value chain (e.g., for cooling, storage, incorporating in products, growing crops). A description of the approach used to identify water-related impacts, including the scope of assessments, timeframe, and tools or methods. Extract: When assessing impacts, the organisation must consider its future impacts on water quality and availability, as these factors can change over time. A description of how water-related</p>	<p>Supply chain and risk Refer to the “procedures” above that address water related risks assessment. The concern here is findings by the Ceres investor coalition, the financial services firm UBS, and financial data provider Bloomberg, which issued a report that found that many of the 100 publicly traded companies do not include data on water risks, and none of them provided data on water usage or risk for their supply chains (Wilburn & Wilburn, 2013:64). Inequalities such as nutrition, health, sanitation, and security are at the heart of the nexus, and companies play a vital role in ensuring that supply chains are dynamic and able to provide food, energy, and water (Whiteman <i>et al.</i>, 2013:317). By managing their activities, they can ensure that environmental targets and policies are integrated upstream (suppliers) and downstream to the consumer.</p>

	<p>impacts are addressed, including how the organisation works with stakeholders to steward water as a shared resource, and how it engages with suppliers or customers with significant water-related impacts.</p> <p>An explanation of the process for setting any water-related goals and targets that are part of the organisation's management approach, and how they relate to public policy and the local context of each area with water stress.</p> <p>Extract: Meaningful targets for managing water-related impacts:</p> <ul style="list-style-type: none"> • Account for the local context where water is withdrawn and discharged; • Are scientifically informed by sustainable thresholds and the social context of a catchment; • Align with public sector efforts (i.e., the water-related targets of the UN Sustainable Development Goals, in particular, Goal 6); • Are informed by the advocacy of stakeholders (i.e. civil society organisations, trade associations, and action groups). <p>An overview of water use across the organisation's value chain.</p> <p>A list of catchments where the organisation causes significant water-related impacts.</p>	<p>Value chain engagement</p> <p>Do you engage with your value chain on water-related issues?</p> <p>What proportion of suppliers do you request to report on their water use, risks, and/or management information, and what proportion of your procurement spend does this represent?</p> <p>Provide details of any other water-related supplier engagement activity.</p> <p>Bateman <i>et al.</i> (2017:119) state that most companies only report on their operations, not the entire supply chain.</p>
Targets and measures		
<p>Percentage and total volume of water recycled and reused (EN 10)</p> <p>Does the company report on the total volume of water recycled and reused by the organisation in cubic metres per year (m³/year)?</p> <p>Does the company report the total volume of water recycled and reused by the organisation in cubic metres per year (m³/year) as a percentage of the total water withdrawal reported under Indicator G4 – EN 8.</p>	<p>Disclosure 303-4: Water discharge</p> <p>Total water discharge to all areas in mega litres (ML), and a breakdown of this total by the following types of destination, if applicable: (a) surface water; (b) groundwater; (c) seawater; (d) third-party water, and the volume of this total sent for use to other organisations, if applicable.</p> <p>Extract: Third-party water discharge is when an organisation sends water and effluents to other organisations for use. The volume of this water discharge must be reported separately.</p> <p>Priority substances of concern for which discharges are treated: Number of incidents of non-compliance with discharge limits.</p> <p>Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.</p> <p>The number of occasions on which discharge limits were exceeded.</p> <p>Disclosure 303-5: Water consumption</p>	<p>Company-wide water accounting</p> <p>What are the total volumes of water withdrawn, discharged, and consumed across all your operations, and how do these volumes compare to the previous reporting year?</p> <p>Provide total water discharge data by destination:</p> <ul style="list-style-type: none"> • Fresh surface water • Brackish surface water/seawater • Groundwater • Third-party destinations <p>Business impacts/compliance impacts</p> <p>Was your organisation subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations in the reporting year?</p> <p>Provide the total number and financial value of all water-related fines.</p> <p>Provide details for all significant fines, enforcement orders, and/or other penalties for water-related</p>

	<p>Total water consumption from all areas in ML.</p> <p>Extract: If the reporting organisation cannot directly measure water consumption, it can be calculated with: Water consumption = Total water withdrawal – Total water discharge.</p> <p>Any contextual information necessary to understand how the data have been compiled.</p> <p>Total water consumption in ML at each facility.</p>	<p>regulatory violations in the reporting year and your plans for resolving them.</p>
Site information		
		<p>Facility-level water accounting</p> <p>For each facility referenced, provide coordinates, total water accounting data, and comparisons with the previous reporting year.</p> <p>By providing consistent information across all sites, Leong <i>et al.</i> (2014:98) argued that companies can show that they are not manipulating their reports.</p> <p>Fonseca <i>et al.</i> (2012:70) contested the effectiveness of the GRI framework by arguing that GRI-based reports could mislead decision-makers because unsustain-able practices, particularly at a site level, are not reported on.</p> <p>Given the differences in firm's types and activities, fluidity and flexibility should be built into the guidelines and standards of IR. This refers to the fact that industry-based or site-level-based metrics should be considered (Dumay <i>et al.</i>, 2016:179).</p>

Appendix B: Improved water disclosure index for the food, beverage and tobacco industry

Elements	Guidance
Materiality (M)	
M1: Identify water as a material aspect, and describe significant impacts associated with water – specific to the company.	The company identifies water as a material aspect describes the impacts associated.
M2: Describe the process of identifying water as material, and identify the stakeholders affected and included in the process.	The company describes the process and identifies all the relevant stakeholders affected.
Governance (G)	
G1: Indicate the environmental management system (EMS) and develop an own water strategy.	The company should have EMS incorporated into its water strategy.
G2: Disclose the context within which the firm operates regarding water stress, flooding, water quality, and regulatory uncertainty.	Provide an understanding of the context and details, such as flooding, water quality, and regulatory uncertainty.
G3: Include water-related aspects as part of the firm’s business model.	Water should form part of the firm’s business model, which would assist in formulating the water strategy.
G4: A senior director or senior staff member should be responsible for water governance (board oversight).	Board oversight of water governance should be very clearly embedded in the organisational structure. Established awareness of governance structure of water-related issues.
G5: Water-related policies, commitments, goals and targets, responsibilities, resources, grievance mechanisms, and specific actions, such as processes, projects, programs, and initiatives, should be disclosed.	Detailed information about policies, commitments, resources, projects, programs, and initiatives within the context of water governance should be disclosed.
Water-related impact on its supply chain (SC)	
SC1: Identify suppliers causing significant water-related impacts.	Water withdrawal and discharge figures should identify and quantify significant water-related impacts caused by suppliers.
SC2: Develop a policy and strategy to manage water-related aspects in the supply chain.	The company should have policies and strategies to manage water-related aspects in its supply chain.
SC3: Identify water risk factors in the supply chain.	The company should identify water risk factors in their supply chain by conducting water risk assessments at suppliers or seeking information from suppliers.
SC4: Display an understanding of the WEF nexus by considering the water impact of the upstream and downstream role players in the supply chain.	The company indicates that they understand the WEF nexus by identifying role players and their effect on water in the supply chain.
Targets and measures (TM)	
<p>Total water withdrawal by source</p> <p>TM1: Disclose total water withdrawal from all areas in mega litres (ML) and provide a breakdown of this total by the following sources, if applicable: (a) surface water (includes collected or harvested rainwater); (b) groundwater; (c) seawater; (d) produced water; (e) third-party water.</p> <p>Total water withdrawal from all areas with water stress in ML, and a breakdown of this total by the following sources, if applicable: (a) surface water; (b) groundwater; (c) seawater; (d) produced water; (e) third-party water, and a breakdown of this total by the withdrawal sources listed in a-d. (When compiling the information specified above, the reporting organisation shall use publicly available and credible tools and methodologies for assessing water stress</p>	The company should disclose total water withdrawal, quantifying each source.

<p>in an area).</p> <p>A breakdown of total water withdrawal from each of the sources listed in Disclosures 303-3-a and 303- 3-b in ML by the following categories: (a) freshwater ($\leq 1,000$ mg/L Total Dissolved Solids); (b) other water ($> 1,000$ mg/L Total Dissolved Solids). (Other water constitutes that has a concentration of total dissolved solids higher than 1,000 mg/L. Therefore, other water is all that does not fall into the freshwater category.)</p> <p>Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.</p>	
<p>Water discharge</p> <p>TM2: Disclose total water discharge to all areas in ML and provide a breakdown of this total by the following types of destination, if applicable: (a) surface water; (b) groundwater; (c) seawater; (d) third-party water, and the volume of this total sent for use to other organisations, if applicable. (An example of third-party water discharge is when an organisation sends water and effluents to other organisations for use. In these instances, the organisation is required to report the volume of this water discharge separately.)</p> <p>Priority substances of concern for which discharges are treated, including the number of incidents of non-compliance with discharge limits.</p> <p>Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.</p> <p>The number of occasions on which discharge limits were exceeded. Any fines received or to be paid.</p>	<p>The company should disclose total water discharge, quantifying each source.</p>
<p>TM3: Disclose information on water quality.</p>	<p>Provide detail on water quality which could affect food and beverage products.</p>
<p>Water consumption</p> <p>TM4: Disclose total water consumption from all areas in ML. (If the reporting organisation cannot directly measure water consumption, it may calculate this using the following formula: Water consumption = Total water withdrawal – Total water discharge).</p> <p>Any contextual information necessary to understand how data have been compiled, such as any standards, methodologies, and assumptions used, including whether the information is calculated, estimated, modelled, or sourced from direct measurements, and the approach taken for this, such as the use of any sector-specific factors.</p>	<p>The company should disclose total water consumption (quantity) with contextual information.</p>
<p>Percentage and total volume of water recycled and reused</p> <p>TM5: Disclose the total volume of water recycled and reused in m³/year as a percentage of the total water withdrawal reported.</p>	<p>The company should disclose the total water recycled and reused (quantify and percentage of total withdrawal).</p>
<p>TM6: Baseline year</p> <p>Set and disclose a baseline year of total water withdrawal, water discharge, water reused, and water efficiency ratios against which comparisons should be disclosed from one year to the next.</p>	<p>Disclosure of different timeframes and comparisons with a baseline year would assist in progressing towards more water-efficient operations.</p>
<p>TM7: Water efficiency ratio</p> <p>Calculate water efficiency ratios in terms of input (water consumption in ML) divided by output (kilograms of finished product or litres of packaged product).</p>	<p>Firms should calculate and express their water consumption in an efficiency ratio, and compare this to a set baseline year (as discussed above) to determine whether progress is made toward more water-efficient operations. These ratios could be</p>

	utilised to compare with other firms.
Site information (SI)	
SI1: For each facility, provide coordinates, total water accounting data, and comparisons with the previous reporting year (or baseline year).	Detail should be presented at each site, such as coordinates and comparisons with the previous year.
SI2: Disclose water risk assessments at a geographical scale (each site).	The company should disclose detailed water risk assessments at each site with quantified information.
Risk assessment (RA)	
Establish whether the company has risk assessment actions for water-related issues by identifying the following: RA1: Identify physical water risks such as flooding, water stress, and pollution.	Provide detail on physical water risks.
RA2: Identify regulatory risks such as water permits, rates controlling water withdrawal, discharge quantities, and other restrictions.	Provide detail on regulatory water risks.
RA3: Identify reputational risks such as tensions between businesses and local communities.	Provide detail on reputational water risks.
RA4: Indicate the procedures and methods for water risk assessments .	The company should disclose procedures and methods used for their water risk assessments and the frequency thereof.
RA5: Identify stakeholders which are considered in their organisation's water-related risk assessments .	The company should disclose stakeholders considered in their water risk assessments and indicate contextual issues (positive and negative information) which could affect the stakeholders.
Future orientated information (FO)	
FO1: Report on future-orientated information on water issues.	The company should disclose quantitative, future-orientated information.
FO2: Identify the need for a long-term water strategy and disclose the long-term strategy.	The company should disclose a long-term water strategy.
FO3: Provide information on water that could affect value creation over the short, medium, and long term.	The company should disclose future information on water which could affect value creation in the short, medium, and long term.
FO4: Evaluate how water risk assessments could affect future success and growth strategy.	The company should disclose evaluations on how water risk assessments could affect future success and growth strategy.

Using SPACs To Stimulate The South African Second Economy: A PE Value Creation Principles Perspective

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Keywords

Private equity, SPAC, venture capital, growth equity, second economy, South Africa

Abstract

Purpose – The purpose of this study is to propose a special purpose acquisition company (SPAC) as a possible vehicle for promoting re-industrialisation through small and medium-sized enterprises (SMEs) based on the private equity (PE) value creation principles from Southern African Venture Capital and Private Equity Association (SAVCA) and the processes of funding from the Industrial Development Corporation (IDC). In this regard, the specific objective of this work is to propose the SPAC based on the principles observed from SAVCA and the IDC processes.

Design/methodology/approach – This is an exploratory qualitative study which reviewed the existing IDC processes and SAVCA PE value creation principles in order to inform the mechanics of the functioning of the SPAC.

Findings – It was observed that it is possible to use the SPAC as a vehicle for promoting re-industrialisation through SMEs. Further, it was determined that it is also possible for the SPAC to take on the characteristics of the principles of PE value creation and to adopt some of the IDC processes.

Originality/value – The originality of this work emanates from the observation that in the South African context, SPACs, as envisaged will not be used solely for the purpose of financing SMEs through debt, it will also include an element of management skills transfer, as well as an element of taking on an equity ownership stake. The authors are of the view that the SPAC would be a mechanism to operationalize the social compact that is a fundamental approach of a developmental state.

1. Background and introduction

In South Africa, small and medium-sized enterprises (SMEs) are critical to the economy and job creation. It is estimated that SMEs make up around 91% of formalized businesses, provide employment to about 60% of the labour force, and account for about 34% of gross domestic product (GDP) (Marx, Haji, Botha, Madikizela and Madiba, 2021) . The South African government has identified the SME sector as one of the potential enablers to achieve its objectives of improving job creation opportunities, reducing poverty, and creating a more equitable distribution of wealth (Peters & Naicker, 2013) . Further, and according to the Banking Association of South Africa (2019), the development of the SME sector in South Africa has the potential to not only erode unemployment but also contribute to economic growth.

The development and growth of SMEs can contribute to turning around an economic situation(Lekhanya, 2015). However, the majority of small and medium businesses struggle to secure capital for growth and expansion due to stringent requirements. SMEs are the most vulnerable group of entities due to a lack of resources to survive a crisis, they struggle to secure adequate funding to grow and become sustainable (Gourinchas, Kalemlı-Ozcan, Penciakova & Sander, 2021; Sesep, 2016). Fatoki (2011) states the importance of funding for the growth of SMEs and how lack of finance contributes to the failure of SMEs.

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Currently, the South African economy is at one of its lowest points in several decades, with low economic growth, coronavirus challenges, and unemployment being at an all-time high (Marx *et al.*, 2021). According to Govinden, Pillay & Ngobeni (2020), 38.2% of businesses that applied for financial assistance during COVID reported having used government relief schemes, and a further, 28.3% indicated that their workforce had decreased and 19.6% had laid off their staff. The Covid 19 pandemic crisis has negatively impacted the sustainability of SMEs by inhibiting their expansion, worsening their financial situation, and ultimately contributing to their insolvency and bankruptcy (Gourinchas *et al.*, 2021).

It appears that with the many challenges the economy faces currently, public sector programmes to stimulate sustainable growth of the SME sector are struggling. The national strategy for the development and promotion of small businesses in South Africa has as its primary objective the creation of an enabling environment for small enterprises (Department of Trade and Industry, 1995). In creating the enabling environment, the national framework is required to be complemented with programmes developed and implemented at a regional and local level. As small enterprises do not in themselves constitute an economic sector all on its own, policies need to be in tune with national and regional, and sectoral developments.

According to Peters & Naicker (2013), considerable emphasis was placed on developmental local government, increasing the role of government, particularly local agencies, in promoting growth and development. The Industrial Development Corporation (IDC) is a development finance institution that is a state-owned agency tasked with promoting growth and development in line with the national strategy for the development and promotion of small business. However, the IDC may have not achieved its mandate, which is “to maximise our development impact through job-rich industrialisation” (IDC, 2021) to a significant extent since “despite the economic recovery in 2021, the South African economy remains with extremely high unemployment levels and with many companies remaining in a difficult financial position” (Department of Research and Information, 2022).

The DTI (1995) stipulates that the SA government’s role is one of facilitator as opposed to an implementer. The engagement with the government through public-private partnerships, together with effective risk management strategies, is crucial in stabilizing policies that would ensure adequate funding to support the SME sector (Ramcharran, 2017). With this in mind and the fact that public sector programmes to stimulate sustainable growth of the SME sector are struggling, the authors are of the view that the proposition to use SPAC as a vehicle for promoting re-industrialisation through SMEs would be a mechanism to stimulate sustainable growth of the SME sector.

As discussed above, SMEs are the most vulnerable group of entities due to a lack of resources to survive a crisis. This lack, according to The Banking Association of South Africa (2019), includes but is not limited to the lack of management skills and finance, obtaining credit and access to markets, administrative burdens, and regulatory compliance. A SPAC might be a solution to address these constraints faced by SMEs with a specific sectoral focus (Marx *et al.*, 2021). Further, in addressing the lack of management skills and finance of SMEs, the SPAC uses private equity value creation principles in financing and investing in the SME sector.

Accordingly, this study has reviewed relevant literature and benchmarked with IDC and SAVCA to determine the possibility of the stimulation of the South African second economy (SME growth and sustainability) through the adoption of the SPACs re-industrialisation proposal.

2. Literature review

Promoting the SME sector to create an enabling environment by reducing unemployment and creating a more equitable distribution of wealth is the overall ambition of government support initiatives in South Africa (Peters & Naicker, 2013). The most common problems facing SMEs include an unfavourable legal environment, lack of access to markets and procurement, lack of access to finance

and credit, low skills levels, lack of access to information, and lastly, a shortage of effective supportive institutions (Republic of South Africa, 1996). Government support initiatives are envisaged by the authors to have to ultimately lead to sustainable job creation and increased turnover leading to growth and sustainability for the SME sector.

Since the purpose of this study is to propose a SPAC as a possible vehicle for promoting re-industrialisation through SMEs based on the PE value creation principles, the selection below presents the literature review.

2.1 Special Purpose Acquisition Company

Defining a SPAC

According to Riemer (2007), SPACs are in essence public-traded buyout firms that are incorporated with the sole objective of raising funds for acquisition through a public offering of their securities. Kolb & Tykvova (2016) describe SPACs as cash shells that try to buy private operating firms to which they confer public-listing status. According to Murray (2017), SPACs are shell companies that originally have no operations and which are created to undertake a business combination with an operating business. SPACs do not have operations or a business plan other than the intent to acquire an unidentified business (Thompson, 2010).

A SPAC is an innovative financial structure that raises funds in capital markets through the IPO process with the objective of acquiring an unknown existing company within a limited time period (Yochanan & Milos, 2018). Therefore, a SPAC is an alternative to the initial public offering. The difference between an IPO and a SPAC is that a SPAC can raise funds without any operational assets and funds are kept in escrow during the period before an acquisition or listing and are refunded when there is an exit (Jooste, 2019). SPACs are an opportunity for private venture capitalists to make private equity investments (Yochanan & Milos, 2018). The major stakeholders in SPAC are management, underwriters, and investors.

2.2 SME sector challenges

It is common knowledge that SMEs struggle in obtaining loans from banks. The struggle related to the credit application requirements may be linked to the financial health or the balance sheet of the business. Yoshino, Taghizadeh-Hesary, Charoensivakorn, & Niraula (2015) state that SMEs usually have severe difficulties with raising money. Lekhanya (2015) states that the most significant difficulties faced by SMEs include access to finance.

Traditionally SMEs engage with a bank for most of its financial requirements necessary for business operations. As a result, a bank would provide financial and advisory services to small, medium, and large businesses. The financial services which are typically tailored to the specific needs of the business generally include credit cards, transactional banking, savings, asset financing, and loans. Bank loans are the main sources of financing for the SME sector of an economy (Ramcharran, 2017). A risk of the economy stagnating and not prospering is introduced (Cant & Wiid, 2013) when there is a lack of funding to create new SMEs and sustain the existing ones. It is from this background that the researchers are exploring strategies such as SPACs to diversify the SME financing environment.

SPAC as a possible vehicle for promoting re-industrialisation through SMEs

SPACs offer enormous potential as a source of funding of seed capital to SME entrepreneurs who are finding access to capital to fund their businesses onerous and almost impossible at times (Marx *et al.*, 2021). The effective use of SPACs as an empowerment vehicle can give stimulus to the active investment of previously inaccessible capital in the economy (Marx *et al.*, 2021). SPACs can also effectively give rise to the empowerment of a broader pool of talented management that may not be able to progress in the current corporate context, becoming effectively a delivery mechanism for sustained and broad-based economic empowerment in the economy (Marx *et al.*, 2021). In operationalizing the SPAC, the authors are of the view that consideration should be given to the possibility of incentivizing companies to invest in SPACs. One way of doing this is to possibly incentivize investors by allocating BBEEE points for investments that meet the required

empowerment criteria (Marx *et al.*, 2021). Such BBEED criteria that investment SPACs should meet, could include aspects such as Enterprise and Social Development, Preferential Procurement; Management Control, and Ownership (Marx *et al.*, 2021). This is a concept that could be explored to kick start investments in SPACs for sectoral development and offer investor companies reward for investing upfront with the possibility of income and capital gain in the long run and accordingly serve to counter the investment strike and stimulate investment in the local economy which at a sectoral level should lead to job creation (Marx *et al.*, 2021). For SPAC companies it would provide the startup capital that is needed to fund SME businesses.

2.3 Development Finance Institution

The Industrial Development Corporation (IDC) as a development finance institution has the mandate to maximize development impact through job-rich industrialisation, while contributing to an inclusive economy by, among others, funding black-owned and empowered companies, black industrialists, women, and youth-owned and empowered enterprises (IDC, 2021). The IDC also promotes entrepreneurial development and growing the Small to Medium Enterprise (SME) sector. The geographic reach extends beyond the borders of South Africa and covers the whole of Africa to promote regional economic growth (IDC, 2019).

Who does the IDC lend to?

According to IDC (2020), the IDC lends to private sector companies that are operating in one of the sectors serviced by its strategic business units (SBUs). There are 13 SBUs and within each unit, certain sub-sectors or focus areas are covered in that unit's strategy. The SBUs include:

- Agro-Processing and Agriculture
- Chemical Products and Pharmaceuticals
- Basic and Specialty Chemicals
- Clothing and Textiles
- Heavy Manufacturing
- Light Manufacturing
- Media and Audio Visual
- Machinery and Equipment
- New Industries
- Tourism
- Automotive and Transport Equipment
- Industrial Infrastructure
- Basic Metals and Mining

The IDC also invests in projects along the various stages of the project development life cycle: pre-feasibility, bankable feasibility, pre-implementation, and implementation. Some of the SBUs listed above are project focused with inhouse project development skills available (IDC, 2020).

2.4 Private Equity industry

Literature on venture capital (VC) and private equity (PE) depicts a broadly positive view of their activities (Manigart & Wright, 2013). Most empirical studies have found that the post-investment growth and/or performance of investors' portfolio companies is higher than that of no-venture capital-backed companies (Manigart & Wright, 2012; Wright *et al.*, 2009). This positive effect is attributed to investment managers' selection skills, their value-adding activities leading to professionalization of portfolio companies, the tightened post-investment governance of portfolio companies including monitoring activities the provision of additional financial resources, and the transfer of reputation and legitimacy to portfolio companies (Manigart & Wright, 2013). It is these positive effects that have been of interest to the authors when reviewing PE value creation principles in order to inform the mechanics of the functioning of the SPAC.

The Southern African Venture Capital and Private Equity Association

The Southern African Venture Capital and Private Equity Association (SAVCA) is the industry body and public advocate for private equity and venture capital asset classes in Southern Africa (SAVCA,

2020) . SAVCA plays a meaningful role in the sector by conducting industry-specific research, providing guidelines and standards for the industry as well as promoting the private equity and venture capital asset classes.

Private Equity Explained

According to SAVCA (2020), a private equity fund is a long-term, alternative asset class, which entails fund managers raising third-party funds from various classes of investors, to buy assets that are predominantly privately held. Radu & Mihaela (2014) define a private equity fund as a source of capital for companies that need capital. It acts as an intermediary between capital holders and a company that needs financing in order to develop. According to Miller (2011) PE, as a financial instrument, has become an important element of the financing spectrum of private companies. Further, as an asset class, it is labelled to generate the highest returns on the capital market mainly due to the main strategies of PE companies to create value being active ownership (Miller, 2011).

Performance of PE is to a large extent the consequence of a strong alignment of interests between the managers (general partners) at the private equity firm, the management teams at the portfolio companies, and the investors (limited partners) in the funds (van Swaay, Leleux, Megally and Leleux, 2015). Further, incentives in private equity are generally stronger, more focused, performance-driven, and internally consistent than those available to managers in other firms or public institutions. These strong incentives, and the means to deliver on value-creating strategies, unleash performance at all levels (van Swaay et al., 2015).

The economic impact made by PE lies in channelling available equity capital to companies that have no access to public equity markets (Miller, 2011) . As a result, PE turns out to be significant, particularly for companies, which have not established themselves yet or are facing transformational challenges to survive (Miller, 2011) . Further, PE is a financing instrument that addresses young companies focusing on corporate growth. PE fosters innovation, generates high-skilled jobs, and more fundamentally it creates new employment and new wealth by investing in new technologies and innovative concepts (Miller, 2011).

One of the true advantages of PE investment lies in the increase of the investee company's equity capital and the improvement of its balance sheet structure, which again has a positive impact on its credit ratings and its negotiating position. But perhaps even more important, it provides stability and liquidity during investment-intensive years. As a result, companies are able to develop their products and grow continuously (Miller, 2011).

There are three key types of private equity investment strategies or categories: Venture Capital, Growth Equity, and Buyouts (Cote, 2021). Venture Capital refers to 'Seed Capital' and 'Start-up and early stage', Growth Equity also known as Development Capital refers to the 'Expansion and Development' stages of business development (SAVCA, 2020). Buyouts are excluded from the scope of this study since the focus of this paper is promoting re-industrialisation through SMEs i.e. SME growth and sustainability.

The majority of SMEs require investment capital to pursue their growth strategies, however displaying low equity ratio and possessing bad credit worthiness they have not been within the risk appetite of banks and credit institutions. In this regard, PE represents a good alternative solution providing investment capital (Miller, 2011) at different stages of business development. However, PE is not without controversy. There are arguments not in favour of positing that PE investors "in their function as majority shareholders neglect the sustainable development of their portfolio companies in favour of their temporary value increase" (Miller, 2011).

PE fund managers are considered to be important drivers of economic growth, job creation, and generating above-average returns for investors (SAVCA, 2019). Investors are increasingly looking to private equity for investment performance as well as investments that have a positive influence on the company and the communities around them (Liedtke, 2020). Recent performance indicators of the

listed market have not been great, however, figures from a financial perspective indicated that private equity was doing better than the listed space (Liedtke, 2020). Investors continue to look for private equity investments because the investment performance of private equity funds continues to grow despite a tough market for listed products.

PE provides an alternate exposure and access to sectors under-represented in the listed markets, and access to high-growth developing markets that don't already have a stock exchange. As an alternative, public equity is exposed to sectors that are represented only in the listed markets (van Lill, 2020). It is evident from industry research that PE funds recover the initial investment and further obtain a multiplied gain over the invested sums. The possibility exists that private equity funds are successful due to the long-term nature of the investment. Companies seek private equity investing for business expansion, developing new technologies and products, making acquisitions, buying out shareholders, and restructuring ownership and management (SAVCA, 2020). These types of investments are considered to be long-term in nature and therefore potentially suitable for investors looking for long-term investments.

The purpose of a private equity fund per the definitions above appears to be similar to that of a SPAC. A SPAC is a vehicle for raising capital to enable the acquisition of viable assets. The viable asset would, in this case, be the small and medium businesses in the SME sector in need of capital for growth. Unlike a private equity firm that would manage the private equity fund, a SPAC can raise funds without any operational assets, and funds are kept in escrow during the period before an acquisition or listing and are refunded when there is an exit (Jooste, 2019).

3. Methodology

The researchers reiterate that the specific objective of this work is to propose the SPAC based on the principles observed from the IDC processes and SAVCA. This is an exploratory qualitative study that used unstructured interviews to review the existing IDC processes and SAVCA PE value creation principles. An unstructured interview is sometimes referred to as an in-depth interview due to the tendency of engaging with the units of analysis to the real generation of crucial information about personal experiences and perspectives (Bihu & Ghafoor, 2020).

Two independent experts were purposively invited for an unstructured interview to obtain information about the IDC processes and the PE industry value creation principles. The researchers interviewed a manager in a business unit at the IDC, Mr. Kofi Amparheng, and interviewed the CEO of SAVCA, Ms. Tanya van Lill.

4. Findings

4.1 IDC processes

The interview conducted with a manager in a business unit at the IDC provided insights into the inner workings of the IDC and the process followed to identify and select a prospective investee. When asked how the IDC decides on which companies to invest in, the following response was noted.

Applying to the IDC is an evergreen process. A potential client can apply at any point and the key documentation required for the IDC to consider their proposal is a detailed business plan. Depending on where the client's business is located, the business plan will be appraised by either the Pre-Investment Business Unit (PIBC) – for all applicants based in Gauteng, or one of the Regional Offices – for applicants based outside Gauteng. There are 15 satellite / regional offices with at least one office based in each one of the 8 other Provinces (excluding Gauteng). An employee that works in PIBC or the Regional Offices would perform a 'Basic Assessment' once the employee receives the business plan. They will gather information and documents to assess whether the potential client complies with the IDC funding requirements, including whether it falls within the SBU's mandate. This also serves as a preliminary risk assessment. The outcome of the Basic Assessment is to either propose that the SBU should do a more detailed investigation i.e. a due diligence to verify the merit of the transaction. Alternatively, they may decide not to proceed further given several reasons including the proposal falling outside of IDC mandate, or no economic viability could be ascertained.

The due diligence process is managed by the relevant SBU. This is an investigation into the economic merit of an application, which includes all aspects that could influence the sustainability and profitability of the entity. The due diligence team will have individuals with competencies in the various areas that are assessed in detail including financial, marketing, technical, legal, environmental, and asset valuation. The team will conduct the due diligence based on first principles as far as possible rather than relying on the client's assumptions. This is effectively creating budgets from scratch based on the team's analysis of the various drivers of the business.

The team will formulate a view on whether to support the deal primarily based on the ability of the company to repay the IDC funding in line with the general terms of finance. The key tools used to assess this is the financial model that would have been constructed independently. They will also evaluate the key findings from the marketing, technical, legal, environmental, and asset valuation due diligence as part of the decision. Another important consideration is an assessment of the key management running the business and their ability to deliver on the business plan.

A submission is prepared to recommend the terms and conditions for IDC's investment and this is considered by the IDC's Investment Committee (IC). The IC has the final authority on approving or rejecting the deal and agreeing to the recommended terms of financing or modifying them (Amparibeng, 2019).

The authors are of the view that the process discussed above is thorough and detailed to identify risks and potential returns from businesses looking for support and funding from the IDC. Based on this process followed, the post-1994 era has seen the IDC contribute significantly to the expansion and diversification of SA's industrial base and in the process facilitate job creation, reducing inequality and promoting economic growth. Given South Africa's history, inclusive growth and structural economic transformation have been key focus areas for both government and the private sector as they seek to help the country realise its full economic potential. The role of the IDC has been critical in helping the country achieve these objectives (IDC, 2016). However, the full extent of the objectives has not been achieved.

It is the authors' view that the applications of similar principles used at the IDC in a SPAC may produce similar or even better results. The thorough and detailed approach to investing is a good foundation for identifying SMEs who will be effective in contributing to the achievement of the economic objectives of South Africa.

4.2 PE value creation principles

The globalization of the financial system has introduced access to capital markets. This has meant that investors looking for profit opportunities have increased their activity in this market regardless of their financial power (Radu & Mihaela, 2014). This attraction suggests that SMEs seeking funding no longer have to go to banks to obtain loans for expansion but may consider accessing investors that now reside in the capital markets. Where the bank used to be the lender of choice for smaller businesses they are "gradually being replaced by associations or consulting and/or investment groups, identified as private equity investment funds" (Radu & Mihaela, 2014) amongst others. For this study, investment groups are considered to be government-owned funding vehicles such as the IDC and privately owned funding vehicles such as private equity funds.

PE funds differ from traditional investments in listed shares or bonds in that they are illiquid and long-term (Buchner, 2017). Due to the typical maturity period being ten years it may appear that to exit the investment before the maturity period would be costly for an investor. Further, private equity differs in that the investor first makes an initial capital commitment which is transmitted at a future date in response to a capital drawdown by the private equity fund (Tabo, 2019). The capital drawdowns are not known to suggest that an investor is investing in an underlying asset where what is only known, for example, the fund size, investment mandate, industries, geographic focus, and life stages of the company (van Lill, 2020). Despite not knowing the timing of drawdowns, private equity funds continue to be the number one consideration for investment performance.

According to SAVCA (2020) and van Lill (2020), the following are the contributing factors to private equity returns:

- PE Funds make equity investments directly into portfolio companies.
- PE is a long-term investment, improving sustainability in changing and/or volatile market conditions.
- Fund Manager's work with the management of the portfolio companies to improve company performance.
- Alignment of interest between the PE fund managers and the management of the managers of the businesses in the portfolio.
- Good PE firms also excel at identifying the 1 or 2 critical strategic levers that drive improved performance.
- They are renowned for excellent financial controls and for a relentless focus on enhancing the performance basics – revenue, operating margins, and cash flow.
- They can introduce skills and networks into the operating companies to help scale the business.
- The PE fund manager takes ownership – it is the ultimate accountability model and a significant driver of return.
- PE fund managers invest their money alongside their investors' money.
- They have skin in the game.
- PE plays a crucial role in the growth and survival of portfolio companies (investee businesses), increasing employment, innovation, and economic growth.

Superior returns would have to be expected to incentivize companies to invest in SPACs. SPACs, in partnership with the government, established with the specific intention of stimulating South Africa's second economy would have to be structured with the above contributing factors to PE returns as a framework.

5. Conclusion and recommendations for future research

The objective of this work was to propose the SPAC, based on the IDC processes and PE value creation principles observed from SAVCA, as a possible vehicle for promoting re-industrialisation through small and medium-sized enterprises. Firstly, this was done by providing background information about SMEs in South Africa and current government policy on small businesses. Secondly, the paper provided an overview of the literature currently available on SPACs, SME sector challenges, the purpose of DFIs as well as an overview of the PE industry. Research on the SPAC not used solely to finance SMEs through debt and being used as a mechanism to operationalize the social compact that is a fundamental approach of a developmental state is scarce. This paper makes a significant contribution to the existing body of knowledge. The findings are relevant given that public sector programmes to stimulate sustainable growth of the SME sector are struggling.

The paper finds that SPACs, when structured according to PE value creation principles, offer a unique opportunity to stimulate growth in the second economy and SME sector in the form of an element of taking on an equity ownership stake as well as management skills transfer. It also finds when SPAC is benchmarked with IDC and SAVCA the results for the SMEs would be: an introduction of skills leading to the professionalization of the business; networks to help scale the business; excellent financial controls with a relentless focus on enhancing revenue, operating margins and cash flow; investments made to solidify or improve their position among the competitors; and tightened post-investment governance which includes monitoring activities, the provision of additional financial resources and the transfer of reputation and legitimacy to the business.

Future research could consider the funding mechanism for the SPAC to be realised by JSE-listed entities. The authors are of the view that JSE-listed entities could contribute a percentage of their profits to the SPAC as an equity contribution, much like the provisions of the mining SETA requiring mines to pay 1% of their payroll as a skills development levy (Minerals Council South Africa, 2022). The benefit of this to

the JSE listed entity is that the organisation then has equity in the SPAC and will enjoy any benefits of dividends declared by the SPAC.

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Evaluating the Influence of Specific Macroeconomic Variables on Business Confidence In South Africa

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Keywords

Business confidence; inflation, consumer confidence, exchange rate, unemployment rate, South Africa.

Abstract

The current macroeconomic environment in South Africa is in uncertain times, with high levels of inflation, unemployment and lower levels of economic growth. These factors, and more, all have an impact on business confidence. This study employs a quantitative approach to investigate which macroeconomic variables have the biggest influence on business confidence in South Africa for the period Q12010 to Q42019 with the use of the autoregressive distributed lag model (ARDL). The findings revealed that variables such as inflation, unemployment and the rand/US dollar exchange rate harm business confidence, with increased levels of GDP having a positive influence. Consequently, the study suggests that getting inflation, exchange rate volatility and unemployment under control would lead to higher levels of business confidence and an influx of foreign companies wanting to do business in South Africa.

1. Introduction

1.1. Problem statement

Investment decisions are undoubtedly guided by feelings and expectations about the country's business and economy (Lucey and Bowling, 2005). The evolving business environments in the country, together with the changing consumer requirements, are putting pressure on business owners operating a high-risk-bearing business to in fact manage the business more flexibly and efficiently (Olkiewicz, 2022). Business confidence (BC) is one of the most significant tools used to track output growth as well as predict possible economic contraction and expansion because business activities in the country cover all sectors of the economy (Oluwaseguna and Olivide, 2021). Therefore, confidence and trust are important components in business today, because Oluwaseguna and Olivide (2021) identify the well-being of the business (*based on the ease of doing business*), the perception of businesspeople and firms, and the predictability of the future growth path of the economy as important aspects of business confidence. Business confidence, therefore, refers to the level of pessimism or optimism that managers have about the prospects of their businesses (Mendicino and Punzi, 2013).

Having confidence in the country's financial system and economy at large is what contributes to economic and financial stability in the country. This is supported by the fact that business confidence has an impact on the various factors that affect a nation's economy, where if business confidence is low, the 'wait and see' attitude is adopted by various stakeholders, such as the business sector, consumers, and investors – foreign and domestic – because of the fear of the unknown (Maredza and Nyamazunzu, 2016). It is also common that when business confidence is low, consumers tend to defer their spending into the future rather than spending in the present. Conversely so, consumers tend to spend more when they feel confident about the prospects of the economy, and this occurs when business confidence is high, thereby implying favourable economic conditions prevailing in the country. It is, however, interesting that a decline in BC does not contribute positively to the economy, while on the other hand, a deteriorating economy does not positively contribute to business confidence either (Maredza and Nyamazunzu, 2016). Due to this, researchers and policymakers have

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been constrained by the need to analyse which macroeconomic variables influence business confidence and unfortunately not much has been done on an empirical level to identify this.

According to the South African Chamber of Commerce and Industry SACCI (2016), a record peak in business confidence was recorded in December 2006, when the business confidence index (BCI) stood at 141.2 (2015=100). Be that as it may, a steady decline in business confidence has been recorded since 2008, and South Africa, unlike many other developing countries, has since struggled to attain post-crisis confidence levels in its economy for more than a decade now (Smit, 2021). According to SACCI (2022:3), an annual 0.4 index point decline was recorded for South Africa between January 2021 and January 2022, whereas a 94.1 BCI was recorded for January 2022. Additionally, a decline to 91.0 in BCI was recorded in September 2021, after a high of 97.0 in May 2021 was recorded (SACCI, 2021:3). Moreover, the lowest business confidence index point since its inception in 1985 was recorded in May 2020, where BCI was recorded at 70.1 (SACCI, 2021:3). As such, SACCI (2020:3) asserts that from an annual perspective, between April 2019 and April 2020, South Africa's BCI was recorded to have declined by 15.9 index points. The deterioration in business confidence has been further exacerbated by the Covid-19 pandemic, which brought about increased volatility in global financial markets, increased financing costs, continuous power outages (load-shedding), reduced trading volumes, increased vandalism, and looting, which all did not help to restore confidence in business in SA (Sibeko, 2022).

As the country tries to pull itself out of the economic downturn exacerbated by the Covid-19 pandemic, business confidence is still lagging, and this could pose a serious constraint on improving the country's economy, especially in terms of acquiring investments. As such, the concept of business confidence is consequently important as it is a significant tool to assess the prevailing economic climate in a country (Van Rooyen, 2011). Although many studies have attempted to analyse business confidence, many researchers have analysed the impact of one variable on business confidence. For example, the study of Kirchner (2020) analysed the effect of changes in monetary policy on consumer and business confidence, while the study of Sum (2014) analysed the effect of business and consumer confidence on stock market returns, while Khan and Upadhyaya (2020) investigated whether business confidence matters for investments. Although some studies have investigated some economic variables (one or two) with other variables such as consumer confidence, and business confidence, very few studies have evaluated specific macroeconomic variables and their influence on business confidence in South Africa, yet it plays a pivotal role in attracting the much-needed investments for the country's growth and development. This paper is therefore unique in the sense that it analyses the influence of specific macroeconomic variables only on business confidence in South Africa.

Research regarding the influence of macroeconomic variables on business confidence remains an untapped area of research, mainly due to difficulties in measuring and identifying these significant economic variables (Barsky and Sims, 2012). Therefore, this paper aims to contribute to the growing body of literature on the role, magnitude, and significance of specific macroeconomic variables that cause a change in business confidence, specifically within the South African context. By so doing, the primary objective of this paper is therefore to critically analyse and identify which macroeconomic variables cause an increase or decrease in business confidence in South Africa. By so doing, this will allow policymakers to put more focus on stabilising the country's macroeconomy in such a way that positively contributes toward an increase in business confidence in the country.

2. Literature review

Business confidence can be analysed from different perspectives, and consequently, it affects many research fields. According to Olekiewicz (2022), business confidence was first considered a part of ethics, theology, and human philosophy. However, he further postulates that, over time, business confidence included aspects of social psychology as well as sociology. Be that as it may, Rehman (2020) and Rudzewicz (2016) assert that business confidence is currently a phenomenon in the business and economic environment due to its impact on a nation's economic system at large. This, therefore, increases the growing interest in business confidence by practitioners and scientists in

management sciences, economics and business. Therefore, sentiments can be used to define the economic participants' views on the future economic developments that could influence the economy because they can influence the participants' current decisions (Nowzohour and Stracca, 2017).

According to John Maynard Keynes (1936), incoherent thoughts might affect people when they pursue their financial self-interests, especially during times of economic instability. Maynard further indicates that during times of economic uncertainty, people make financial decisions based on what he called the 'animal spirit' (Keynes, 1936). As such, this 'animal spirit' is used as a euphemism to describe the emotion of pessimism, hope, confidence, and fear that can affect a person or business' decision-making process. Therefore, the confidence level will be low when the 'animal spirit' is low and conversely so, when the 'animal spirit' is high, this simply translates to high confidence among economic participants. This is because increasing business confidence in a nation results in positive economic sentiments, which translates to more people being hired by businesses. When certain disruptive circumstances such as trade barriers, political instability, health pandemics, peace and other disturbances arise in the economy, affecting business confidence in the country, businesses are most likely not to take on new risks (Camba, 2020). This, therefore, damages the general morale in the economy, causing significant job losses and leading to an overall increase in unemployment in the country. Moreover, businesses that cannot protect their existence will therefore without a doubt contribute to the dangerous cycle of unemployment (Camba, 2020). Additionally, because the gross domestic product, commonly known as GDP, is among the most important indicators used to measure a nation's economic performance at large, GDP represents economic production and growth, and this has an impact on all economic participants of a country. This is because, when GDP is high or strong, consumers increase their spending on goods and services (Stats, SA, 2013). Therefore, when economic growth is strong, firms, businesses and investors have more confidence to invest, and the opposite is true when GDP is low (StatsSA, 2013).

On the other hand, the implementation of effective monetary policy also plays a critical role in ensuring confidence in the economy, since the SARB can directly or indirectly influence the exchange rate, inflation, and interest rates. Furthermore, factors such as inflation expectations, the exchange rate, and the interest rate all play a significant role in ensuring business confidence in the economy. Monetary policy uncertainty is characterised by constant changing interest rates and high inflation, where various macroeconomic indicators can be used to assist and shape consumer and business expectations about the future (Kurov and Stan, 2018) since monetary policy stability has a significant role in maintaining private sector confidence. Additionally, the literature has also shown that during times of exchange rate crisis, it seems as though exchange rate volatility matters more to sentiments, and that effect of exchange rate volatility on sentiment seems to be more visible under extreme economic conditions (De Brouwer, 2004). This is because the exchange rate crisis itself is more costly than the exchange rate volatility, and therefore he asserts the importance and implication of the careful selection of an exchange rate regime that minimises the risk of having a crisis. Additionally, he further asserts that in countries that follow a flexible currency regime, people might get accustomed to living with exchange rate volatility, to a point where this volatility tends to create less uncertainty in the long run and therefore leads to a reduced negative impact on confidence because people would have been used to the fact that the exchange rates can go up and down without causing significant distress to the economy at large.

According to O'reilly (2022), business confidence data is one of the most powerful sources that move forex prices as well as other markets. The literature also further postulates that when business confidence is high, the market will, in general, perceive this as positive for the country's currency because increased confidence shows signs of growth and expansion. O'reilly (2022) does also highlight that confidence indexes or surveys are not necessarily good predictors of currency movements. Additionally, the link between inflation and business confidence is quite straightforward; as per the definition of inflation, the continuous price increases in goods and services cause negative shocks in terms of how businesspeople and managers perceive future business prospects. Therefore, the impact of inflation on a business may be insignificant in the short run, but this can, however, quickly make a significant impact on the business in the long run because, when inflation increases,

this causes a reduction in consumers' purchasing power, thereby implying that businesses will be selling less of their products, which also means reduced profits for the business. As such, the reduced profits become a constraint on the ability to grow and invest in the business.

Although attempts have been made to evaluate the influence of certain economic variables on business confidence, from an empirical perspective, researchers have not reached a consensus. For example, making use of a regional spatial panel approach, Coetzee (2014) investigated the relationship between business confidence indicators and real GDP. The results obtained from this study found a positive relationship between business confidence and real GDP. Furthermore, the study of De Jong and Mncayi (2018) investigated the impact of business confidence and investment on economic growth in post-apartheid South Africa. The study used time series data starting from quarter 1 of 1995 to quarter 4 of 2014. A one-way causal relationship was found between the repurchase rate of the South African Reserve Bank (SARB) also known as the repo rate and business confidence, while a bidirectional causality was found between GDP and business confidence. The result, therefore, suggests that the repo rate Granger causes fluctuations in business confidence in the short run, while fluctuations in GDP and business confidence Granger cause fluctuations in each of the variables, respectively. Additionally, Ndou et al. (2017) found evidence that GDP growth in SA and consumption expenditure tend to decrease more when there are negative shocks in business confidence.

Another study also showed that business confidence is not only an important indicator of economic growth; however, but it is also a leading indicator of business fluctuations occurring in SA (Kershoff, 2000). Using the ARDL approach, the study of Maredza and Nyamazunzu (2016) used quarterly time-series data from 1975 to 2015 and 2002 to 2015, respectively, and investigated business confidence and financial services business confidence in South Africa by identifying the key domestic drivers and the nature of their impact. The findings of this study suggested that the exchange rate, inflation outlook, economic growth, stock market performance, and interest rates have a significant impact on business confidence in South Africa. The study therefore concluded and emphasised that macroeconomic stability drives business confidence in the country.

Moreover, Olekiewicz (2022) investigated the impact of economic indicators on the evolution of business confidence during the COVID-19 pandemic period, where the study assessed the G7 and E27 countries and Poland for comparative purposes for the years 2015 to 2021. The results of the study revealed a negative relationship between GDP, unemployment, inflation, and business confidence during the Covid-19 pandemic. Additionally, the study by Kumalo (2013) made use of quarterly data from the first quarter of 1993 until the first quarter of 2013 to investigate business confidence and inflation in South Africa, using the variance decomposition and GIRF method. The study revealed that fluctuations in inflation cause negative shocks to how business owners and managers in SA perceive the prospects of their business.

The study of de Mendonça and Almerida (2018) investigated the importance of credibility for business confidence with evidence from an emerging economy, i.e., Brazil. The study asserted the importance of monetary policy and concluded that a credible monetary policy encourages improved decision-making; however, the study also highlighted that institutional uncertainty discourages business confidence. Moreover, the study of De Brouwer (2004) investigated the empirical relationship between exchange rate volatility and survey measures of household and business confidence in Malaysia, Japan, Singapore, Australia and Korea, and consequently emphasised that business sentiments are sensitive to exchange rate volatility. As such, empirical evidence on macroeconomic variables that cause changes in business confidence seems to not have been in consensus for more than a decade now. As such, against the limited evidence in the literature, this study, therefore, investigates the influence of specific macroeconomic variables on business confidence in South Africa.

3. Data and methodology

3.1 Data and data sources

This study follows a quantitative approach in reaching its objective, where secondary time series data was used. The data was sourced from the South African Reserve Bank (SARB) and from the Bureau for Economic Research (BER), which was established in 1944 and recorded the first BCI index value in the first quarter of 1969 (Bureau for Economic Research, 2022). This study used the BCI index formulated by the BER because the BER forecasts, analyses, monitors, and identifies economic trends – domestically and internationally – that have an impact on the South African business environment (University of Stellenbosch, 2022). Moreover, the BER index is quite popular among researchers who are conducting quantitative analyses of business confidence, such as the study by De Jongh and Mncayi (2018) and Maredza and Nyamazunzu (2016). The time series data utilised in the study consists of 40 observations, which are over the $n=30$ rule of thumb for sample sizes. Quarterly time series data was used, ranging from quarter 2010 Q1 until 2019 Q4. This period was chosen due to the availability of data. The study, therefore, made use of the BCI as the dependent variable. The explanatory macroeconomic variables selected were chosen because of the significant role they play in the South African economy, and these are summarised in table 1 below. Additionally, these variables are key macroeconomic indicators that are used by various policymakers and institutions such as the South African Reserve Bank (SARB) and Statistics South Africa (Stats SA) in analysing the progress of the country’s macroeconomic environment. Table 1 below therefore provides a summary of the data description as well as the expected signs.

Table 1: Description of the variables

Variable	Abbreviation used	Description	Expected sign (+/-)
Business confidence	BC	This is the recorded business confidence level index.	This is the dependent variable of the study
Real gross domestic product	GDP	GDP at constant prices	As GDP increases, so will the business confidence in SA increase. A positive (+) sign is expected
Inflation	CPI	Consumer price index	If there is an increase in the inflation rate, everyday life and products will become more expensive and business confidence will decrease. A negative (-) sign is expected
Unemployment rate	UNEMP	The quarterly unemployment rate as published by Stats SA.	With an increase in the unemployment rate, there will be a negative effect on business confidence in SA. A negative (-) sign is expected
Real exchange rate	EXCH	The rand/dollar exchange rate.	With the rand depreciating against the US dollar, the cost of doing business in SA increases and this has a negative effect on business confidence. A negative (-) sign is expected

Source: Authors own table

3.2 Methodology

Since this study follows a quantitative research approach using time series data, the first step in the analysis requires testing the variables used for stationarity, using the unit root test. It is through the unit root test the model selection can be confirmed. The study, therefore, used the Augmented Dickey-Fuller (ADF) unit root test to ensure that all variables are stationary and that no variable is integrated at the order I (2). When the null hypothesis is rejected, this infers that the series is stationary and that the series doesn't have a unit root.

The study made use of the Autoregressive Distributed Lag (ARDL) model developed by Pesaran and Shin (1996), and later modified by Pesaran et al. (2001) to evaluate the influence of selected macroeconomic variables on business confidence in South Africa. The ARDL model was chosen because of the numerous advantages it has over other models which includes allowing for stability in the model, even with a limited sample size (Kharusi and Ada, 2018). The ARDL model also allows for variables to be integrated at different orders of integration, i.e. integration at either I (0), I (1) or a combination of both (Meyer and Mothibi, 2021). Another advantage of the ARDL model is that it's able to analyse the relationship between the variables using a certain number of lags for each selected variable, unlike the Vector Auto-Regressive (VAR) model for example (Hababakize et al., 2021). Moreover, the ARDL model can simultaneously provide short and long-run estimations, hence why this model was chosen by the study.

The following model was formulated to evaluate the influence of specific macroeconomic variables on business confidence in SA.

$$\Delta LBC_t = \alpha_0 + \sum_{i=1}^n \beta_1 \Delta LBC_{t-i} + \sum_{i=1}^{q1} \beta_1 LGDP_{t-i} + \sum_{i=1}^{q2} \vartheta_1 LCPI_{t-i} + \sum_{i=1}^{q3} \alpha_1 LEXCH_{t-i} + \sum_{i=1}^{q4} \delta_1 LUNEMP_{t-1} + \gamma_1 LBC_t + \gamma_2 LGDP_t + \gamma_3 CPI_t + \gamma_4 LEXCH_t + \gamma_5 LEXCH_t + \varepsilon_t \quad (1)$$

Where LBC is denoted by the logarithm of business confidence at a time t , which is then followed by $LGDP$ which is the logarithm of economic growth at a time t , followed by $LCPI$ which is the logarithm of inflation at a time t , followed by $LEXCH$, the logarithm of the real effective exchange rate at a time t and lastly, $LUNEMP$ denotes the logarithm of the unemployment rate at a time t . Moreover, ε_t denotes the error term, Δ denotes the difference operator, while n and $q_1 \sim q_4$ denote the optimal lag length, while the long-run dynamics are denoted by $\gamma_1 \sim \gamma_5$.

Once the ARDL model has been formulated, the next step is to establish if a cointegrating relationship exists between the variables, through the following hypothesis:

$$H_0 = \gamma_1 = \gamma_2 = \gamma_3 = \gamma_4 = \gamma_5 = 0 \text{ (no cointegration)}$$

$$H_1 = \gamma_1 \neq \gamma_2 \neq \gamma_3 \neq \gamma_4 \neq \gamma_5 \neq 0 \text{ (cointegration)}$$

By comparing the critical bounds value and the F-statistic value, the conclusion of the hypothesis can be made. When the F-statistic value is greater than the upper bound critical values, then the conclusion of cointegration between the variables can be made, thus the rejection of the null hypothesis. Alternatively, when the F-statistic value is lower than the lower bound critical value, then the conclusion of no cointegration between the variables can be made, thus indicating that there is no long-run relationship between the variables, thus the null hypothesis is not rejected. Furthermore, when the F-statistic lies between the lower and upper critical bound values, then the results obtained are inconclusive (Pesaran et al., 2001). Furthermore, once cointegration is confirmed, the next step in the ARDL method requires the estimation of the Error Correction Model (ECM), which is estimated in the following equation below:

$$\Delta LBC_t = \alpha_0 + \sum_{i=1}^P \beta_i LBC_{t-i} + \sum_{i=1}^{q1} \delta_i LGDP_{t-i} + \sum_{i=1}^{q2} \theta_i LCPI_{t-i} + \sum_{i=1}^{q3} \mu_i LEXCH_{t-i} + \sum_{i=1}^{q4} \sigma_i LUNEMP_{t-i} + \varphi ECT_{t-i} + \varepsilon_t \quad (2)$$

The error correction term which is denoted by *ECT* and its coefficient which is denoted by φ are used to measure the speed of adjustment towards long-run equilibrium. As such, Da ̃gdevire (2012) confirms that the ECM captured the degree to which short-run shocks are corrected to equilibrium. Moreover, the rule of thumb is that the error correction term (ECT) must be negative and have a statistically significant probability value, to show convergence to equilibrium and a cointegrating relationship between the variable used by the study (Meyer and Mothibi, 2021). The last step in the analysis requires stability and diagnostic testing, where several diagnostics and stability tests such as the serial correlation tests, heteroscedasticity test, normality test and stability tests will be conducted.

4. Results and discussions

The section below provides the findings and discussions of the results obtained by the study.

4.1 Unit root test results

To evaluate specific macroeconomic variables on business confidence in South Africa, the ARDL method requires that all variables should be stationary and that no variable be integrated at order I (2), as this would lead to spurious results (Asteriou and Hall, 2015). Therefore, table 2 below provides the results of the ADF unit root test.

Table 2: ADF unit root test

Variables	Model	Levels	1 st Difference	Integration order
LBC	Intercept	0.2742	0.0068***	I (1)
LGDP	Intercept	0.0050*	-	I (0)
LCPI	Intercept	0.0018*	-	I (0)
LUNEMP	Intercept	0.9930	0.0317**	I (1)
LEXCH	Intercept	0.8043	0.0001*	I (1)
Note: ***, **, *: 1%, 5% and 10% significant level respectively.				

Source: Compiled by authors

The results obtained from the ADF unit root test show that no variable is integrated at order I (2), indicating that all variables used in the study are stationary. The results from the ADF test also confirm that variables LBC, LUNEMP and LEXCH are stationary at first difference I (1) level of integration, while LGDP and LCPI are stationary at I (0) level of integration.

4.2 ARDL Bounds testing results

The Schwartz Information Criterion (SIC) was used to select the best ARDL model, where the ARDL model (3, 3, 0, 1, 1) was selected and applied to the bounds testing procedure. The results from the bounds test are therefore summarised in table 3 below.

Table 3: Bounds test results

Selected model (3, 3, 0, 1, 1)			Order of integration	
Test statistics	Value	Significance	I (0)	I (1)
F-statistics	10.05373	10%	2.2	3.09
k	4	5%	2.56	3.49
		1%	3.29	4.37

The results obtained from the Bounds test indicate that the F-statistic, 10.05373 is greater than the upper critical bound value I (1) at 1% and 0.01 level of significance. The results indicate that the null hypothesis of no cointegration is rejected, and the alternative hypothesis of cointegration is accepted. This, therefore, indicates that there is a long-run relationship between the variables used in the study. Additionally, the results indicate that the long-run behaviour of business confidence in South Africa is influenced by the selected macroeconomic variables namely, economic growth, unemployment, inflation and the real effective exchange rate.

4.3 Long-run relationship estimation results

From the estimation of the ARDL model results, the following long-run equation is discussed below:

$$LBC = 2.834^{**}LGDP - 0.305^{*}LEXCH - 0.190^{*}LCPI - 3.718^{***}UNEMP - 27.1143 \quad (3)$$

A positive and significant relationship is observed between business confidence and economic growth, where a one per cent increase in economic growth will on average result in a 2.83 per cent increase in business confidence in South Africa. This, therefore, indicates that when South Africa's GDP increases, business confidence in the country will also increase, which alludes to the fact that when people in the country earn more income thus business confidence will also rise. Similar results were also found by Coetzee (2014) and De Jongh and Mncayi (2018) who also found a positive relationship between business confidence and economic growth. A negative and significant relationship is observed between business confidence and the real effective exchange rate, where a one per cent increase in the exchange rate will on average result in a 0.30 per cent decline in business confidence in South Africa. This is essentially true because when the rand depreciates against the US dollar, there will be a decline in business confidence as it becomes more expensive to do business in South Africa. Similar results were also found in the study of Maredza and Nyamazunzu (2016), who also found a negative and significant relationship between business confidence and the exchange rate.

Moreover, a negative and significant relationship was observed between business confidence and inflation, where a one per cent increase in inflation will on average result in a 0.19 per cent decline in business confidence in South Africa. In the case of South Africa, this is true, because when the general prices of all goods and services rise, conducting business in the country becomes more expensive, thus leading to a decline in business confidence. Maredza and Nyamazunzu (2016) found corroborating findings, who also observed that inflation has a significant impact on business confidence. Furthermore, a negative and significant relationship was also observed between business confidence and the unemployment rate in South Africa, where a one per cent increase in the unemployment rate will on average result in a 3.71 per cent decrease in business confidence. High levels of unemployment in a country puts strain on government resources and chase away potential investment opportunities, making the business environment in the country unstable thus causing a decline in business confidence. Similar results were also found by Olekiewicz (2022) who also found a negative relationship between business confidence and unemployment.

4.4 Error correction and short-run dynamics result

The findings of the error correction model are summarised in table 3 below.

Table 4: Error correction and short-run results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOGBC(-1))	0.308646	0.121322	2.544020	0.0178***
D(LOGGDP(-1))	0.331761	0.117110	2.832892	0.0092***
D(LOGEXCH)	-1.225433	0.233552	-5.246946	0.0000***
D(LOGEXCH(-1))	-0.605027	0.269365	-2.246126	0.0342**
D(LOGEXCH(-2))	-0.448233	0.255262	-1.755975	0.0918*
D(LOGCPI)	-0.129650	0.049288	-2.630452	0.0147***
D(LOGUNEMP)	-1.804913	0.445831	-4.048428	0.0005***
CointEq(-1)*	-0.786916	0.119195	-6.601904	0.0000***

Note: ***, **, *: 1%, 5% and 10% significant level respectively.

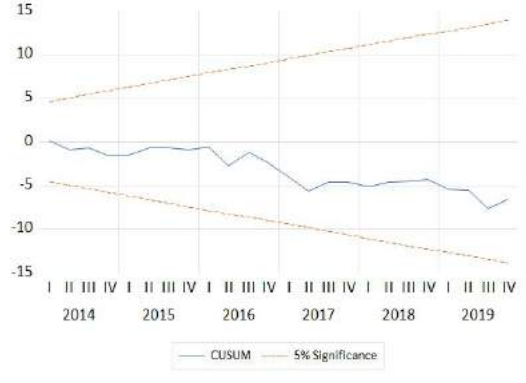
Since the long-run relationship has been confirmed, this suggests determining the speed of adjustments of short-run shocks towards long-run equilibrium. To achieve this, the error correction model was estimated. As shown in Table 3 above, the error correction term (-0.786916) is negative and statistically significant. This value, therefore, suggests that approximately 78 per cent of the models' short-term fluctuations are corrected in the long run. Furthermore, similar to the results obtained in the long run, the outcomes of the short run results suggest that all the explanatory

variables are statistically significant to influence short term changes in business confidence in South Africa. The real effective exchange rate and unemployment have the largest negative impact on the short-term behaviour of business confidence. Therefore, a one per cent increase in the real effective exchange rate will on average result in a 1.22 per cent decline in business confidence, and the lagged value of this variable also has a negative impact on business confidence, while a one per cent increase in the unemployment rate will on average result in a 1.80 per cent decline in business confidence. Additionally, an increase in economic growth has a positive effect on business confidence, as a one per cent increase in economic growth will cause short-term business confidence to grow by 0.33 per cent. While on the other hand, a one per cent increase in inflation will on average cause a 0.12 per cent decline in business confidence in the short run. Based on both the long and short-run results, the study can conclude that business confidence is affected positively by economic growth and negatively by rising inflation, unemployment and depreciating exchange rates.

4.5 Diagnostics and stability test results

To confirm and ensure that the model used was reliable and stable, various diagnostic and stability tests were conducted as summarised in table 5 below.

Table 5: Diagnostics and stability test results

Test	Null hypothesis (H_0)	P-value	Decision
Breusch-Pagen-Godfrey	Homoskedasticity	0.9910	H_0 not rejected
Breusch-Godfrey Serial Correlation LM Test	No serial correlation	0.4601	H_0 not rejected
Jarque-Bera (JB)	There is normality	0.6156	H_0 not rejected
Ransey RESET	The model is accurately specified	0.213	H_0 not rejected
CUSUM	Model is stable		

From the results obtained, table 5 above suggests that the ARDL model (3, 3, 0, 1, 1) is reliable and accurate because the null hypothesis of no serial correlation, residuals are normally distributed, and homoscedasticity are not rejected. Furthermore, the results from the Ramsey RESET test also indicate that the model used by the study was accurately specified. Additionally, the outcome of the Ramsey RESET test was also confirmed by the CUSUM test, where the graph also showed that the model is stable with it being in the 5% significance parameters. Therefore, the stability in the parameters of the study conducted indicates that the relationship between business confidence (dependent variable) and the selected explanatory variables was reliable during the sample period evaluated by the study.

5. Conclusion

This study investigated the influence of specific macroeconomic variables on business confidence in South Africa using quarterly time series data from 2010Q1 to 2019Q4 using the ARDL method. The findings of this study revealed a negative and significant relationship between the exchange rate, inflation, unemployment, and business confidence, while a positive and significant relationship between GDP and business confidence was found. The findings, therefore, suggest that lower levels of business confidence are driven by a depreciating rand/US dollar exchange rate, rising inflation rate, and rising unemployment (*the opposite is also true*), while economic growth increases levels of business confidence in South Africa. Findings are therefore consistent with the theory and the study's expectations. The findings also suggest that policymakers, government officials and the SARB need to work together in coordination to direct more resources towards ensuring that unemployment remains as low as possible and that exchange rate volatility is limited. Additionally, policymakers and the SARB need to direct resources towards keeping inflation as low as possible between the inflation target set by the SARB of between 3 and 6%, which is currently a big problem in SA, since inflation rates were recorded at 6.5% in May 2022, which was a five-year record high (SARB, 2022). Even though the findings of the study are appropriate and applicable for policymakers and economic authorities in the country, the study was however limited to using the chosen five explanatory variables due to the availability of data. Therefore, further studies should consider using other explanatory and economic variables that might also have an influence on business confidence and are not used by this study. In addition, the study used the quarterly business confidence index data obtained from the BER. Future studies could use annual business confidence index data provided by SACCI. Overall, policymakers should ensure continued economic growth in the country, as this will improve and encourage business confidence in South Africa. It is therefore important to get this important variable that can harm business confidence in the country under control, because only then would there be proper levels of confidence in South African businesses, and this will result in an influx of foreign companies wanting to do business in South Africa.

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BUSINESS EDUCATION



A Conceptual Framework For Enacting Flow State in MBA Teaching and Learning

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Keywords

Flow state; MBA; teaching; learning; pedagogy; andragogy; heutagogy; business schools.

Abstract

The Master of Business Administration (MBA), first introduced at Harvard in 1908, remains in high demand to this day, and over more than a century of existence, have clearly been a key scholarly research domain. Notwithstanding the global demand and research efforts, the homogeneity of teaching and learning practices is noticeable, and arguably this habituation over time may have unfavourably impacted on curriculum, teaching and learning innovation. This position paper argues that the excessive focus on pedagogy created a neglect of andragogy and heutagogy and proposes a case for enacting flow state into MBA teaching and learning. MBA educators are challenged by the dilemma of transitioning from pedagogy to andragogy, and ultimately heutagogy, along with the elusive goal of facilitating deep engagement in learning activities. Flow theory proposes that when in flow, a person becomes totally involved in an activity and experiences numerous positive experiential characteristics. This position paper argues that by creating the conditions for flow, deep engagement, and improved academic performance may be achieved. By applying Critical Interpretive Synthesis (CIS), a conceptual framework for enacting flow state in MBA teaching and learning is proposed to support academic leadership of business schools with guidelines to initiate experimentation with flow state enactment.

1. Introduction

The Master of Business Administration (MBA) degree, first introduced by Harvard University Graduate School of Administration in 1908 (now Harvard Business School) (Garner, 2021), is a widely sought-after qualification for career progression and personal growth (Herrington, 2010), and regarded as an important differentiator in the employment market (Herrington, 2010). Globally, the MBA remains in high demand as evidenced in the Association of MBA's (AMBA) Application and Enrolment Report of 2021 indicating that globally, the volume of MBA applications received increased by an average of 7% from 2019 to 2020 (AMBA, 2021). Similarly, the Graduate Management Admission Council (GMAC) Corporate Recruiters Survey 2021 indicate that the demand for graduate management talent is returning to pre-pandemic levels (GMAC, 2021). Locally, in South Africa, with the first MBA programme offered beyond North America in 1949 at the University of Pretoria (Garner, 2021), the trend is similar, with the compound annual growth rate of MBA applications being 2.7% over the past decade (2011 – 2020) (South African Business Schools Association (SABSA), 2020).

Over more than a century of existence, MBA programmes have obviously also been a key research area by business schools, with Muposhi, Dhurup, Martin and Bhadury (2019) stating that previous research mainly focused on curriculum (Thomas and Cornuel, 2012; Datar et al., 2010; Rubin and Dierdoff, 2009), impact of MBA programmes (Kretovics, 1999; Bennis and O'Toole, 2005) and assessments (Cullen, 2013; Camuffo and Gerli, 2004). However, when considering global MBA curricula in general, one cannot help but notice the homogeneity of teaching and learning practices. In addition, while various kinds of academic discipline experts within a business school may differ from one another, they exhibit much similarity to their discipline expert counterparts in other institutions. How can this be explained?

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The sociological theory of isomorphism, which refers to the similarity of the processes or structure of one organisation to those of another, proves useful in explaining this homogeneity. DiMaggio and Powell (1983) identified three mechanisms through which institutional isomorphic change occurs, each with its own antecedents: (1) *Coercive isomorphism* results from both formal and informal pressures exerted on organisations by other organisations upon which they are dependent and by cultural expectations in the society within which organisations function. (2) *Mimetic isomorphism* results from uncertainty that encourages imitation. When technologies are not clearly understood, goals are ambiguous, or when the environment creates uncertainty, organisations may model themselves on other organisations. (3) *Normative isomorphism* results primarily from professionalisation, which is the collective effort of members of an occupation to define the conditions and methods of their work and to establish a cognitive base and legitimation for their occupational autonomy.

It is hence probable that isomorphism is a key contributor to the homogeneity of teaching and learning practices in MBA programmes globally, i.e.:

- *Coercive isomorphism* resulting, for example, from pressures exerted by regulatory bodies upon which business schools are dependent for legitimate operation.
- *Mimetic isomorphism* resulting, for example, from business schools modelling themselves on the so-called Ivy League type institutions believed to be the “gold standard” of MBA education.
- *Normative isomorphism* resulting, for example, from supposed standards, best-practice, and methods of accreditation and association bodies that have established a cognitive base and legitimation for the MBA’s autonomy.

It is argued that this “conditioning” over time has adversely impacted on curriculum, and teaching and learning innovation, and that the excessive focus on pedagogy created a scotoma towards andragogy and heutagogy, which appear to enjoy limited consideration in teaching and learning practice. By drawing on the theoretical foundations of pedagogy, andragogy and heutagogy, this position paper argues a case for enacting flow state into MBA teaching and learning and proposes a conceptual framework as foundation for future research.

2. Problem Investigated

Traditionally education has been viewed as a pedagogic relationship between the teacher and the learner (Kenyon & Hase, 2001), with many faculty therefore clinging to pedagogy because it is what they know (Halupa, 2015). McAuliffe, Hargreaves, Winter, and Chadwick (2008) however posit that although there are educators who employ the principles of either student-centred (andragogy) and self-determined (heutagogy) learning, it is not possible to fully implement either theory. Halupa (2015) further argues that although pedagogy and andragogy are usually presented upon a continuum, some students’ educational maturity make them feel restrained by pedagogical practices, whilst others are not ready for andragogical practices and still need pedagogical methods. McAuliffe, Hargreaves, Winter and Chadwick (2008) also highlight the tendency of educators to return to the customary practice of pedagogy because they do not understand how to facilitate andragogical and heutagogical learning. Chacko (2018) further adds that educators face the dilemma in transitioning from pedagogy, with a high degree of teacher control with associated low learner maturity (“sage-on-stage”) and letting go of power and control to andragogy (“guide-on-the side”) as students become more autonomous.

Exacerbating the above, is the fact that “nearly every educator holds the primary, though often elusive, goal of facilitating students’ deep engagement in learning activities” (Schmidt, 2010, p. 605). Schulze (2016) refers to engagement as a student’s active involvement in a task or a pursuit and lists the sources of disengagement as a lack of autonomy, the inability to manage time effectively, feeling isolated from the academic community of practice (CoP), and situational factors at home. Conversely, Schulze (2016) posit that intrinsic motivation, autonomy, individual goal setting, and a sense of belonging to the academic CoP are sources of engagement.

Schmidt (2010) asserts that Mihaly Csikszentmihalyi's flow model has advanced scholars' understanding of the experience of deep engagement, along with the individual and contextual factors that may promote it. The model has implications for both research and practice, and has seen application in fields, including education, psychology, psychiatry, anthropology, and business (Schmidt, 2010, p. 605). The flow theory is based on an individual's state of mind characterised by high concentration and focus on activities that cause high pleasure and intense intrinsic motivation (Csikszentmihalyi, 1990), and the postulate of this position paper is that it holds promise for enacting students' deep engagement in learning activities. It is thus hypothesised that if MBA educators can create a learning environment that unlocks flow state in students, deep engagement in learning activities may be achieved, thereby enabling students to learn at accelerated rates and perform at their best.

3. Research Objectives

Against this backdrop, the primary objective of this study is to develop a conceptual framework for the enactment of flow state in MBA teaching and learning. In support of the primary objective, secondary objectives are to (1) critically review literature pertaining to pedagogy, andragogy and heutagogy, (2) critically review literature pertaining to the flow state, (3) critically interpret and synthesise the reviewed literature

4. Literature Review

Pursuant to the primary objective, the literature review to follow covers the theoretical foundations of pedagogy, andragogy and heutagogy, as well as the psychological state called 'flow'.

4.1. Pedagogy, Andragogy and Heutagogy

Pedagogy has its origins in the monastic schools of Europe in the Middle Ages, with the tradition later adopted in the secular schooling systems of Europe and America in the 18th and 19th century. It is largely a content model concerned with the transmission of information and skills, where the teacher decides what knowledge or skill needs to be transmitted and arranges a body of content into logical units, selects the most efficient means for transmitting this content (e.g., lectures, readings), followed by developing a plan for the presentation of these units into some sequence. Pedagogy is a teaching theory rather than a learning theory and is usually based on transmission (McAuliffe et al, 2008).

Andragogy was introduced into the learning community by Knowles in the 1970s who proposed that adults learn differently than children and developed five assumptions that form the foundation of his theory, namely: (1) Adults are self-directed learners, (2) adults bring extensive experience into the classroom, (3) adults who seek education are ready to learn, (4) adults are internally motivated, and (5) adults want problem-based learning (Knowles, 1970).

According to Halupa (2015), Knowles did not view andragogy as a true epistemology, rather as a concept than a theory. Knowles (1980) outlined a seven-step process for faculty to promote andragogy:

- Develop cooperative learning environments
- Involve learner in the setting of goals
- Diagnose learner needs and interests
- Help learners formulate objectives based on interests and needs
- Design sequential learning experiences to meet these objectives
- Meet objectives with materials and resources
- Evaluate the quality of learning and impact on future learning

Heutagogy was first defined by Hase and Kenyon (2000, p. 1) as a "form of self-determined learning", developed on the concepts of double-loop learning outlined by Argyris and Schon (1974) who noted all students have mental maps and governing variables (Halupa, 2015). McAuliffe et al (2008) propose the following key principles of heutagogy: (1) Knowing how to learn is a crucial skill, (2) educators should focus on learning process rather than content, (3) learning goes beyond specific

discipline, and (4) learning occurs through self-chosen and self-directive action. Halupa (2015) also argues that although heutagogy is an emerging epistemology, it is more transformative than pedagogy or andragogy.

Chacko (2018, p. 280) observes that heutagogy is “most effective when directed to adult learners who are already professionally qualified and are self-motivated and self-determined to improve practice due to the challenges and complexities at the workplace.” Heutagogy hence needs to be viewed as a continuum of andragogical adult learning theory in line with the transition in postgraduate management education directed toward becoming competent using core andragogy of self-directed learning to an autonomous, self-determined learner once the student graduates and focus now shifts from competency to capability (proficient and then on to the state of expertise) (Chacko, 2018).

Table 1 below summarises the key essentials of pedagogy, andragogy and heutagogy.

Table 1: Difference between pedagogy, andragogy and heutagogy

	Pedagogy Children’s learning	Andragogy Adults learning	Heutagogy Self-directed learning
Dependence	The student is a dependent personality. Teacher determines what, how and when anything is learned.	Adults are independent. They strive for autonomy and self-directed learning.	Learners are interdependent. They identify the potential to learn from novel experiences as a matter of course.
Resources for learning	The student has few resources – the teacher devises transmission techniques to store knowledge in the learner’s head	Adults use their own and other’s experience.	Teacher provides some resources, but the learner decides the path by negotiating the learning.
Reason for learning	Learn in order to advance to the next stage.	Adults learn when they experience a need to know or to perform more effectively.	Learning is not necessarily planned or linear. Learning is not necessarily based on need but on the identification of the potential to learn in novel situations.
Focus of learning	Learning is subject centred, focussed on prescribed curriculum and planned sequences according to the logic of the subject matter.	Adult learning is task or problem centred.	Students can go beyond problem solving by enabling pro-activity. Students use their own and others’ experiences and internal processes such as reflection, environmental scanning, experience, interaction with others, and pro-active as well as problem-solving behaviours.
Motivation	Motivation comes from external sources – usually parents, teachers, and a sense of competition.	Motivation stems from internal sources – the increased self-esteem, confidence and recognition that come from successful performance.	Self-efficacy, knowing how to learn, creativity, ability to use these qualities in novel as well as familiar situations and working with others.
Role of teacher / instructor / facilitator	Designs the learning process, imposes material, is assumed to know best.	Enabler or facilitator, climate of collaboration, respect, and openness.	Develop the students’ capability. Capable people: Know how to learn; are creative; have a high degree of efficacy; apply competencies in novel as well as familiar situations; can work well with others

Source: Adapted from Heick (2022)

Richardson, McGowan and Styger (2018, p. 1841) posit that “the focus of an MBA is for students to obtain the skills to undertake their professions and be able to be analytical, problem solvers, research savvy, critical thinkers that are reflective lifelong learners that will equip them to cope in a dynamic, multifaceted and complex environment.” Hence, Richardson et al (2018) argue that it is important to embrace a philosophy to higher education that would support these requirements, and that heutagogy has surfaced as the more optimal approach to adult education comparable to the initial focus on pedagogy and the later shift to andragogy. Stoten (2022) adds “although much has been written about the possible benefits of heutagogy in the promotion of personalised learning, less has been published on how we can implement it in practice.” Stoten (2022) contributes to the discourse on heutagogy in management education in providing an evidential base of heutagogy in practice and highlights the benefits for management education and offers a model of heutagogic learning through the OEPA model. The model describes four distinct phases in the heutagogic journey, beginning with orientation (O) to learning, followed by the exploration (E) and pathfinding (P) phases, and ending with the arrival (A) at the desired learning outcome (Stoten, 2022, p. 90).

4.2 Flow state

Flow is an optimal psychological state that has been described extensively by Csikszentmihalyi (1975, 1990, 1993) and substantiated by others in a variety of settings, including work, education, leisure, and sports. When in flow, a person becomes totally involved in an activity and experiences several positive experiential characteristics, including freedom from self-consciousness and great enjoyment of the process. Flow is an intrinsically enjoyable state and is accompanied by an order in consciousness whereby the person experiences clarity of goals and knowledge of performance, complete concentration, feelings of control, and feelings of being totally in tune with the performance (Jackson & Marsh, 1996). Csikszentmihalyi (1990, p. 4) found that flow occurs when individuals are “so intensely involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it.”

Dietrich (2004, p. 747) asserts that “a flow state ensues when one becomes so deeply focused on a task and pursues it with such passion that all else disappears, including a sense of time or the worry of failure. The person experiences an almost euphoric state of joy and pleasure, in which the task is performed, without strain or effort, to the best of the person’s ability.”

Nakamura and Csikszentmihalyi (2002, p. 90) assert that the conditions of flow include (1) perceived challenges, or opportunities for action, that stretch (neither overmatching nor underutilising) existing skills; a sense that one is engaging challenges at a level appropriate to one’s capacities, and (2) clear proximal goals and immediate feedback about the progress that is being made. Under these conditions, experience seamlessly unfolds from moment to moment, and one enters a subjective state with the following characteristics:

- Intense and focused concentration on what one is doing in the present moment
- Merging of action and awareness
- Loss of reflective self-consciousness (i.e., loss of awareness of oneself as a social actor)
- A sense that one can control one’s actions; that is, a sense that one can in principle deal with the situation because one knows how to respond to whatever happens next
- Distortion of temporal experience (typically, a sense that time has passed faster than normal)
- Experience of the activity as intrinsically rewarding, such that often the end goal is just an excuse for the process

Schmidt (2010, p. 605) further explains that from the pursuit to understand intrinsically motivated activity, flow refers to a state of optimal experience characterised by total absorption in the task at hand, thus a merging of action and awareness in which the individual loses track of both time and self. The flow state is experientially positive, and out of the flow experience emerges a desire to replicate the experience. Ilies, Wagner, Wilson, Ceja, Johnson, DeRue and Ilgen (2017) concur that flow experiences are associated with high levels of focus, concentration, action, and progress, and in a

study on flow at work and its effects on well-being, found that a type of experiential well-being, i.e. flow, was positively related to measures of declarative well-being, and that the fulfilment of individuals' needs for competence and autonomy partially mediated the influence of flow on declarative well-being outcomes.

4.3 Flow in education

Citing Alivernini and Lucidi (2011), Heublein (2014), Lassibille and Navarro Gómez (2008), Silva, Rodrigues and Leal (2019) highlight the high rates of lack of interest and boredom towards the learning process by students, claiming the time spent studying is truly tedious, and, as articulated by Kastantin and Novicevic (2008), that educators must find strategies to increase students' engagement in the teaching-learning process (Silva et al., 2019). Schmidt (2010) refers to Csikszentmihalyi that observed art students as they worked on their artistic creations to understand what led them to be passionate about their creative pursuits and found that students often became so absorbed in their work that they would effectively cut out any external distractions or obligations. Students would lose track of time, missing appointments, or meals, working late into the night, seemingly sustaining deep levels of both concentration and enjoyment for extended periods (Schmidt, 2010, p. 605).

In terms of the flow model and its application in the study of education, Schmidt (2010) states that studies of the flow experience have revealed consistency in the conditions under which these optimal states most often occur, referring to several researchers who confirm shared aims both in optimal experiences and in their underlying conditions, such as Csikszentmihalyi (1975/2000, 1990, 1996), Jackson (1995, 1996), Massimini and Carli (1988), and Perry (1999).

Schmidt (2010) observes that even though the flow model was developed more generally as a model of engagement, multiple applications to academic engagement is evident. Numerous conditions that facilitate flow can be found in classroom environments, and while most academic activities are not the result of student choice, opportunities to offer choice in learning activities are possible. Schmidt (2010) argues that the balance between challenges and skills can undoubtedly be modified to promote a state of optimal equilibrium for students. Additionally, goal setting and feedback are both standard practice of most classroom settings, and lecturers can curtail distractions to encourage attention to the task at hand. According to the model, Schmidt (2010) believes that students are likely to experience flow when engaged in academic tasks and have positive learning experiences if some or all the flow model conditions could be facilitated in classrooms.

Schmidt (2010) concludes that these positive experiences would motivate students to continue their deep engagement in tasks, desirous to maintain flow state. "As it is a dynamic process that keeps one in a flow state, learning would occur in order to keep one's skills in balance with the ever-increasing challenges presented by the classroom environment. Over time, such engagement would develop into long-term commitments to particular academic endeavours, and ideally, to increased success with related academic tasks" (Schmidt, 2010, p. 607).

In a study on gamification and its impact on flow state of accounting and marketing students, Silva et al (2019) found that educational games may be an effective means to create conditions for the flow, which may make game-based learning easier, arguing that games used in the teaching and learning process can reduce the boredom factor, increase the intrinsic and extrinsic motivation, concentration, and interest of students to learn. dos Santos et al (2018) highlights three benefits of flow state in education, namely (1) increase in students' learning, (2) more in-depth reflection, and (3) students' satisfaction. Their findings also suggest that Flow Theory can potentially be useful to deal with several concerns that could be addressed, such as students' feeling of achievement, creativity and imagination enforcement, exploratory behaviour, facility to accept changes and adaptations, feeling happy, satisfied, and cheerful, focussed intensity, influences on empathy and interest in games, internal locus of control, perceived usefulness and ease of use and sense of cognitive presence.

It is subsequently argued that by creating the conditions for flow in the teaching and learning experience of MBA students could enhance deep engagement, and improved academic performance.

Albeit that empirical studies on the application of Flow Theory in teaching and learning are fragmented and theoretically inconclusive in terms of, for example, (1) the lack of automatic mechanisms to identify if a student is in the flow state, (2) the impact of students' flow experience, (3) the need for techniques to measure flow state levels and (4) the need of adaptive mechanisms to aid students achieving the flow state based on student modelling (dos Santos et al., 2018), this essay proposes a conceptual framework for enacting flow state in teaching and learning of MBA students.

5. Research methodology

The literature on topics and themes related to pedagogy, andragogy, heutagogy and flow state is large, and diverse, including both qualitative and quantitative empirical work, editorial commentaries, theoretical work and case studies. A conventional systematic review methodology was deemed ill-suited to the challenges that conducting such a review would pose, and critical interpretive synthesis (CIS) (Dixon-Woods et al., 2006, p. 38) was decided upon as methodological approach. CIS starts with an ambiguous and tentatively defined phenomenon; conducts extensive albeit not complete searching; strategically samples from the literature; conducts appraisal and critique of the included literature and, through a process similar to primary qualitative research, aims to produce a theoretical output in the form of a synthesised argument (Dixon-Woods et al., 2005, p. 6). Otherwise explained by Bales and Sare (2014, p. 144) as (1) formulating the review question, (2) searching the literature, (3) sampling, (4) determination of quality, (5) data extraction, and (6) interpretive synthesis. According to Dixon-Woods et al. (2006, p. 39) CIS explicitly sanctions the integration of qualitative and quantitative evidence through an interpretive process.

A distinguishing feature of CIS is its recognition of the authorial voice in that it does not lay claim to a set of techniques that allows a 'reproducible' synthesis. Instead, the interpretive work required to produce an account of disparate forms of evidence is acknowledged, and it appreciates that alternative accounts of the same evidence might be possible using different authorial voices. However, all accounts should be grounded in the evidence, verifiable and probable, and that reflexivity will be a principal requirement. (Dixon-Woods et al., 2006).

In terms of formulating the review question in this study, the approach was highly iterative, modifying the question in response to search results and findings from retrieved literature. Searching the literature, generated extensive potentially relevant items, proving to be unmanageable, and subsequently only potentially relevant literature was identified to provide a sampling frame. For purposes of the synthesis, purposive sampling was initially applied to select literature that were clearly concerned with aspects of pedagogy, andragogy, heutagogy and flow state, partly informed by the scoping running up to the study. Sampling therefore involved a constant dialectic process conducted concurrently with concept generation.

As far as determination of quality is concerned, literature that appeared relevant was prioritised, rather than particular study types or literature that met specific methodological standards; hence the application of a low threshold was utilised to maximise the inclusion and contribution of a wide variety of literature at the conceptual level. Data extraction concerned systematically identifying themes pertinent to pedagogy, andragogy, heutagogy and flow state. In conducting the interpretive synthesis, a detailed inspection of the literature was the point of departure, gradually identifying recurring themes and developing a critique. Themes were then generated to help develop an argument, comparing the argument developed against the literature, and attempting to specify the reasoning and the relationship with the existing body of knowledge.

6. Results and discussion

Bertram (2022) asserts that "life's purest and most deeply satisfying moments come when we tap into a state of consciousness known as flow. The experience of being in flow comes when the past is suddenly forgotten, the future is irrelevant, and the mind is plunged into "the deep now" – a heightened state of effortless presence wherein we are able to learn at accelerated rates and perform at our best." Csikszentmihalyi (1996, pp. 111-113), describes nine main elements defining the characteristics of flow, which is as applicable in education as in other endeavours (ibid):

1. **Clear goals every step of the way.** Describing this element in terms such as, “the musician knows what note to play next” and “the surgeon is aware of how the incision should proceed moment by moment” indicates that, although the activity ultimately advances towards a higher goal, it is driven by the progressive realisation of the next small goal (Dietrich, 2004, p. 757).
2. **Immediate feedback to one’s action.** This element is closely related to the first. In this instance the “musician hears right away whether the note played is the one,” demonstrating the characteristic feature of the implicit system² that, due to the lack of higher-order representations, the event is not subjected to detailed analysis and feedback is binary and immediate. This also relates back to the first point in that the “musician knows what note to play next,” building a sequence with each step dependent upon the last (Dietrich, 2004, p. 757).
3. **Balance between challenges and skills.** Faced with a task that exceeds the skill level entrenched in the implicit system, we feel we must enlist the help of the explicit system³ to improve performance. However, this negatively affects performance and leads to frustration and anxiety. In contrast, tasks that do not test the implicit system’s full ability allow for the low-end interference of the explicit system. This leads to daydreaming or boredom but not feelings of self-actualisation (Dietrich, 2004, p. 757).
4. **Action and awareness are unified.** This element describes concentration as being “focused on what we do.” Phenomenologically, people in a state of flow report narratives that is consistent with decreased prefrontal function, such as the disappearance of self-consciousness, no worry of failure, a sense of timelessness, and no distractions (see below). Thus, flow is a state of hypofrontality⁴ with the notable exception of executive attention, which enables single-mindedness by means of selectively disengaging other higher cognitive abilities of the prefrontal cortex (Dietrich, 2004, p. 757).
5. **Distractions are excluded from consciousness.** This element of flow is a result of point 4. Humans appear to have significant control over what they attend to, and in flow, attentional resources are utilised to actively magnify the task at hand until it becomes the exclusive substance in the working memory buffer. It is this attentional endeavour that works to exclude other intruding information, whether sensory, emotional, or cognitive. The phenomenological result is an awareness that is limited to the here and now, without cognitive flexibility – akin to a “mental singularity” (Dietrich, 2004, p. 757).
6. **There is no concern of failure.** This element of flow is due to the singlemindedness. Without the ability to bring into focus additional information, worry of failure, along with other peripheral content, is barred from entering consciousness. Evidence suggests that a person’s cultural values and belief system reside in the prefrontal cortex (Damasio, 1994), flow is possibly characterised by several such phenomenological deductions (Dietrich, 2004, p. 757).
7. **Self-consciousness disappears.** Self-consciousness is a meta-representation of the highest order and possibly one of the first phenomenological subtractions to manifest itself in flow. There are simply not enough resources left to compute this highly sophisticated feature of consciousness (Dietrich, 2004, p. 757).
8. **Sense of time becomes distorted.** As mentioned above, temporal integration is a prefrontal function and the subtle modification of the perception of time is predicted in hypofrontality.

² The implicit system is skill or experience-based, its content is not verbalizable and can only be conveyed through task performance, and it is inaccessible to conscious awareness (Ashby & Casale, 2002; Dienes & Perner, 1999; Schacter & Bruckner, 1998).

³ The explicit system is rule-based, its content can be expressed by verbal communication, and it is tied to conscious awareness (Dietrich, 2004).

⁴ Flow necessitates a state of transient hypofrontality that empowers the implicit system to execute a task at maximum skill level with maximum efficiency (Dietrich, 2003, 2004)

Indeed, a sense of timelessness is one of the hallmarks of any altered state of consciousness (Dietrich, 2003).

9. *Activity becomes autotelic*⁵. This final element is an emphasising property of the state of flow (Dietrich, 2004, p. 757).

These nine elements defining the characteristics of flow serves as an empirically validated foundation on which to craft teaching and learning experiences for MBA students. The proposition being that if flow state could be enacted, deeper engagement will ensue and may improve student performance.

Another important consideration in pursuing flow state in students is assessments. To instil, for example, critical thinking in students, the relevant problem-based assessments used in andragogy will be more appropriate in most cases (Halupa, 2015). Furthermore, an obvious first challenge is to attempt to meet the needs of all students, and the second is to attempt to increase the educational maturity level of those students who may still be at the pedagogical level. It would be ideal for all MBA students to reach the level of heutagogy, but even with the advances in technology to enhance the journey towards heutagogy, it will be a challenging pursuit. MBA educators must deal with students from an educational system who are used to basic pedagogy and memorisation learning, and it can be difficult to assist these students to the next level where the pursuit of knowledge outweighs the pursuit of completion and results. In addition, the regulatory scrutiny of higher education institutions, for example on student retention and pass rates may make some faculty wary of experimenting with new methods that make students life-long learners, educated discerners and seekers of knowledge (Halupa, 2015). The journey from memorising information to finding and applying information is a long one, but a responsibility of MBA educators to pursue.

It is nonetheless argued that the endeavour to shift towards heutagogy could potentially be quickened by means of enacting flow state in the student experience. Considering, for example, Stoten's (2022) mapping of the formal heutagogic learning journey via the OEPA model described as orientation [O] (expectations, context, aspirations, purpose); exploration [E] (evaluating the challenge, defining the boundaries of focus, using abstract thinking); pathfinding [P] (strategising, coordinating resources, connecting with others); and arrival [A] (evaluating learning "distance travelled", Metacognition and setting future goals, reflexive thought), flow state holds significant potential in optimising the four phases.

6.1. Towards a conceptual framework for enacting flow state in MBA teaching and learning

Building on the flow state preconditions narrative, Kotler (2021) refers to "flow triggers", and states that researchers have to date identified twenty-two different flow triggers (Table 2) that all share one common denominator: "*flow follows focus.*" The flow state can only arise when all attention is directed at the present moment, and flow triggers drive attention into the now.

⁵ Flow research and theory had its origin in a desire to understand this phenomenon of intrinsically motivated, or autotelic, activity: activity rewarding in and of itself (auto = self, telos = goal), quite apart from its end product or any extrinsic good that might result from the activity (Nakamura and Csikszentmihalyi, 2002)

Table 2: 22 Flow Triggers (Kotler, 2021)

Individual triggers	Group triggers
<ul style="list-style-type: none"> • Curiosity / Passion / Purpose • Autonomy • Complete concentration • Risk • Novelty • Complexity • Unpredictability • Deep embodiment • Immediate feedback • Clear goals • Challenge / Skills ratio • Creativity / Pattern recognition 	<ul style="list-style-type: none"> • Complete concentration • Shared goals • Shared risks • Yes and... (additive interactions) • Close listening • Autonomy / Sense of control • Blending egos • Familiarity • Equal participation • Open communication

The categorisation of flow triggers into individual and group triggers is also valuable when considering the strong emphasis on syndication in MBA programmes. Although it can be argued that Kotler’s (2021) flow triggers are all contained, in one shape, form or the other, in Csikszentmihalyi’s (1996) main elements of flow, it nonetheless provides further semantic clarity to assist in crafting experiences in the teaching and learning design of MBA programmes.

In pursuit of this paper’s objective to develop a conceptual framework for the enactment of flow state in MBA teaching and learning, Figure 1 below illustrates the proposed approach.

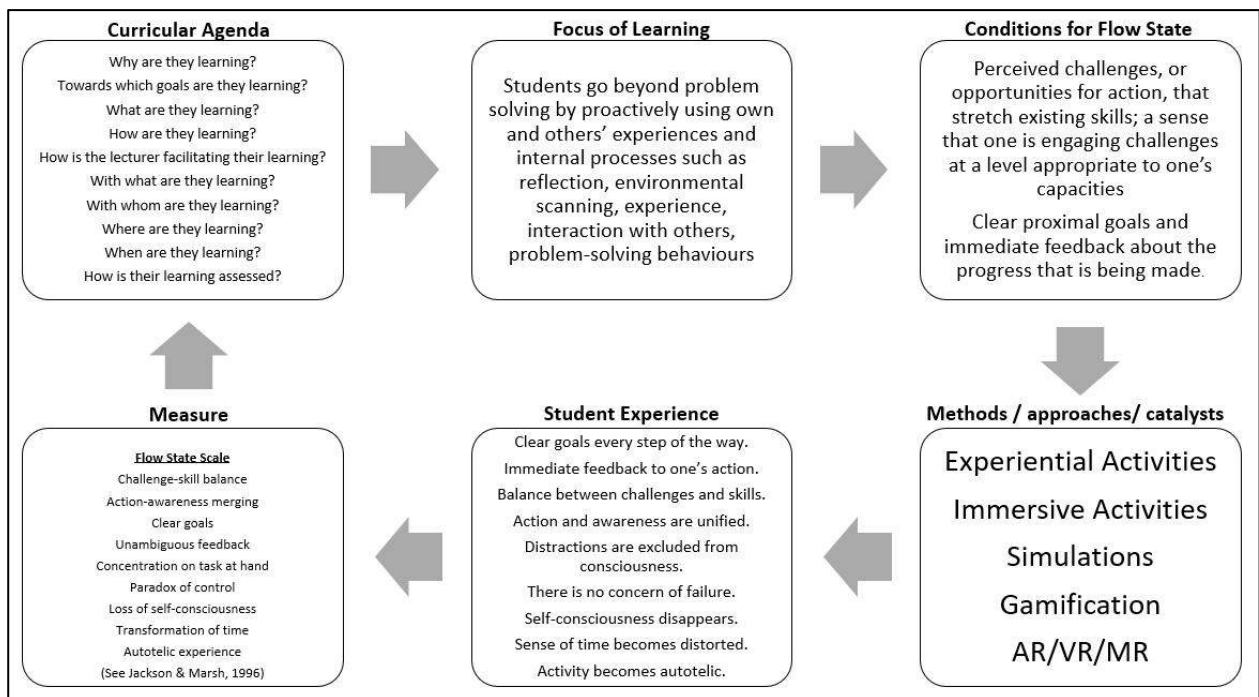


Figure 1: A conceptual framework for enacting flow state in MBA teaching and learning

The point of departure is to clarify the curricular design and drawing on Van den Akker’s (2010, p. 39) ten components that address ten specific questions about the planning of student learning, framing the components succinctly. The components being (*ibid*):

1. Rationale or Vision: Why are they learning?
2. Aims and Objectives: Toward which goals are they learning?
3. Content: What are they learning?

4. Learning activities: How are they learning?
5. Facilitator role: How is the lecturer facilitating learning?
6. Materials & Resources: With what are they learning?
7. Grouping: With whom are they learning?
8. Location: Where are they learning?
9. Time: When are they learning?
10. Assessment: How to measure how far learning has progressed?

Comprehensively addressing these questions will set the scene and establish the context within which to pursue experimentation with flow state enactment.

A next layer to consider would be the focus of learning to move towards a stronger heutagogic (self-directed learning going beyond problem-solving) orientation, as andragogy alone mainly emphasises task or problem centeredness as the focus of learning. The aim should, therefore, be to shift students' orientation beyond problem solving for them to proactively use their own and others' experiences and internal processes such as reflection, environmental scanning, experience, interaction with others, and higher order problem-solving behaviours - involving the complete being, i.e., head (cognitive), heart (emotion) and hands (physical). The impact of the three modes stimulated together can shift a student's perspective in a way that a focus on the cognitive part alone cannot. Instruction that uses only description and lecture becomes trapped within the repetition of its own jargon and can be meaningless to students.

In reflecting on the appropriate environment to create to facilitate the enactment of flow, the conditions for flow state (Nakamura & Csikszentmihalyi, 2002) and flow triggers (Kotler, 2021) must carefully be considered. The conditions must, for example, provide perceived challenges, or opportunities for action, that stretch existing skills. Students must have a sense that they are engaging challenges at a level appropriate to their capacities, along with clear proximal goals and immediate feedback about the progress that is being made. The evidence from literature suggest that these conditions are critical, and the importance of ensuring that they are met should not be underestimated. Note should also be taken of flow triggers at the individual level as well as the group level.

The methods / approaches / tools will require research, experimentation, and piloting initially to determine which methods / approaches / tools produce the best results in helping to enact flow in the various subjects covered in a typical MBA programme, and the integration of modules. Methods / approaches / tools could, among others, include experiential activities, immersive activities, action learning, simulations, gamification, augmented reality (AR), virtual reality (VR) and mixed reality (MR). It is the author's view that case studies will not suffice as method to enact flow state, because the case study perspective encourages the separation of thinking (formulation) from acting (implementation) and assumes that the world stands still while the formulation process takes place.

The achievement of the aforementioned milestones should result in students experiencing the elements that characterise flow (Csikszentmihalyi, 1996), i.e., clear goals every step of the way, immediate feedback, balance between challenges and skills, action and awareness are unified, distractions are excluded from consciousness, no concern of failure, self-consciousness disappears, the sense of time becomes distorted, and activity becomes autotelic.

Measuring the interventions is critical to identify gaps and inform improvements to feed back into the process again in pursuit of optimising deep engagement by students through the enactment of flow state experiences. The interventions can be measured by means of adapting the Flow State Scale of Jackson and March (1996) for purpose of fit to the MBA education context.

7. Academic leadership implications

To believe all approaches to teaching and learning on MBA programmes have been exhausted is not only parochial, but also irresponsible. Responsible management education also calls for a

commitment to continuous improvement to ensure relevance and meeting the needs of industry and society in general.

Saying we find ourselves in a complex, chaotic, and hence unpredictable age would be stating the obvious, not to mention the unprecedented change driven by the smart machine era. The demands on leadership and management practitioners to effectively lead and manage in this context mean that management educators must make curriculum innovation top priority and find creative ways in creating learning environments that immerse students in experiences as close to the real world as possible.

The conventional professorial approach of “sage-on-stage” to MBA teaching and learning will not suffice. Instead, MBA educators should adopt a “guide-on-the side” approach that develop capable students that know how to learn, are creative, have a high degree of efficacy, apply competencies in novel as well as familiar situations, and can work well with others. It is against this backdrop that deep engagement is essential, and where flow state enactment holds promise and potential. The conceptual framework, at the least, provides academic leadership of business schools with broad guidance to initiate experimentation with flow state enactment.

8. Limitations and suggestions for future research

The study attempted to contribute to address the challenge of facilitating students’ deep engagement in learning activities on MBA programmes by proposing a conceptual framework to enact flow state in the student experience.

The author recognises the multiplicity and complexity of teaching and learning on postgraduate level, as well as the impact of context and culture on higher education, and by no means position the conceptual framework as all-encompassing. It is argued, nonetheless, that an important foundation has been laid in the quest for facilitating students’ deep engagement in learning activities on MBA programmes.

Future research could be directed towards the development of a measuring instrument to measure MBA students’ experience in relation to the flow state constructs. Measurements in relation to student experience could furthermore inform curriculum design and be correlated with students’ academic performance to determine flow state intervention impact.

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South African MBA Students' Experiences During an International Study Tour

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Keywords

Business School;
Experiential Learning;
International Study
Tour;
MBA;
Reflective Essay;
South Africa.

Abstract

Business schools are encouraged to incorporate internationalisation strategies as a component of their MBA curriculum to become globally competitive and create internationally aware students, which is a requirement of global accreditation bodies. One internationalisation strategy incorporates international study tours, which is a niche segment of educational travel. Reflective writing, which involves experiencing something, reflecting and analysing the experience and then learning from the experience is a technique that is incorporated into these study tours. This study aims to explore the reflective essays of eleven second-year MBA students written daily during their tour to Germany. A qualitative approach was applied and data were analysed using a thematic analysis. Their experiences were organised into five major themes, namely (1) Applying Critical Thinking; (2) Gaining Knowledge about Destination Country/Company Processes; (3) Applying Cross-Country Comparisons; (4) Cultural Immersion and Sensitivity; and (5) Revealing Self-Awareness and Development. The findings indicated that the international tour increased their self-awareness, a broader understanding of German culture, while the industry visits and business seminars facilitated the students' ability to bridge theory with practice in line with the entrepreneurship curriculum. In addition, the study shows that such experiential learning programmes increase transferability of knowledge, which provides implications for management education.

1. Introduction

Contemporary labour markets seek business graduates who can operate in the global knowledge economy, given that the future of work is changing and challenging traditional labour markets (Grimshaw, 2020). Business schools have the responsibility to graduate business students with leadership and managerial competencies that can adapt to cultural diversity across different contexts (Le et al., 2018; Park et al., 2018). In response to the global changes, business schools are internationalising their curricula to aid students to effectively operate in the global business environment, while benchmarking their teaching, research and societal impact activities to maintain reputation and prestige (Borsetto, 2021; Ghani et al., 2021).

Internationalisation of the curriculum is based on the inclusion of dimensions related to international and intercultural as well as teaching and learning arrangements, whilst being mindful of the learning outcomes. The dimensions of an internationalised curriculum are connected with entrenching globally specific knowledge acquisition and sustainability (Ghani et al., 2021). In terms of the international and intercultural dimension, leadership capabilities can be developed through international exposure, such as, international study tours for students to expose themselves to local conditions, enrich their cultural understanding and create intellectual and cognitive knowledge growth. Thus, geared towards

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developing critical thinking, industry and peer networks and adding to broadened views of economic markets and local regulations.

A method of internationalisation is through experiential education programmes, such as international tours, which are specialised educational travel whereby students receive business-place experience through business seminars, meeting with industry experts, cultural excursions and networking. Some MBA programmes include the international tour as part of an elective course and expect students to include a reflective report, which integrates their observations and experiences (Stern & Powell, 2020). There is a strong movement in experiential learning programmes to foster reflective practice, which is valuable for learning and critical thinking. According to Kolb's Experiential Learning Theory (Kolb, 1984, 2015; Kolb & Kolb, 2017), the reflection is part of the abstract conceptualisation whereby students' reflections, observations and experiences form new avenues of critical decision making in a global context (Gomez-Lanier, 2017; Stern & Powell, 2020).

Against this background, in the context of this study, MBA students who participated in this international study tour were required to maintain a reflective journal of their experiences. Mezirow (1998) defines critical reflection as a way for students to integrate theory with practice, which can facilitate self-development and growth, which is beyond the traditional classroom setting. Reflective journals aid in reinforcing learning through critical reflection, synthesis of perceptions, finding meaning from experiences and connecting theory to practice (Kuechler & Stedham, 2018).

Reflection supports continuous learning in practice. In this line, students were requested to document their daily experiences by making two entries per day, prior to a visit and after a visit. Thus, the reflective journal acted as a method to express their satisfaction, learnings and provide constructive criticism about the international tour. The study is centred on the effects of such an experiential learning trip on their cultural immersion, self-development and new knowledge acquisition. The study used a thematic analysis to explore the reflective narratives of MBA students who travelled to Germany in June 2017 and addresses the following research question: *How does an international study tour support MBA students' learning experience?*

The structure of this paper consists of the following sections: First, the problem, research objectives and hypothesis are presented. This is followed by a literature review, which begins by outlining the *a priori* theory used as a conceptual lens for this paper. The literature review continues with a brief overview of strategies of internationalisation in developed countries and South Africa, a conceptualisation of internationalisation in business education and an overview of international study tours. Thereafter, a brief description about the context of this study, sampling, data collection procedures and analysis are discussed. The analysis includes an interpretation of the data and follows with the implications for business school management. Finally, the conclusions are presented, which includes the limitations of the study and avenues for future research.

2. Problem Investigated

Many researchers have paid attention to the transformational learning practices that lead to international awareness, knowledge spillovers and reflection among business students (Leal-Rodríguez & Albort-Morant, 2019; Stern & Powell, 2020; Kosnikov et al., 2021). Excursions to learn and see foreign companies' operations, including technologies driving future developments enhance students' knowledge of opportunities and challenges in the global business environment. By applying Kolb's learning cycles (Kolb, 1984, 2015; Kolb & Kolb, 2017), the knowledge gained through concrete experiences, such as participation in international industry excursions lead students to grasp global concepts, which are reinforced by reflection of their experience.

In this line, the promotion of experiential learning programmes into curricula allows business students to comprehend theoretical concepts better and to operate at a global level. Knowledge spillovers originate from an (initial) stock of knowledge that is continuously updated and extended via experiential learning, in this case experiential learning through International tours (Lattacher et al., 2021). Therefore, the problem statement of this research is that the learning experience of MBA

students from international study tours for South African business schools to facilitate knowledge acquisition, cultural intelligence and critical thinking has been under-explored.

3. Research Objectives

The research objective of the study was “*To gain deep and rich understanding of the second-year MBA students’ learning experiences from an international study tour*”. The secondary research objectives were as follows:

- To explore whether the international study tour experiences enhanced the knowledge transfer from the classroom to the students’ international management capabilities;
- To explore whether experience-based practices promote business school students’ cognitive knowledge growth; and
- To explore whether experience-based practices promote business school students’ socio-cultural intelligence.

4. Hypotheses

Experiential learning presents positive externalities for the MBA students, but also for business schools and other areas of social sciences, such as economics and entrepreneurship (Kosnikov et al., 2021). This study hypothesises that international tours are based on the perception that experiential learning programmes form part of transformational learning, which improves students' learning and experience (Kuechler & Stedham, 2018; Kosnikov et al., 2021). In this study, the written narratives (reflective essays) of eleven second-year MBA students were thematically analysed, which aids in gaining a rich understanding of their learning experience during their international study tour in Germany during June 2017. The themes that emerge from the analysis will underscore that internationalisation strategies should be positioned as a central part of the business education curriculum.

5. Literature Review

5.1. Theoretical Perspective

The Experiential Learning Theory (ELT) stems from the work of Dewey (1897, 1938) and Kolb (1984), who argued that learning is a dynamic, multi-dimensional and circular process, which leads to increased human adaptability. Furthermore, ELT is widely used in the management discipline and an appropriate guiding framework in the context of this study, as student international study tours (a form of field trips) is commonly associated with experiential learning in curricula (Gomez-Lanier, 2017; Stern & Powell, 2020).

ELT emphasises the role that experience exerts on learning, from the action of grasping to transformation. The action of grasping in ELT is cyclical, which includes concrete experiences, reflective observation, abstract conceptualisation and active experimentation (Kolb et al., 2001; Kolb, 2015; Kolb & Kolb, 2017). Concrete experiences refer to the knowledge acquisition through participation, followed by reflection of the experience to determine methods of approach. Abstract conceptualisation is the process whereby students integrate reflections, observations and experiences toward a logical theory followed by active experimentation that includes new avenues of decision making (Gomez-Lanier, 2017; Stern & Powell, 2020).

Against this background, ELT involves the translation of direct experience to reflection and new learning. For example, an empirical study about experiential learning practices in a Spanish Business School found that the inclusion of the methodology increased students understanding and competencies as their performance revealed that they were able to bridge theory and practice (Leal-Rodríguez & Albort-Morant, 2019). In addition, research conducted on a study tour to India by a group of final-year Information Systems students found that the study visits coupled with industry excursions enhanced students’ understanding of local culture, ethics and local social norms, through their lived experiences on the tour (Hol et al., 2016). Thus, the experiential learning cycle is

advocated as a methodology that offers a holistic experience that can enhance learners' inductive abilities and cognitive growth.

5.2. Strategies for Internationalisation of Higher Education (IoHE)

Internationalisation is a key change agent in developing and developed economies (De Wit & Deca, 2020). In response, international organisations, such as the World Bank, UNESCO, OECD and higher education institutions (International Association of Universities and European Universities Association) have prioritised internationalisation in their reform mandate (de Wit & Deca, 2020; de Wit & Altbach, 2021). Countries leading in IoHE are Europe (EU), Canada and the USA (de Wit et al., 2015). These countries have advocated that internationalisation promotes inclusion and cultural awareness and have been intentional in their process of integrating international, intercultural and global dimensions into their post-secondary education. Table 1 shows various strategic approaches undertaken by these countries.

Despite differences in the internationalisation strategies of countries, synergies are observed in their philosophies. For example, there are principal philosophies, such as internationalisation at home, student mobility, student and staff exchange (Department of Education and Skills, 2016; DHET, 2017; Department of International Trade Diversification, 2019).

Table 1: Strategic Approaches by Europe, Canada and the USA

	Organisation	Strategic Approach	Description	Literature Source
Europe	European Union	European Community Action Scheme for the Mobility of University Students (ERASMUS) Since late 1980s	<ul style="list-style-type: none"> • Strategic Internationalisation, which allows students from the EU to undertake three- to twelve- month exchange in the EU. • 972 HEIs from 37 countries participating in the programme 	Erasmus Programme, 2022; European Commission, 2022
	Partnership between 48 countries (European Higher Education Area - EHEA), which is a product of discussions that occurred after signing of the Sorbonne Declaration in 1998	Bologna Declaration launches the Bologna Process (1998/1999)	<ul style="list-style-type: none"> • Strategic Internationalisation Project in HE • Focused on student and staff mobility and increased employability as the primary goal. 	de Wit & Deca, 2020; de Wit & Altbach, 2021
USA	Department of State's Bureau of Educational and Cultural Affairs (ECA)	Fulbright Programme	Leading international educational exchange programme	Farrugia et al., 2016
		Education USA	The programme assists USA HEIs in recruiting international students in 170 countries	ECA, 2022
Canada	Department of International Trade Diversification	International Education Strategy 2014-2019	Segmented marketing plan to attract international students, due its high contribution to Canada's GDP.	Department of International Trade Diversification, 2019
		Building on Success: International Education Strategy 2019-2024		

On the African continent, South Africa holds a pivotal position for student mobility as it attracts a high number of students from the Southern African Development Community countries (Bhandari et al., 2011; Lee & Schoole, 2015). The South African government's efforts to promote internationalisation commenced with the restructuring of the higher education sector (Bhandari et al., 2011) and includes the ministry of Higher Education and Training and Basic Education. Furthermore, the government promulgated the Draft Policy Framework for Internationalisation of Higher Education in South Africa in 2017 (DHET, 2017). Table 2 provides an overview of the strategic approach.

Table 2: Strategic Approach by South Africa

South Africa	Strategic Approach	Description	Literature Source
Department of Higher Education and Training (DHET)	Draft Policy Framework for Internationalisation of Higher Education in South Africa	National framework for internationalisation of higher education whereby HEIs can develop and align their institutional policies and strategies. The rationale is as follows: <ul style="list-style-type: none"> To position the higher education system to be competitive in a globalised world; To advance the quality of higher education; and To benefit society and enhance opportunities for higher education to contribute to the public good. 	DHET, 2017, p. 19

5.3. Conceptualising Internationalisation in Business Education and Entrepreneurship Education

The twenty-first century has created significant changes in the global economy, which has necessitated the need for higher education institutions, such as business schools to develop leaders with differentiated business capabilities (Hawawini, 2016; AMBA, 2019; Ghani et al., 2021). As a response to the need for global leadership competencies, business schools apply internationalisation strategies to equip students with the skills necessary in a global business environment. Similarly, internationalisation strategies distinguish business schools and increase their competitive advantage, which boosts accreditation, global rankings, student demand and revenue (Guillotín & Mangematin, 2015; Hawawini, 2016). Additionally, internationally accreditation bodies, such as the Association of MBAs (AMBA) and the European Foundation for Management Development (EFMD) states that internationalisation of higher education is proven to promote quality education and a response to globalisation (AMBA, 2019; Borsetto, 2021; EFMD Global, 2022).

Business education follows an interdisciplinary practice, which includes various functional areas, such as strategic marketing, operations management, financial management and accounting (Kosnikov et al., 2021). This form of education also expands into other areas of the social sciences, such as economics. Thus, the nature of business education is that it transcends borders and often applies comparative studies to understand how businesses interact in the macro and international environment. For instance, developing economies are becoming important in the global arena, which requires business educators to coordinate curricula that extend knowledge on the heterogenous nature of developing countries as markets expand.

Globalisation has reduced trade barriers and boosted technological progress, which has afforded small and medium sized enterprises to access the supply chains of overseas companies. This opportunity has allowed modules such as entrepreneurship to integrate international elements into its teaching (Gonzalez-Perez & Leonard, 2015; Kosnikov et al., 2021). In line with the SDGs, entrepreneurship education, which includes innovation is becoming an urgent area for contemporary research and teaching. Entrepreneurship is a driving force for job creation, innovation and economic growth and supports pillar eight of the SDGs, which aims to “*promote inclusive and sustainable economic growth, employment and decent work for all*” (United Nations, 2015). In developed economies, small businesses account for over 90% of all formal businesses and contribute significantly to GDP, while creating employment (World Bank, 2020). Therefore, entrepreneurship education cannot be taught using traditional pedagogies, which increases the need for business schools to increase experiential learning programmes that incorporate international exposure to present business students with modern and relevant knowledge acquisition (Hol et al., 2016).

5.4. The Importance of International Study Tours

Business schools include international study tours to meet internationalisation priorities and Ortiz (2004) explains that this form of experiential learning is a unique method to function in the global economy. International study tours may be non-credit bearing, credit bearing or part of a Global Immersion Programme (Brennan & Bae, 2018b). Some MBA programmes include the international tour as part of an elective course and expect students to include a reflective report, which integrates their observations and experiences (Stern & Powell, 2020).

Thus, the mobility of students, through international study tours creates both learning opportunities and knowledge transfer that result in the spill over of ideas, knowledge and experiences (Leal-Rodríguez & Albort-Morant, 2019; Stern & Powell, 2020). Dishman (2016) asserts that business school students need to engage in problem solving as a crucial competency for innovation and business operations. The interactions through international study tours allow for collaboration, which can lead to the sharing of challenges and present an opportunity to debate solutions across fields. For example, it is argued that connectivity and interactions allow for knowledge acquisition and create positive spill over effects in learning and innovation (Clarysse et al., 2014; Woolley, 2017; O'Connor et al., 2018). In economic terms, this results in a positive externality for the country of origin, which echoes the intention of internationalisation reform.

Business schools that underinvest in the international mobility of students can cause negative externalities for knowledge transfer, which influence a region and country's endogenous growth (Konno, 2016; Fujiwara, 2017; Ferraz et al., 2018). Furthermore, business schools need to package international study tours insofar that they meet the internationalisation reform agenda priorities and allow for cultural immersion, self-development and the appropriate knowledge acquisition for MBA graduates.

6. Research Methodology

6.1. Context and Sample

The current study used the reflective essays of eleven (n=11) second-year MBA students in a business school from a large public university in South Africa. All the MBA students who participated in the international study tour to Germany were informed of the study orally and in written format. The students travelled to Germany in 2017, as part of an experiential learning programme, which formed part of an entrepreneurship and innovation themed international study tour. The international study tour was non-credit bearing and was optional for the MBA students. However, there were specific criteria of acceptance onto the tour, such as the final assessment of their business plan, amongst others. The objective of the entrepreneurship and innovation theme-based international study tour was as follows:

“To expose students to new possibilities by visiting a variety of sectors. This trip must take them out of their 'comfort zones' - in other words, start them thinking about new fields or innovation in their existing field.” (Professor of Entrepreneurship)

Prior to departure, the responsible faculty member (Professor of Entrepreneurship) discussed the academic content, history of the destination country and cultural aspects to improve the student readiness for the tour. During the tour, the accompanying faculty (Professor of Entrepreneurship and Professor of Computer Science) supported the overall objectives of the programme to enrich the experience and applied reflective practises in the post-trip follow up phase. Essentially, summarising the academic staff support into three categories: providing clear tour expectations; subject matter preparation; and reflective practices. Figure 1 provides a summary of the structure of the tour after the acceptance phase.

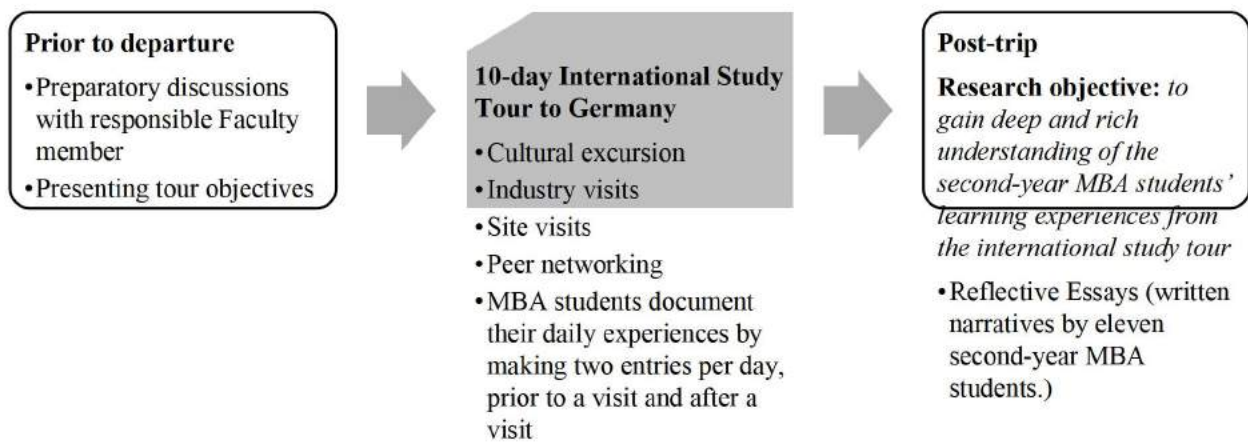


Figure 1: International Study Tour Summary Structure (Post-Acceptance Phase)

The final phase of the international study tour comprised of a reflective essay after their return. Reflective essays provide a narrated account of students' lived experiences, which provides a rich source of information about the educational experience and supports curricular improvement. Thus, the aim of the research was to gain deep and rich understanding of the second-year MBA students' learning experiences from the international study tour.

6.2. Data Collection and Analysis Procedure

The current study followed a qualitative approach and written narratives (reflective essays) were analysed using thematic analysis. The aim of the thematic analysis was to find patterns derived from the participants' perspectives, both their similarities and differences (King, 2004; Braun & Clarke, 2006). Prior to beginning the analysis, the student essays were collected and anonymised. The three authors' (S.B., M.C., A.C.) read the essays independently and coded segments of the text data using the participant perspective coding schema (Vaismoradi et al., 2016). Codes were labelled, defined and described in the initial iteration and an open coding schema was applied. Data were analysed deductively, using the semantic level and the approach was driven by the research question: *How does an international study tour support MBA students' learning experience?* Following the open coding, a codebook was developed after consensus was reached between S.B; M.C; A.C. Consensus was reached by encouraging the development and consideration of each contributor's unique perspective (Schielke et al., 2009).

After the codebook was developed, a theme search was performed. Codes were examined to see how well they fitted together to form a theme. Using Atlas.ti, a qualitative data analysis (QDA) software application, codes were created and organised using a colour scheme and allocated to a Code Group in the QDA software (Friese, 2016). Table 3 provides a selection of student quotations exported from Atlas.ti, which includes associated themes. Student quotations selected to illustrate the themes are provided in the Results (Section 4) section with pseudonyms, such as *MBA Student Female*. To increase the validity in the findings, S.B, M.C and A.C. discussed potential biases, the data analysis procedure and linked the findings to the current literature (Table 4).

Table 3: Sample participant quotations and themes (ATLAS.ti Scientific Software Development GmbH [ATLAS.ti 9 Windows], 2021)

Sample participant quotations	Participant Identifier	Major Themes
<i>Berlin became the deep tech cluster and businesses like Sirius minds is a prime example of how businesses who understand their interdependency on government, researchers and each other can thrive if they work together.</i>	MBA Student-Female Ref ID (1:2)	Applying Critical Thinking
<i>Interesting area, and again links back to the entrepreneurship ecosystem that we discussed at length in class. Really brings home the idea that once all the key pieces are in place such as transport, energy, water, government, funding, schooling and trades schools, venture capitalists and tech innovators are combined in a small space and given access to each other, things happen rather quickly!</i>	MBA Student-Male (Ref ID 9:9)	Applying Critical Thinking
<i>This company is a perfect example of that is possible if Government realise the potential of entrepreneurship. This company for me can help decrease the failure rate of start-ups as many problems can be addressed and ironed out before the company is even started.</i>	MBA Student-Female (Ref ID 2:3)	Applying critical thinking Applying Cross-Country Comparisons
<i>The greatest learning for me as someone who works with small businesses was the support system they get from different organisations such as Sirius Minds. If our government and business were to support and fund such initiatives, the chances of success for our start-ups would be greatly improved</i>	MBA Student-Female (Ref ID 11:7)	Applying Cross-Country Comparisons
<i>What stood out for me is the patriotism and optimism of the German people who have a past almost as difficult as ours to overcome but have grown in leaps and bounds to create a united future Germany.</i>	MBA Student-Male (Ref ID 15:5)	Cultural Immersion and Sensitivity
<i>I like the controls that are in place, the cleanliness of the pump house and the non-chlorinated water, all very surprising for us. Surplus water and surplus energy seems to be a great asset to Berlin, and I can understand why opening a manufacturing operation in the outskirts of Berlin, makes sense</i>	MBA Student-Male (Ref ID 9:6)	Gaining knowledge about destination country/company processes Applying critical thinking

Table 4: Relating themes to literature (S.B; M.C; A.C) for validity consensus

Theme	Theme Definition	Literature Support
Applying critical thinking	Refers to students' increased understanding of theoretical concepts through business seminars, site tours and presentations. Thus, leading to an increased understanding of theoretical concepts through experience-based practices, which means that students applies inductive and deductive reasoning by processing previous and new information.	Ortiz, 2004; Dishman, 2016; Hol, 2016; Gomez-Lanier, 2017; Brennan & Bae, 2018a; Leal-Rodríguez & Albort-Morant, 2019; Fedesco et al., 2020; Ghani et al., 2021
Cultural immersion and sensitivity	Refers to a students' exposure to a different country's local conditions, cultures, customs and social norms leading to a consolidated understanding about the foreign country. For example, the concrete experience provides students with a story leading to reflective practices for them to draw conclusions.	Hol, 2016; Hol et al., 2016; Brennan & Bae, 2018a, 2018b; Le et al., 2018; Park et al., 2018; Stern & Powell, 2020
Revealing self-awareness and development	Refers to the personal and social development, which is a product from experiential learning programmes. For example, higher degree of motivation, autonomy and academic performance.	Ortiz, 2004; Hol et al., 2016; Gomez-Lanier, 2017; Larsen et al., 2017; Brennan & Bae, 2018b; Ryan & Deci, 2018
Applying cross-country comparisons	Refers to students' acquisition of knowledge of the host country way of doing business. In entrepreneurship theory, such knowledge acquisition leads to positive spill over effects in learning and innovation.	Clarysse, Wright, Bruneel & Mahajan, 2014; Woolley, 2017; O'Connor, Stam, Sussan & Audretsch, 2018
Gaining knowledge about destination country/company processes		

Additionally, a global overview of the frequencies of the codes (themes) was created, and, *albeit* a quantitative approach, it assisted to easily locate the density of codes. This was achieved by using the *Code-Document Table* function in Atlas.ti. The Code-Document Table revealed the number of code labels and the absolute number of quotations (Kalpokaite & Radivojevic, 2019).

Codes that were repeated in a patterned way in multiple cases were grouped to establish a theme. The judgment was based on the comparison of codes that revealed links between codes to allow for the nomination of themes. Themes were descriptive as they described the general pattern in the data to address the research question and five major themes were developed: (1) *Applying Critical Thinking*; (2) *Gaining Knowledge about Destination Country/Company Processes*; (3) *Applying Cross-Country Comparisons*; (4) *Cultural Immersion and Sensitivity*; and (5) *Revealing Self-Awareness and Development*. The network diagram in Figure 2 provides a broad overview of the five major themes and semantic links extracted from the reflective essays, which is driven by the research question: *How does an international study tour support MBA students' learning experience?*

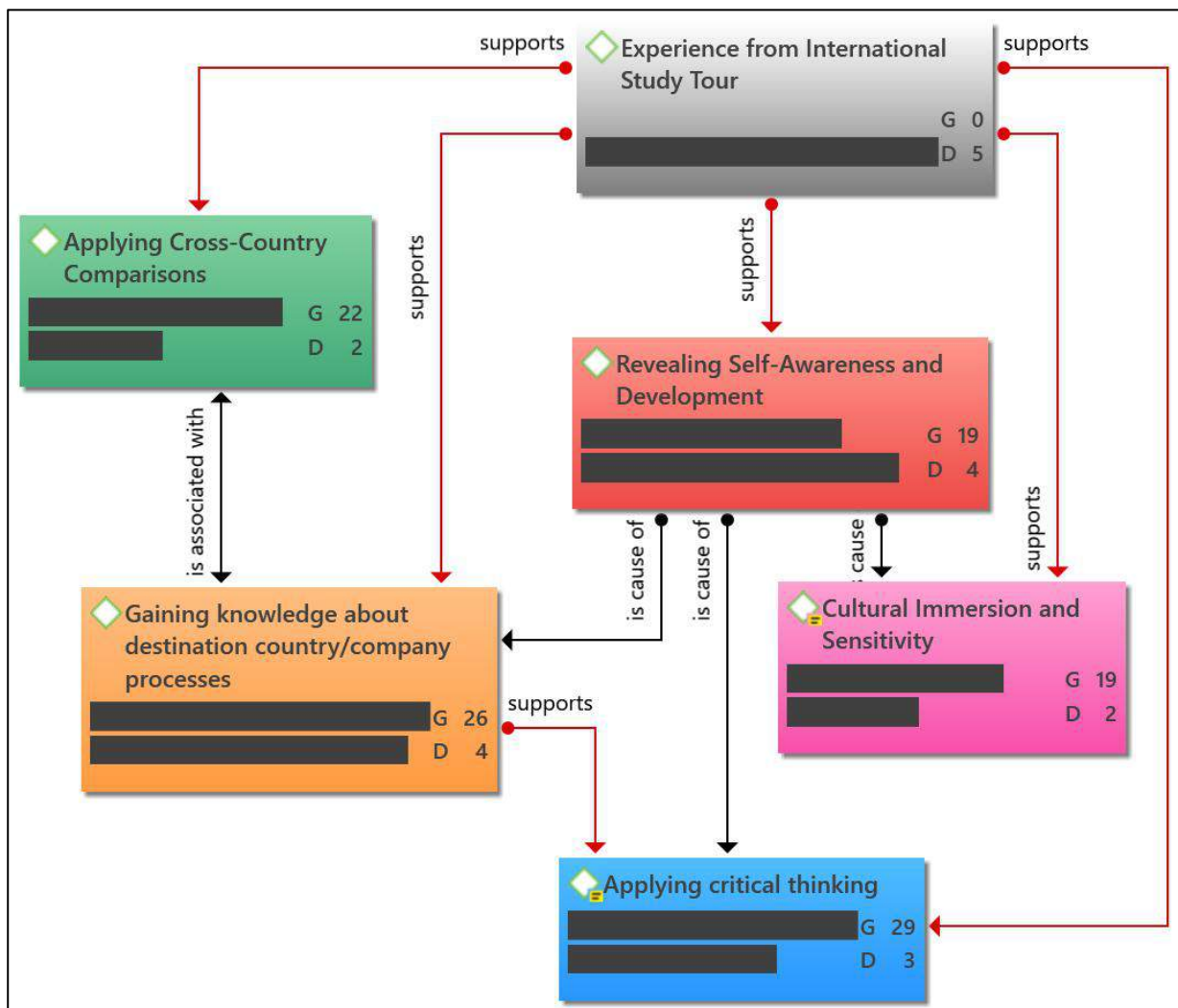


Figure 2: Major Themes (ATLAS.ti Scientific Software Development GmbH [ATLAS.ti 9 Windows], 2021)

7. Results and Findings

Five major themes describing the students' learning experiences from the international study tour to Germany were developed. The students expressed these themes repeatedly and they made similar statements about them. All MBA students reported positive experiences in their reflective essays and the themes were developed from the accounts of their excursion to industries, seminars with industry professionals and cultural experiences, such as visiting historical sites. Overall, the MBA students showed a strong appreciation of their international study tour.

7.1. Theme: Applying Critical Thinking

A major challenge for business schools is to develop a curriculum that presents a holistic overview of conditions in the market that relates to the social, legal, economic, political and technological dimensions (Ortiz, 2004; Hol et al., 2016; Gomez-Lanier, 2017). Business students need to engage in

problem solving as a crucial competency for innovation and business operations (Dishman, 2016). Most of the MBA students stated that the direct experience from industry visits, business seminars and cultural excursions created learning opportunities on topics affecting South Africa's endogenous growth, both positive and negative externalities. Thus, showing their ability to critically reflect and connect with the entrepreneurship curriculum. One participant stated the following:

“Berlin became the deep tech cluster and businesses like Sirius minds is a prime example of how businesses who understand their interdependency on government, researchers and each other can thrive if they work together.” (MBA Student Female_lines 2:4)

As previously stated, the students reported an ability to connect concepts from their entrepreneurship module, leading them to critically reflect as expressed in their essays. They expressed links to the economic issues prevalent in South Africa, such as poor targeted government policies. In fact, students were able to link previous seminars on topics of hidden champions to their exposure on the international study tour. Three excerpts are provided, which act as data evidence:

“IHP (which struck me as one of the “hidden champions” we had heard about earlier in the year.” (MBA Student_Male, lines 8:2)

“If our government and business were to support and fund such initiatives, the chances of success for our start-ups would be greatly improved. This together with the spirit of collaboration found between Slubice and Frankfurt Oder would go a long way towards contributing to a greater economy.” (MBA Student_Female, lines 11:8)

“But the concept is very good and stimulates innovation. The fact that the rent is low for start-ups and that these businesses are fostered was quite an incredible concept.” (MBA Student_Female, lines 2:6)

7.2. Theme: Gaining knowledge about Destination Country/Company Processes

The students' essays highlighted that innovation was a central driver to Germany's success and indicated that the country focuses on innovative processes in their business models. In their reflective essays, the students explained that companies that were visited were innovative in their operations. One site visit, to a company in the steel and mining sector provided students with a factory tour followed by a presentation with a question-and-answer opportunity. All the students complimented the technology employed in terms of processes, the sustainability measures in place as well as the level of automation replacing labour what is deemed labour-intensive in South Africa. One feature of the entrepreneurship course is on Industry 4.0 and students were able to apply theory to practice in their reflective accounts. Three excerpts are provided, which are representative of the students' reflective essays:

“The ‘technology’ employed for potable water production at the Water Purification Plant bowled me over. Yes, it is true that Berlin has an abundance of groundwater, but for the fact that they do not use chemicals to purify their potable water was just amazing for me.” (MBA Student_Female, lines 3:9)

“The first company we visited was ArcelorMittal, one of the biggest companies in the manufacture of steel. It was breath taking to notice how steel is manufactured. I would have expected to see a massively labour-intensive plant but, surprisingly, there were few labourers, and the plant is techno-driven.” (MBA Student_Male, lines 1:6)

Furthermore, the entrepreneurship course teaches students about the importance of networks as a catalyst for co-creation, which can lead businesses into the supply chains within specific sectors. Students' are taught that connections can create spinoffs as well as knowledge spillovers (Brown & Mason, 2017; Stam & Spigel, 2018). The site visit to Deutsche Bank afforded the students an opportunity to learn and see how a German bank supports local entrepreneurs to improve their competencies, networks and promote their services or products. The following excerpt is taken from a student who reflected on the site visit to Deutsche Bank:

“The workshops for expats that the bank offers and the functions that they host I found genius. The level of interaction and going the extra mile to have that personal relationship with their customers, even giving them space (for free) to promote their products is super innovative.” (MBA Student_Female, lines 2:17)

7.3. Theme: Applying Cross-Country Comparisons

The entrepreneurship and innovation course teaches MBA students that formal institutions have a twin ability to reinforce or weaken local economic development (Fuentelsaz et al., 2019). The concept of reinforcement is linked to high quality government bureaucracy and policy and the opposition of weak policies. The narratives from the reflective essays showcased that the MBA students acknowledged the economic and socio-economic challenges faced by Africa and reflected on the value of stakeholders, such as government to facilitate economic development. The following quotations are representative of the students’ comments:

“The collaboration between government parastatals, agencies and institutions with corporate was exemplary. The dynamics are different than here in South Africa; but they showed how efficient one can be when they have the right people in place.” (MBA Student_Male, lines 16:1)

“The greatest learning for me as someone who works with small businesses was the support system they get from different organisations such as Sirius Minds. If our government and business were to support and fund such initiatives, the chances of success for our start-ups would be greatly improved.” (MBA Student_Female, lines 11:6)

“I also found the co-operation between businesses, public organisations and universities quite amusing. Something that we can learn as a country.” (MBA Student_Female, lines 10:6)

The narratives indicated that the international study tours allowed students to critically compare the status quo in South Africa with Germany. A product of such exposure can lead to opportunities and knowledge transfer that result in the spill over of ideas, knowledge and experiences (Leal-Rodríguez & Albort-Morant, 2019; Stern & Powell, 2020). In particular, the critical comparison can result in a positive externality for the country of origin.

7.4. Theme: Cultural Immersion and Sensitivity

Students reported that they enjoyed the opportunity to experience a foreign culture, indicating that the excursions to historical sites enhanced their understanding of local culture and social norms. In addition, students positively described the architecture and cuisine, which played a role in immersing themselves into a different culture. Students also showed sensitivity in learning about German history, the effects from the World War and the strides the country has taken to bridge the past. The following quotes are representative of the students’ comments:

“Wow, the church and the church gardens were magnificent. The whole town was majestic and the art and detail inside the church was way over the top, but an experience to see.” (MBA Student_Female, lines 2:11)

“German history is very interesting, it has a strangely familiar but fading pain that comes up as they tell it and yet the Germans do not shun it, but they embrace it. It is almost as though these old buildings and monuments have been reduced to mere spectators to how far the nation has since come, and telling the history it is not painful for them anymore.” (MBA Student_Female, lines 3:4)

The entrepreneurship course teaches students about the role of culture and social norms on developing entrepreneurial attitudes and behaviour (Kibler, Kautonen & Fink, 2014; Fritsch & Wyrwich, 2014, 2018; Fritsch, Obschonka & Wyrwich, 2019). Culture is explicated as a catalyst for individuals to start a business and the following quotation is representative of the students’ reflections, which underlines the social norms in Germany:

“During these visits I began to appreciate the German system of enabling and creating opportunities for all. I always believed that Germany was a very individualistic society, it is actually quite a collectivist society and very open to the world.” (MBA Student_Female, lines 14:6)

Against this background, international study tours present an opportunity for students to experience a foreign culture, business dynamics in a foreign business environment and improve their cultural intelligence (Brennan & Bae, 2018a).

7.5. Theme: Revealing Self-Awareness and Development

International study tours present an opportunity for students to experience a foreign culture, business dynamics in a foreign business environment and improve their cultural intelligence (Brennan & Bae, 2018a). Thus, the expectation of experiential learning programmes, as they pertain to international study tours is a combination of personal reflection (inward and outward) and self-development. Several reflections from MBA students focused on their self-awareness and development. Three students described their experiences as follows:

“I recommend that the Business School should continue to pursue such international study tours as they will enlighten the students about how the first world countries operate. This will enable the students to tap into the good things that are done by developed countries with a view to address some of the challenges that are faced by our emerging economy.” (MBA Student_Male, lines 1:10)

“I came away from there pondering what true innovation meant, versus what being a merchant of goods already produced meant. Are we being innovative? Can we be? Or are we only following others and simply being the man in the middle between the buyers and the sellers.” (MBA Student_Male, lines 9:11)

“It was obvious that the German culture is not one of entitlement or “sit back and wait until someone else gives me a handout”, but rather of “what can I do today to make this work”.” (MBA Student_Female, lines 2:24)

By having the opportunity to engage on international study tours the students showcased an increased self-awareness, which is a product of cultural immersion, new knowledge acquisition and critical reflection. According to Ghani et al. (2021), leadership capabilities are formed through immersion into the local conditions, which enriches their cultural understanding and cognitive knowledge growth. Thus, international study tours are geared towards developing critical thinking, industry and peer networks and adding to broadened views of economic markets and local regulations.

8. Managerial Implications

Most management classes in MBA curricula are taught using traditional techniques, however subjects such as entrepreneurship cannot be limited to traditional pedagogies. Kuechler and Stedham (2018) assert that transformational learning, which includes a mindfulness practice are essential for MBA courses that are constantly faced with shifting worldviews. The current study aimed at understanding MBA students’ learning experiences during the entrepreneurship and innovation international study tour to Germany by analysing their reflective essays.

The results from the thematic analysis of the MBA students suggest experience-based practices, through international study tours is an effective method to develop their competencies. The discovery within the narratives allowed for five major themes to emerge, namely (1) Applying Critical Thinking; (2) Gaining Knowledge about Destination Country/Company Processes; (3) Applying Cross-Country Comparisons; (4) Cultural Immersion and Sensitivity; and (5) Revealing Self-Awareness and Development. Thus, the thematic analysis allowed the researchers to elicit meaning from the students and the essence of their experiences, which supported existing literature.

The participation in the site visits and excursions allowed the students to transfer the knowledge from the classroom to their management competencies. For instance, the students integrated the

entrepreneurship concepts to their site visits insofar that they were able to reflect on challenges prevalent in South Africa. Thereby, students were able to conduct cross-country comparisons in the current business environment.

Furthermore, international tour experiences can provide business graduates a competitive advantage as they learn about the local environments of the countries' visited as well as the business expectations of those countries and regions. For example, one student stated: *"But the concept is very good and stimulates innovation. The fact that the rent is low for start-ups and that these businesses are fostered was quite an incredible concept"*. Herein, the student was able to critically connect the concept of targeted policies in Germany as a growth incentive to promote entrepreneurship and show a comparison to the situation of weak enterprise promotion policies in South Africa.

By having the opportunity to engage, students can increase their self-awareness and resilience so that they are equipped with skills required to deal with unfamiliar circumstances. Additionally, 21st century recruiters and organisations seek business graduates that have problem solving and negotiating skills, which are shaped by different conditions, cultures and behaviours. By participating in international study tours, students can learn how to operate in a different cultural setting and acquire differentiated business capabilities, so that they can swiftly respond to unique and unexpected circumstances (Hawawini, 2016; AMBA, 2019; Ghani et al., 2021). In this line, business students who engage in international study tours develop a better understanding about global concepts, which in turn equip them with the leadership and managerial competencies that adapt to culturally diverse contexts (Le et al., 2018; Park et al., 2018).

The findings from this study contribute to management education by exploring the lived experiences of a group of South African MBA students. In particular, the findings reveal that traditional pedagogical approaches of passive learning are outdated and leadership of business schools are well advised to implement complementary pedagogical strategies aimed at enhancing business students' competencies in line with global economic needs. For example, international study tours should be compulsory component of MBA programmes through cross-collaboration with overseas partners.

9. Conclusions, Limitations and Future Research

The product of experiential learning programmes in business education, such as international study tours, expose students to market economies outside of their country of origin. Thus, the outgrowth of the experience is to stimulate their worldviews and in a globalised economy, business graduates need to have the capabilities to intersect theory with practice. An objective of the study was to explore whether MBA students' international study tour experiences enhanced the knowledge transfer from the classroom to the students' international management capabilities and to gain a deep and rich understanding of the second-year MBA students' learning experiences from an international study tour.

The research study findings indicate that the MBA students' benefit from the international study tours. For example, the participants indicated a significant cultural immersion, which supports literature regarding benefits from immersion in a foreign culture. Findings further support that the collaborative site excursions, observations of local cultures and reflective notes were an integral part of the experiential learning. Overall, the participants expressed appreciation for the learning experience. ELT involves the translation of direct experience through reflection to create new knowledge. The findings support ELT, which emphasises the role that experience exerts on a student's learning and includes concrete experiences, reflective observation and active experimentation (Kolb et al., 2001; Kolb, 2015; Kolb & Kolb, 2017). Reflective writing, which was the basis for the study involved experiencing something, reflecting and analysing the experience and then learning from the experience which was achieved in this study tour.

The limitations of this study are that the findings are based on a small sample size (n=11) of MBA students from a business school in a South African University and the recollections of their lived experiences may change over time. Therefore, the findings cannot be generalised as their reflections

may not represent other MBA students from other universities, *albeit* the narratives provided rich descriptions and the methodological process was suitable. Future research should aim at replicating this study in a different institutional setting in order to validate the study's findings. Similarly, researchers should explore best practises of the diffusion of experiential learning programmes in curricula as a response to the call for increased global leadership competencies from business schools. In light of the global shocks from the COVID-19 pandemic, it is advised that leadership and educators of business schools should undertake research on innovative pedagogical approaches to study international study tours combined with new technological learning and teaching advances.

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Do University Employees Practice What They Preach? Evaluating The Value of Internal Communication

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Keywords

Internal communication, E-newsletters, Employee Engagement, Information and Knowledge Management, South Africa, Technology Acceptance Model

Abstract

In a world of information, misinformation, news, and fake news, the value of reliable information has never been more important. Information that originates from large organisations is constantly being shared with customers and employees and the assumption is that all the information is being consumed, believed, and acted on. The aim of this research article was to explore if university employees practice what they preach when it comes to reading and engaging with written communication. This article explores the value of internal e-newsletters by exploring the perceptions of university employees regarding how much they engage with internal communication and how useful they find the content therein. Using a quantitative research approach and a cross-sectional design, the research paper applied variables from the technology acceptance model (TAM) to explore university employee engagement with an internal newsletter. Results indicate that although university employees do perceive internal e-newsletters as useful, they do not regard engaging with internal communication as important for their job. The paper concludes with opportunities for future research in the field of internal communication in a post-Covid-19 world.

1. Introduction

In this age of globalisation and digitisation, institutions like universities along with corporate organisations have to engage employees to ensure the smooth functioning of operations. Keeping employees engaged for better performance and reaching institutional objectives is often achieved through a formal internal communication system like internal emails, corporate newsletters and even departmental messaging like WhatsApp group chats (Ali, Sabir & Mehreen, 2019:764). Internal communication enables improved employee performance via improved employee engagement (Ali, et al.: 2019:767). In contrast, poor communication causes disengagement, which becomes a barrier to employee performance, morale and motivation. Therefore, the value of disseminating organisational information to employees, is significant as it assists in fulfilling organisational objectives by providing the right information to employees at the right time, improving the performance of daily tasks, increasing productivity and positively influencing job improvements (Berndt & Tait, 2014:95,–97; Habib, 2017; Men, 2014:256; Rezaei, Rezaei, Zare, Akbarzadeh & Zare, 2014:1208). The institutional knowledge transferred via internal communication like newsletters enables employees to perform their operational tasks and to fulfil organisational goals (Happ, 2021; Kinzey, 2013:156; Smith, 2013:254; Trivellas, Akrivouli, Tsifora & Tsoutsas, 2015:239; Vidgen, Sims & Powell, 2011:93).

A common complaint across higher education institutions across the world is that students do not read the communication sent to them. In the case of distance education for example, students are required to read through study material, engage on websites via a learning management system (LMS) and familiarise themselves with rules of study before submitting assessments; and the common outcry by academics is that students do not read the instructions (Dunham, Lee, Adam & Persky, 2020:1053-1054). The question that this paper seeks to address is whether or not the university employees read the internal communication sent to them, find it useful, or ignore written communication like some of their students do?

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In one of the largest higher education institutions in South Africa, the preferred internal communication channel is the electronic newsletter (e-newsletter). E-newsletters provide organisational information to employees and are considered one of the most useful communication channels for increasing efficiency and morale in the workplace (Habib, 2017). E-newsletters particularly cater to the sentiment as explained by Hannah (Goldman, 2018) that ‘the mobility, speed, and accessibility of news and information have transformed the way we communicate in our everyday lives. In an academic environment, e-newsletters are commonly used to communicate with both students and employees. Communicating with employees of academic institutions is essential considering that they represent the mechanism that moves the entire organisation (Pastae, 2016:178). Although higher education generates a substantial number of internal e-newsletters, the literature lacks evidence of their perceived usefulness and how much university employees engage with the content of these e-newsletters.

Since internal communication is known to increase the level of employee engagement (Ali, et al., 2019:775), it is in the best interest of an institution to understand the communication needs of employees in order to feel more engaged, but also to understand the effectiveness of the e-newsletter in terms of its usefulness (Kinzey, 2013:156; Smith, 2013:254; Vidgen et al., 2011:93).

The purpose of this article is, therefore, to explore the perceptions of university employees regarding how much they engage with internal communication and how useful they find the content therein. Ultimately, the paper will consider if university employees practices what they preach when it comes to reading and engaging with written communication.

2. Literature Review

2.1. Internal communication

Communication within an organisational setting is known as internal communication, which is the management of communication and the resulting interactions between stakeholders of the organisation regarding organisational matters (Mazzei, 2014:83). Men & Stacks (2014:256) posit that internal communication enables employees of an organisation to share information, form relationships, build organisational values and culture, and assist in achieving organisational goals and objectives (King & Lee, 2016:2667; De Lange & Mulder, 2017:29; Slabbert, 2018:130). Furthermore, internal communication can be utilised to align the behaviours and attitudes within the organisation in delivering a uniform service to the customers (Garas, Mahran & Mohamed, 2018:80).

There are, however, also barriers to effective internal communication that may constrain employee engagement. Barriers to effective internal communication include a lack of transparency and authenticity. Transparency refers to the extent to which information is shared with employees to make informed decisions (Men & Hung-Baesecke, 2015:450). Transparent communication also fosters trust amongst employees towards their organisation through being truthful or useful, having the buy-in from employees and being balanced, objective, and accountable. Authenticity refers to aligning actions to one’s true self without explicit consideration of others (Men & Hung-Baesecke, 2015:451). Internal communication should ideally be authentic by representing the organisation and engaging with employees by providing truthful and respectful communication (Men & Hung-Baesecke, 2015:452). As such, the purpose of internal communication should go beyond only conveying information, but also include gaining acceptance and understanding from employees (Men & Hung-Baesecke, 2015:452). Internal communication, merits employees’ organisational commitment that in turn leads to job satisfaction and productivity (Men & Stacks, 2014:301; Slabbert, 2015:43; Verwey, Benecke & Muir, 2017:68; Woldearegay, Angelopulo & Teketel, 2015:3).

2.2. Internal e-newsletters

To convey the shared goals and objectives of an organisation, internal communication utilises various channels to communicate information to employees (Bourland-Davis & Graham, 2017:203). These internal communication channels include e-mails, face-to-face meetings, internal advertising, radio, bulletin boards, newsletters, videoconferencing, etc. (Men & Hung-Baesecke, 2015:449; Yildiz,

2015:46). Despite the numerous forms of internal communication channels, the focus of this research paper is on internal e-newsletters due to its versatility and low-cost advantages (Kaufman, 2016).

E-newsletters serve as a reliable communication method whereby employees' basic need for information to perform their daily tasks more efficiently, can be satisfied (Rezaei et al., 2014:1208; Yildiz, 2015:46). As indicated in a study by Yildiz (2015:46) individuals can only interact, engage and learn about organisational activities through internal communication, enabling successful achievement of organisational tasks and the efficiency of organisations. In support of this, a global study of 26 000 LinkedIn members has shown that 73% of the employees who work at a 'purpose-driven' organisation feel engaged when communicated with, and therefore feel their job matters (Lockley, 2017). Swink & Schoenherr (2015:72) take this notion further, indicating that, through an internal communication channel, information transfer of a single plan leads to more consistent and synchronised employee focus.

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The main advantages of utilising internal e-newsletters include (Celarity, 2018; EDK and Company, 2018; Habib, 2017; Happ, 2021; Johnson, 2016; Luzajic, 2016; SnapComms, 2018; Vulcan, 2018; Woodard, 2018):

- immediate, extensive and frequent dissemination of organisational information,
- providing updates, goals, objectives, policies, campaigns, special events and employee recognition
- boost employee engagement
- reducing information overload by using content targeting,
- decluttering the inbox, boosting the relevance of what appears in the inbox,
- giving insight into the organisational culture,
- breaking down barriers between employees, especially in large organisations with multiple departments.
- The low cost advantage,
- the possibility of sharing activities and resources,
- building relationships with employees, and
- versatility, in that they can contain an announcement or news.

Despite its advantages, disadvantages of internal e-newsletters may include the concern of information overload, which leads to employees adopting a filtering system, meaning that they only read what they believe is important to them (Desrochers, 2016). The filtering system even extends so far as to employees deleting internal e-newsletters before they are read, thus employees ignore organisational information (Bacak, 2015; Forneris, 2018; Huang, 2018; Williamson, 2017). Alternatively, communication inefficiency refers to a lack of communication which leads to employees mistrusting the organisation because information about organisational matters is left to the imagination of the employees (Grossman, 2016).

2.3. Significance of internal e-newsletters in academia

In recent years, higher education institutions experienced significant changes, and subsequently, experienced more pressure in a highly competitive environment for students, academics and resource allocation. These higher educational changes include access to the higher education, massification, international benchmark processes, increased demand for internal and external quality assurance, changes in pedagogy due to technology enhancements, quality research outputs, changes in organisational culture and the increase in employees and student mobility (Council on Higher Education, 2016:28; Sabagh, Hall and Saroyan, 2018: 1). Accordingly, these changes have contributed to a demanding academic employment climate that poses challenges for professional development and institutional productivity (Sabagh et al., 2018:1). With the emphasis on access and massification to academic institutions, a greater number of employees are required to handle the more complex nature of activities that take place in higher education environments (Council on Higher Education, 2016:12). Keeping these higher educational challenges in mind, an academic institution in

South Africa, with an African focus and with many geographical wide-spread regional offices was chosen as the focus of the current study.

Seraphin (2018) points out that, although universities are unique organisations, they have similar hierarchies to other large and diverse organisations. For instance, the leader of the institution in academia is the president or chancellor which is the equivalent of the CEO in a typical private organisation. Other administrators (vice presidents, provosts and deans) represent top management. Faculty are the professional employees and mid-level managers (directors, department heads) are found at the center of organisations. Other employees are workers that range from administrative assistants, to computer experts, to custodians. The similarities to other complex organisations are greater than the differences, making the findings of this article applicable to a variety of types of large organisations.

2.4. Employee engagement

Employee engagement refers to the willingness of employees to invest their authentic selves in terms of their physical, cognitive and emotional selves in their work. This promotes connections with the workplace and stakeholders for a more conducive work environment (Nienaber & Martins, 2019:477). Engagement is identified as a determinant of organisational competency, improvement and efficiency (Ali et al., 2019:764). It is also related to fulfilment and a work-related mind-set through vigour, dedication and absorption (Kang & Sung, 2016:86).

Employee engagement is increasingly influenced by excellent internal communication, an innovative culture and a reputation for integrity (Kang & Sung, 2016:86). In particular, substantial and truthful communication is essential for the improvement of employee engagement (Ali et al., 2019:764; Men & Hung-Baesecke, 2015:460). Thus, internal communication, if used effectively, is essential in establishing a shared understanding and buy-in from employees and management alike. Shared understanding as well as employee's buy-in creates a more conducive environment for strategy implementation and in turn, organisational effectiveness (Nienaber & Martins, 2019:480).

2.5. Perceived usefulness of internal e-newsletters

According to the Technology Acceptance Model (TAM), acceptance of technology is determined by how useful and easy to use the system is, as perceived by the potential user (Davis, 1989; Iriberrri, Kwon & Henson, 2015:101). The objective of TAM is to examine why users' attitudes and beliefs influence their acceptance or rejection of information technology, looking at perceived ease of use (PEOU) and perceived usefulness (PU) of information technology (Elkaseh, Wong & Fung 2016:192). PEOU is defined as 'the degree to which a person believes that the use of a system would be free of effort' (Davis in Chauhan, 2015:60) and that 'less time spent on learning how to use an application means more time spent on using the application' (Aharony, 2015:139). PU is defined as 'the degree to which a person believes that using a particular system would enhance his or her job performance' (Davis in Camarero, Rodríguez & San José, 2012, 5; Wang & Sun, 2016:61). Lacka & Chong (2016:83) reiterate this by explaining that PU focuses on the individual's perception of whether the desired goal can be achieved while using specific technology. In other words, the more an application improves effectiveness within the organisation, the more the application will be considered helpful (Aharony, 2015:139). If a user perceives a specific technology as useful, this will most likely produce a positive user-performance relationship. For the purpose of this research paper, focus was placed on the PU construct of the TAM model and applied to internal e-newsletters in an academic environment.

3. Research Methodology

This exploratory study adopted a quantitative approach with a cross-sectional design whereby data was collected from employees at a South African higher education institution utilising an online survey. A margin error of 5% and confidence level of 95% were deemed acceptable when considering a population size of 5 656 (from the institutional employee database). The minimum number of employees required to respond to the survey was calculated at 357 respondents. Systematic sampling was utilised, which resulted in a sample that was almost random (Zikmund, Babin, Carr & Griffin,

2013:397). Every 16th name (calculated based on sampling interval calculations) on the institutional employee database was selected and invited to participate in the study.

In order to establish if university employees actually read the internal communication (Int_Com) and whether they found it useful to the performance of their duties, the instrument was designed using Likert scales, allowing respondents to report on the importance of specific characteristics of the internal communication. An online survey tool collected data which was exported to an Excel sheet and cleaned. The data for the study was analysed using basic descriptive statistics as well as Exploratory Factor Analysis utilising the Statistical Package for the Social Sciences 25 (SPSS 25). The validity of elements of the TAM, specifically 'perceived usefulness' were also tested with exploratory factor analysis.

3.1. Sample

The resultant sample for the study consisted of 403 respondents. The majority of the respondents were female (59.6%, n = 240) while 35% (n = 141) were male (5.5% declined to indicate gender). The research revealed that 57.3% of respondents have been employed at a higher education institution for 10 years or less and 31.5% have been employed at a higher education institution for more than 15 years. Almost half of the respondents were aged between 46-65 years (49.5%), followed by the age category of 36-45 years (26.8%).

4. Results and Findings

4.1. Exploratory factor analysis (EFA): Perceived Usefulness (PU)

The KMO measures the sampling adequacy (which determines if the responses given by the sample are adequate or not) and should be 0.5 or higher for a satisfactory factor analysis to proceed. Kaiser (in Watson, 2017, 232) suggests that a KMO value of 0.5 can be considered as the bare minimum (barely acceptable), anything between 0.7 and 0.8 as acceptable and anything above 0.9 as superb. The KMO measure indicated for Perceived Usefulness (PU) in Table 1 is 0.926, which indicates that the data is well suited for an EFA. Bartlett's Test of Sphericity (also indicated in Table 1) revealed a Chi-Square figure of 2975.178 and $p < .000$ confirming that there were patterned relationships between the items.

Table 1: KMO and Bartlett's Test: Perceived Usefulness

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.926
Bartlett's Test of Sphericity	Approx. Chi-Square	2975.178
	df	21
	Sig.	.000**
** Significant at the $p < .001$ level		

Source: Authors' own compilation

When evaluating the communality of the items, 92% of the variance (illustrated in Table 2) in the statement 'Using the information from 'the e-newsletter increases my productivity' is accounted for in the EFA. Furthermore, 88% of the variance can be accounted for within the statement 'using the information from the e-newsletter improves my job performance'. All statements accounted for at least 84% of the variance.

Table 2: Communalities within Perceived Usefulness

	Raw	
	Initial	Extraction
Using Int_Com improves the quality of work I do	1.121	.877
Using the information from Int_Com gives me greater control over my work	1.118	.889
Int_Com supports critical aspects of my job	1.126	.878
Using the information from Int_Com increases my productivity	1.129	.921
Using the information from Int_Com improves my job performance	1.045	.884
Using the information from Int_Com makes it easier to do my job	1.080	7.875
Overall, I find the Int_Com system useful in my job	1.102	.845

Source: Authors' own compilation

In terms of the total variance explained, (Table 3) all of the variables listed relating to perceived usefulness loaded on the same factor thereby accounting for 79.89% of the total variance.

Table 3: Total Variance Explained: Perceived Usefulness

	Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
		Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Raw	1	6.168	79.892	79.892	6.168	79.892	79.892
	2	.422	5.463	85.355			
	3	.325	4.215	89.570			
	4	.294	3.813	93.384			
	5	.210	2.724	96.108			
	6	.170	2.208	98.316			
	7	.130	1.684	100.000			

Source: Authors' own compilation

In addition, it can be highlighted that item five in the matrix, 'using the information from the e-newsletter improves my job performance' showed to have the highest factor loading. Furthermore, all the scores were similar in their factor loading strength, indicating that respondents responded positively to questions regarding the usefulness of the e-newsletter.

Table 4: Component Factor Matrix: Perceived Usefulness

	Raw	Rescaled
	Component 1	Component 1
Using Int_Com improves the quality of work I do	.937	.885
Using the information from Int_Com gives me greater control over my work	.943	.891
Int_Com supports critical aspects of my job	.937	.883
Using the information from Int_Com increases my productivity	.960	.903
Using the information from Int_Com improves my job performance	.940	.920
Using the information from Int_Com makes it easier to do my job	.935	.900
Overall, I find the Int_Com system useful in my job	.919	.876

Source: Authors' own compilation

The outcome of the TAM is usually an indication of the intention to use the technology in question. For the purposes of this study, the instrument also considered the behavioural intention to use the Int_Com as well as the perceived importance of the use thereof by using descriptive analytics to describe the respondents' perceptions. Respondent perceptions are illustrated in Table 5.

Table 5: Descriptive statistics of adapted TAM

Construct	Mean	Std. Deviation	Cronbach's Alpha
Attitude and behavioural intention to use Int_Com	3.71	0.69	0.92
Actual use of Int_Com	4.15	0.81	0.803

It is clear from Table 5 that respondents recognised the importance of using Int_Com (Mean of 4.95), yet their intention to actually use it was much closer to a neutral value of 3 (Mean 3.71).

5. Discussion

The EFA demonstrated that the variables making up the construct PU loaded heavily to the same factor, reinforcing the validity of the construct. It becomes clear that university employees can see the value in the internal communication and recognise that it has the potential to improve their productivity and job performance. Counterintuitively, the item that reflected on the actual perceived usefulness of Int_Com in their day-to-day activities loaded the least heavily on the factor (Overall, I find the Int_Com system useful in my job). It appears that university employees can clearly identify value in internal communication, but they are not sure that it is currently useful to their jobs. It may well be that university employees see the Int_Com as having *potential* usefulness, but they do not wish to expend the energy in making use of the tool. It is also necessary to consider communication fatigue or overload for both employees and students. It is not uncommon to hear complaints of being "swamped" by too many emails or being unable to get to all the messages employees receive. It would be interesting to discover how students feel about the written communication that is provided to them as maybe they too recognise the usefulness thereof, but do not always feel it is currently adding value to their studies. Students are also overwhelmed by messages from the university ranging from administrative text messages about finances and registration to multi-page emails about academic content.

University employees were also demonstrating contradictory behaviours in their attitudinal and behavioural intentions to use Int_Com versus their perceived importance of the use thereof. University employees rated the importance of using Int_Com as highly important with a mean value of 4.15, yet their behavioural intentions were much lower at 3.71- possibly indicating a case of "do as I say and not as I do".

6. Limitations

Findings from the present study should be considered in light of potential limitations. The study focused on the perceptions of respondents regarding the perceived usefulness of the internal e-newsletters, therefore only using one construct from the TAM model. The study was conducted within a single specific South African higher education institution only, therefore, this does not constitute a representative sample of all higher education institutions. Moreover, the nature of factor analysis does not allow for the full exploration of the e-newsletter and e-newsletters holistically, therefore, this study was also limited in the technique imposed.

7. Managerial implications and Future Research

The purpose of this study was to explore the perceptions of university employees with regard to how much they engage with internal communication and how useful they find the content therein. The findings clearly indicated that while employees agreed to the overall value of the internal communication, they were not convinced of the usefulness to their daily work. This implies that there is room for improvement in the 'marketing' of the internal communication to staff. One of the basic principles of marketing is to tailor the product to the consumer's needs, and by applying the same logic to the internal communication, it can be argued that the institution should design the internal communication to address the needs of the staff members. Content could for example be adapted to reflect 'just-in-time' information nuggets that are useful to staff at a specific moment in time. Common deadlines, urgent policy changes, or

adjustments to registration dates are just some examples of information that staff may find more relevant to their daily tasks, if such information was presented in the internal communication. Since the data was collected prior to the global COVID-19 pandemic, the relative importance of internal communication may have changed since then. At the start of the pandemic in 2020, numerous businesses in all industries underwent necessary communication shifts. In order to meet the needs of rapid technology changes and remote working policies, organisations often had to adapt to new internal communication strategies (Defilippiks, Impink, Singell, Polzer & Sadun, 2022:180); and had to rethink how they communicate with a geographically dispersed employee compliment.

It is proposed that internal communication plays a more important role than ever before in keeping organisations connected and employees engaged. Internal communication that can reduce the distance-gap between remote working staff and the organisation will result in improved morale, motivation, and feelings of connectedness. Remote working conditions will require more creative means of attracting staff attention, the use of video and multimedia in internal communications may be one possible solution, while adjusting the frequency of communication may be another. Internal communication in a post-covid reality will need to be more employee-centric in order to improve on the perceived usefulness to daily work and technology allows for customised, personalised messages that could be tailor-made for individual departments, schools or colleges. A social-media styled approach that allows for two-way communication will increase employee engagement and allow for knowledge sharing and collaboration in a way that was never possible with electronic newsletters alone. In many organisations, a common problem is email fatigue resulting from too many emails being received on a daily basis, and all too often, internal communications are one of the items that are ignored or placed on a to-do list that is never completed. A managerial imperative going forward, should therefore be to investigate the filtering mechanisms of employees and to design internal communication in such a way that filters are bypassed. Employees should recognise the value in the internal communication and prioritise reading it. Berry (2020) reports that 60% of employees use mobile apps to conduct work while off-site. Higher education institutions could consider the use of an app to facilitate their internal communication. Apps allow for push messaging that can deliver timeous reminders, invitations and critical information. It is necessary for organisations to continually examine their internal communication strategies and, therefore, the main suggestion for future research is to replicate this and related studies on internal communication in an academic environment following the COVID-19 pandemic. The importance and potential changes of internal communication in the post-pandemic world should ideally be investigated for the smooth continuation of business processes and organisational alignment, especially in a working-from-home and working remotely environment.

Further suggestions for future research are:

- to provide insight on the predictive nature of items included in the survey used in this study. In addition, a Discriminant Function Analysis (DFA) along with step-wise Logistic Regression can be performed to illuminate whether the presence of the e-newsletter or the presence of e-newsletters may indeed predict positive or negative behaviour among employees at the same and other higher education institutions within South Africa.
- to focus on both constructs from the TAM model (PU and PEOU) in order to get the holistic picture of university employees' behavioural intention and actual use of internal e-newsletters.
- to investigate how managers/organisations can formulate e-newsletters differently to increase their usefulness for employees.
- to explore employee 'filters' when it comes to incoming communication

8. Conclusion

This research paper explored the value of internal communication in an academic environment. In order to determine whether university employees practiced what the preach, the purpose of this paper was to explore if university employees perceived internal e-newsletters as useful and if they engaged with the content within the internal e-newsletters.

The results indicated that university employees' do perceive internal e-newsletters as useful, yet they do not regard engaging with such internal communication as important for their jobs. University staff did, however, express the attitudinal and behavioural intentions to make more use of such communication. Based on these findings it could be concluded that university employees do indeed practice what they preach, albeit with some caveats. Finally, when considering that this data was collected prior to the start of the COVID-19 pandemic, the main future research suggestion is to duplicate this study, and internal communication research studies alike, to explore the trends and best ways forward for employees to fully utilise and engage with internal e-newsletters in a post-COVID-19 environment.

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Analysis of Top-Ranked South African and International MBA Focus Areas in the 4th Industrial Revolution

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Keywords

Business schools; Education; Fourth industrial revolution; MBA; Skills for future.

Abstract

The world of work is rapidly changing due to extraneous international and local conditions. These conditions include aspects such as the Covid-19 Pandemic and the advancement of modern technology ushered by the 4th industrial revolution. Business schools have a strategic role in developing the skills required for leaders to succeed in challenging business landscapes. This study explores the skills necessary for the 4th industrial revolution and international and local business schools' focus on these skills. This study reviewed related literature to identify the skills required for the 4th industrial revolution. This included a review of the top-ranked international and South African business schools to identify the current MBA focus areas. These were compared to identify alignment and/or gaps to provide managerial recommendations. The study found that the skills required for the 4th industrial revolution could be classified into four primary groups: work readiness skills, soft skills, technical skills, and entrepreneurial skills. Further findings revealed whilst there is a similar focus on soft skills for both international and local business schools, there is a distinct gap between the focus on technology-linked technical skills in the current South African MBA. Furthermore, from the literature reviewed, it was evident that technology-linked technical skills were the most sought-after skills in the 4th industrial revolution.

1. Introduction

The business and economic landscape of the 21st century has been riddled with complexities for traditional business. Aspects such as the Covid-19 pandemic, international political instability and the advent of technology, and increasingly prominent interest in aspects such as the 'internet of things' (IoT), artificial intelligence (AI), and machine learning have alluded to the premise that the 4th industrial revolution is not a theory prophesized by futurists, but rather a reality that businesses must adapt to. For Ghobakhloo (2018), the 4th industrial revolution or industry 4.0 as it is commonly known, is currently upon us, and for businesses to remain relevant and sustainable, they need to embrace the revolution and find creative ways to thrive within it or fail by holding onto traditional business practices. However, in addition to the 4th industrial revolution, the nature of business has fundamentally changed. Walker and Lloyd-Walker (2019) suggest that the new world of work is characterised by several changing variables, including increased competition, increased technological development, and changing demographics. Researchers such as Dasi *et al.* (2019) classify the changing nature of work according to the VUCA principles, which argue that business is volatile, uncertain, complex, and ambiguous (VUCA).

As the business landscape moves into a world of increasing complexity, the skills required in the future will be essential in terms of an organisation's success. The World Economic Forum (2016) adds that the skills required for the 4th industrial revolution range from technical expertise to cognitive

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expertise, and one of the most important skills that will be required for the future world of work is creativity, as creativity will be one of the primary areas that distinguish humans from machines. However, in addition to skills such as creativity, skills such as emotional intelligence, complex problem solving, and entrepreneurial mindset will be required in the new world of work (World Economic Forum, 2016). Bughin *et al.* (2018) add that the most relevant skills for the future world of work include digital skills, leadership, and entrepreneurship, as organisations must be far more agile in much more complex operating environments.

Business schools have a significant role to play in developing and cultivating the skills required for the future. Sewchurran (2019) contends that the traditional Masters in Business Administration (MBA) degrees have decreased in stature due to being removed from the realities of the current and future world of work. White (2018) and Seedat (2019) propose that the modern MBA should move away from the traditional focus, develop the skills required for the future world of work and should consider the changing business landscape. The manager of the future requires a unique set of skills which will allow them to succeed in a world of uncertainty and limited predictability and, as such, needs to draw on aspects such as complex problem solving, critical thinking, entrepreneurship, imagination, and creativity (Bughin *et al.*, 2018).

2. Problem Investigated

As the world of work continuously changes due to factors such as the 4th industrial revolution and the Covid-19 pandemic, the skills required for the future world of work may differ from previous periods. Business schools are perceived to play a critical role in developing the skills and competencies required for the working world. This study investigated the skills required for the changing world of work and the current MBA focus areas of a sample of South African and International business schools.

3. Research Objectives

This study explores the skills necessary for the 4th industrial revolution and international and local business schools' focus on these skills. This was done by reviewing related literature and curriculum content from several local and international top-ranked business schools to identify the skills required for the 4th industrial revolution. This included a review of the top-ranked international and South African business schools to identify the current MBA focus areas. These were compared to identify alignment and/or gaps to provide managerial recommendations.

4. Literature Review

4.1 Changing world of work and the 4th industrial revolution

According to a study published by Bughin *et al.* (2018), the skills required for the 4th industrial revolution and the future world of work vary significantly from those required a decade ago. Bughin *et al.* (2018) argue that skills that require basic cognitive ability such as data processing will sharply decrease, and skills such as adaptability, critical thinking, creativity, and entrepreneurship will increase greatly. Kazancoglu and Ozkkan-Ozen (2018) agree with the above in that the increasing reliance on technology and machines will result in less physical and basic cognitive requirements from employees. This will lead to a change in job profiles. Kazancoglu and Ozkkan-Ozen (2018) found that the workforce in the 4th industrial revolution will require much more focus on teamwork, problem-solving, and opportunity identification. The workforce of the future will move away from execution to strategic cooperation. This will affect the traditional hierarchical structures of a business and force employees to break down internal silos and focus more effort and energy on aspects such as innovation and new market penetration.

Morgan (2020) found that business complexity has continued to increase as there are several unknown variables that businesses must contend with to succeed. The introduction of the novel Covid-19 pandemic has resulted in increased disruption to business for many organisations, even further emphasising that change is needed in how we do business and the type of skills taught. This supports the premise that skills such as problem-solving, creative thinking, and analytical skills are required to assist individuals in dealing with the new world of work.

The Covid-19 pandemic is a global health contagion affecting hundreds of thousands of people worldwide. The virus is spread through human-to-human contact and has resulted in a change in human behaviour. The Board of Innovation (2020) regards this as the new state of the economy for the modern world. The coronavirus or Covid-19 has altered the way that business is done. It has resulted in reduced physical interactions, physical distancing, travel bans, limitations on gatherings and imposed lockdowns, and ultimately shutting down business as we know it in certain areas. All of this resulted in a new low-touch economy. Even though the introduction of vaccinations has reduced the magnitude of the virus, the result thereof has significantly changed how business is done. Some say even fast-tracked the progression of the 4th industrial revolution.

Morgan (2020) found that whilst in the 21st century, most companies had shared digital transformation objectives due to the 4th industrial revolution, the Covid-19 pandemic has forced businesses to accept and implement digital processes to remain sustainable rapidly. Unfortunately, this rapid forced change has left much smaller (and even bigger) businesses behind. Marr (2020) argues that it is imperative for businesses in the 21st century to rethink their business models and foster digital transformation to achieve a competitive position. The Board of Innovation (2020) has regarded this move as a pivot toward new business models, as traditional businesses are rethinking their current offerings in a new low-touch economy. Psaropoulos (2020) believes that the Covid-19 pandemic has forced employees, organisations, governments, and consumers to embrace digital platforms as a necessity for daily functioning. The necessity of moving onto digital platforms caused by the Covid-19 virus has spurred development that was required for individuals and organisations to partake in the 4th industrial revolution effectively.

4.2 Skills required for the changing world of work and the 4th industrial revolution

As the world of business changes, new skills and competencies are required in the workplace. Business schools need to understand the changing world of work and produce future-fit students who can function optimally in a changing business landscape. PWC (2019) argues that the role of business schools and universities will also change with the introduction of the 4th industrial revolution. Business schools and universities need to act as critical centres of thought leadership that develop the skills required for the new world of work but also centres of innovation that continuously feed new ideas into the business world. For a business school to remain relevant, they need to be ahead of the change expected in business. This can be achieved through continuous research, which is then interpreted and translated into revised, updated, and adaptable course curricula (Seedat, 2019). Deloitte (2018) suggests that the skills landscape of the 4th industrial revolution differs greatly from the skills set required a decade ago. Human-centred aspects such as creativity, automation, leadership, and negotiation are growing as core skills required for the future world of work. Deloitte (2018) classifies the skills required for the 4th industrial revolution within four broad categories: readiness skills, soft skills, technical skills, and entrepreneurship. According to Deloitte (2018), workforce readiness skills could be categorised in terms of the skills required to achieve ongoing success in the workplace. These skills include aspects such as professionalism, time management, self-presentation, and digital literacy. Trkman (2020) defines soft skills as intangible traits and characteristics and argues that the most important soft skills required for the 4th industrial revolution include leadership ability, flexibility, adaptability, people management, creativity, and the ability to deal with pressure and uncertainty.

Persuad (2019) defines technical skills in the 4th industrial revolution as the understanding and ability to use new technologies, infrastructure, and analytics for business success. Rasaki and Abioye (2018) define technical skills as the competence and capabilities to use tools and techniques within a specified discipline or area. Deloitte (2018) contends that leaders will need to understand core technical skills that drive innovation in the 4th industrial revolution. These skills need to be understood from a functional perspective instead of a deep specialised level for leaders and managers as the 4th industrial revolution requires digitally capable and interdisciplinary managers. Entrepreneurial traits are also considered a critical skill in the 4th industrial revolution. Deloitte (2018) defines entrepreneurship in the context of the 4th industrial revolution as the abilities, competencies, and capabilities required to identify and nurture opportunities or ideas for business or social success.

The skills required to foster entrepreneurial capability include aspects such as initiative, innovation, resilience, creativity, curiosity, and risk appetite. Beliaeva *et al.* (2019) define entrepreneurial behaviour as the ability to identify and recognise opportunities that may create value and the ability to pursue those opportunities.

4.3 Value of a business school in the 4th Industrial Revolution

Business schools have been a resounding pillar of the knowledge economy for the last decade. They have assisted in progressively developing leaders that can cope and succeed in complex working and trading environments. Trkman (2020) suggests that whilst the business model of business schools has not changed significantly over the last 30 years, business schools remain credible institutions that provide immense public and social value to the communities they operate within and serve. This value is further characterised through teaching and learning activities as well as through research output. Koris and Aav (2019) assert that business schools and business education are believed to develop critical skills required to succeed in the world of business. They provide a foundation through various theories, case studies and practicals, allowing graduates to understand the world of business better. Sunley *et al.* (2019) add that studying in a business school provides significant opportunities for development, which expands further than intellectual development but also provides personal and professional development.

Soni (2020) asserts that the business landscape is changing due to the introduction of the 4th industrial revolution, and therefore the role that a business school plays should also change. Furthermore, in times of uncertainty, as witnessed with the introduction of the Covid-19 pandemic, the focus of business schools should also change. There is a need for a paradigm shift for business schools as the competencies and activities focused on in the 20th century are becoming irrelevant. Soni (2020) believes that the role of a business school in the context of the 4th industrial revolution is to develop graduates who understand new disciplines related to the changing times and business needs. Business schools should develop intellectual ability across disciplines and provide students with a globally focused mindset of best practice whilst remaining flexible to local contexts. Meziered (2016) purports that institutions of learning should become incubators for innovation and that higher education institutions need to move away from reacting to the 4th industrial revolution and become more involved in shaping the outcome of the revolution. PWC (2019) agrees with the findings of Meziered (2016) and adds that universities and business schools need to understand the changing nature of skills required by industry and ensure that they can produce graduates that manifest the skills required for the 4th industrial revolution.

4.4 Value of an MBA in the 4th Industrial Revolution

Marino *et al.* (2019) found that the MBA is regarded as a key developmental tool that provides professional competencies that allow individuals to be more successful in the business world. Muposhi *et al.* (2019) contend that the MBA is seen as a flagship programme by several business schools worldwide and similarly has the most gravitas of all business school degrees. Similarly, Marino *et al.* (2019) extend that the reputation of the MBA is widely recognised across the business world. Fisher (2019) adds that the MBA maintains a significant legacy as the qualification has existed for over 100 years. It is considered the leading business management programme for senior and executive managers. The MBA is, by nature, a generalist qualification that allows individuals to enhance critical skills and competencies related to business management. Whilst exact figures are vague and ambiguous, it is anticipated that over 500 000 professionals graduate from an MBA programme each year (Fisher, 2019).

Seedat (2019) asserts that the MBA qualifications could be of tremendous value in the 4th industrial revolution if it allows individuals to upskill in a multidisciplinary approach whilst fostering an understanding of digital and new technologies. This is, however, based on whether the MBA has been designed based on future-focused content and relevance. The business has changed, and for an MBA to be relevant, it needs to align with the business's changes. Oxford (2019) found that whilst the MBA has faced significant criticism, it is still regarded as a sound qualification that allows for the transfer of apt business competencies. The MBA was designed to assist leaders and managers in achieving

sustainable value within their businesses. This notion remains true today, and as such, the MBA is relevant as leaders in the new world of work still have a responsibility to provide value to their stakeholders. This, however, becomes even more complex in an increasingly changing business landscape. Therefore, for an MBA to hold value, it needs to evolve and embrace aspects such as technology, digitalisation, creativity, and innovation, as these are the skills required for leaders to succeed in the new world of work.

Shimpi (2019) purports that the value of the MBA in the 4th industrial revolution needs to be achieved by reviewing the current curriculum and redesigning the content specific to the changes in business, thus creating an MBA 4.0. This revision would be based on techno-managerial content allowing for the understanding and integrating of theoretical and applied skills for the 4th industrial revolution. Some business schools have progressively started redesigning their programmes to be more future-focused. However, several business schools still offer a traditional MBA. Barber (2018) argues that traditional business schools regard their MBA as transformative whilst they are based on tried curricula that are largely becoming irrelevant. The MBA's value is that it can develop industry leaders to become "masters of business administration tomorrow". However, to achieve this, the MBA needs to be practical, relevant, and geared for the changing world and changing skills required by the 4th industrial revolution. Stroufe (2020) argues that business schools should equip students with the tools to deal with increasing complexity and uncertainty in the workplace. These skills are needed to deal with challenging business terrains such as the Covid-19 pandemic.

It is therefore evident that business schools and the MBA are still seen as potentially valuable aspects as they are positioned to deliver change. However, for the MBA to provide the value it warrants in the 4th industrial revolution, it needs to be relevant, practical, and future-focused.

The current focus area of an MBA across most business schools worldwide is business management. Marino *et al.* (2019) classify the MBA as a generalist management programme that covers the major aspects of effective and efficient business management. Muposhi *et al.* (2019) assert that whilst the general manager in the 21st century has become more than just a general manager due to change and complexity, the current MBA's focus in South Africa consists entirely of general management skills.

4.5 Criticisms of the relevance of MBA programmes

Tan and Ko (2019) believe that the key criticism levied against MBA programmes is that they are largely becoming irrelevant. The MBA in the 21st century is developing skills that were required in the 20th century and are therefore misaligned with the needs of the business. In a study by Nakavachara (2020), the success of CEOs with MBAs was considered concerning CEOs without MBAs. The findings presented were that CEOs with an MBA do not perform better than CEOs without one. These findings called into question the relevance of the MBA in the 21st century as the skills developed did not significantly assist individuals to outperform their counterparts without the skills attained.

Jing *et al.* (2019), comparing international branches of business schools, found that the curricula provided in programmes such as the MBA in developing countries are almost a replica of curricula in developed countries. Whilst it is commonly understood that these business landscapes differ, having the same curricula often raises questions of relevance for programmes such as the MBA. Muposhi *et al.* (2019) have also criticised the MBA about African relevance, as it is often based on western curricula.

5. Research Methodology

This study made use of a qualitative research approach. A document analysis was used to gather information regarding the skills needed for the 4th industrial revolution and those that business schools are currently presenting. This method allowed for a critical examination of content collected from trustworthy and reliable documents, in this case, mostly from the websites of the selected business schools (syllabus content) and other documents related to the research objective. Bowen (2009) states that using this approach allows for an organised technique in which various documents

are reviewed to extract important themes based on the research question or problem. Additionally, Corbin and Strauss (2008) opined that this method could help advance the understanding of the topic. Document analysis is seen as a social research method; the rationale behind it is the triangulation of information. It is unobtrusive and, therefore, eliminates the possible bias from interactions with the sample audience. It also promotes contextual and conceptual investigation (Webb et al., 1999; Babbie, 2001; Berryman, 2019); verifying findings and information from different sources can create a convergence of information and strengthen credibility (Bowen, 2009).

To assess and review the current syllabus of leading MBA business schools, the top five MBA business schools globally and the top five MBA business schools in South Africa were selected from these respective ranking agencies. Their curriculum was reviewed to understand whether the focus areas of current MBA programmes align with the skills required for the 4th industrial revolution. The top five local and international business schools were selected using the rankings of two evaluation agencies.

Eduniversal (2019) is a global business school ranking and evaluation agency that has independently ranked over 1000 business schools in 154 countries. The methodology used by Eduniversal (2019) to rank business schools includes qualitative and quantitative criteria, and aspects such as students, accreditations, memberships, and partnerships are considered. In addition, another well-respected MBA ranking is the Financial Times MBA Ranking. The Financial Times MBA Ranking (2021) has ranked 129 MBA programmes. It follows a methodology that collects data from participating schools and alumni who have completed MBA programmes at these respective schools. The data collected includes information about individual career progression, aims achieved through the programme, quality and experience of faculty and overall satisfaction of alumni.

The two rankings' agencies were selected to review the ranking and syllabus of MBA programmes as this provided a more unbiased view and additionally because the Financial Times Ranking provides a more global focus, whereas the Eduniversal rankings provide dedicated continental rankings. Therefore, Financial Times rankings were used to identify the top five MBA business schools worldwide, and the Eduniversal rankings were used to identify the top five MBA business schools in South Africa. The selected business schools were anonymised to protect their identity and consequently referred to as business schools 1 to 5 (local) and business schools 1 to 5 (international).

6. Results and Findings: Business schools – international and local comparison

To understand whether current MBA programmes are offering the subjects required by the 4th industrial revolution, an analysis of the curriculum and focus of leading international and South African business schools was completed. This was done by reviewing the respective curricula content for the selected MBA programmes. The focus areas of top-ranked international and South African business schools are listed in Tables 1 and 2, respectively:

Table 1: Curriculum review – International Business Schools

Global MBA Ranking – Financial Times		
Business School Rank	Compulsory Modules	Electives Offered
Business school 1	<ol style="list-style-type: none"> 1. Analytical Approach to Uncertainty 2. Leadership in Organisations 3. Operations Management and Statistical Decision Analysis 4. Financial Reporting Systems and Frameworks for Strategic Analysis 5. Managerial Finance and Microeconomics 6. Foundations for Strategy Formulation, Managerial Accounting and Human Resource Management 7. Marketing Strategy 8. Managerial Finance II 9. Negotiation Strategies, Marketing Analytics, Strategic Decision in Operations, Strategic Crisis Management 	<p>A choice of global electives offered at different campuses:</p> <ul style="list-style-type: none"> • New era of Marketing • Contemporary Issues about Financial Markets and Institutions • Consumer Led Growth, Creating and Managing Strategic Alliances • Incentives, Organization and Strategy • Innovation Strategy & Management • Leading High Impact Teams • Visualisation for Persuasion • International Finance • Strategic Brand Management • Biases, Forecasts and Deep Uncertainty • Creating and Managing Strategic Alliances • Family Enterprises: Success and Continuity • Investment Banks, Hedge Funds and Private Equity

	<ol style="list-style-type: none"> 10. Understanding Consumer Psychology, Mergers and Acquisitions and Private Equity 11. Macroeconomics, Digital Transformation, International Growth 12. Deal Making, Understanding Consumer Psychology, Value Investing, Technology Strategy: Fintech and Big Data Analytics 13. Law and Corporate Manager 14. New Venture Discovery 15. Leading a Global Company and Capstone 	<ul style="list-style-type: none"> • Marketing Research • Strategy Beyond Markets • Strategies for Growth • World Economy • Intellectual Capital Management • Venture Capital: The Business of Innovation • New Technologies for Managers: Risk, Opportunities and Unknowns • Product Management for Tech Companies • Digital Strategy: Individual and Organisational Transformation for a Digital Age • Mergers and Acquisitions • Global Business Environment • The Analytics Edge • Business Tax Strategy • Entrepreneurial Finance • Launching and Leading Start-ups • Selling Yourself and Your Ideas
Business school 2	<ol style="list-style-type: none"> 1. Leadership 2. Financial Reporting 3. Economic Analysis 4. Organisational Behaviour 5. Marketing Management 6. Operations Management 7. Corporate Finance 8. Strategic Management 9. Entrepreneurial Management 10. Strategic Managerial Accounting 11. Chinese Economy 12. Strategy Simulation 	<ul style="list-style-type: none"> • Branding Strategies for Business Success • Doing Business in China • Entrepreneurial Finance • Financial Decisions Aligning with Corporate Strategy • Fixed Income Securities • High Performance and Sustainable Leadership • Integrating and Managing Acquisitions • International Business Strategy • International Corporate Finance and Governance • Introduction to Financial Derivatives • Introduction to Venture Capital • Leading and Managing Change • Managerial Psychology in Practice • Managing Strategic Investment Decisions • Marketing Strategy and Planning • Negotiation Skill • Organisation Design & Change • Pricing for Growth • Proactive Leadership • Rethinking Strategy for the Digital World • Strategic Forecast: World and Markets in the Next Decade • Strategic Negotiation Programme • Strategic Sales Forces Management • Talent Management Programme • The Future of Global Banking and the Case of China • Value-Based B2B Marketing • Global Electives – Mergers and Acquisitions, Doing Business in Asia/Africa/LatAm, Shaping Consumer Behaviour in a Global World, Innovation,
Business school 3	<ol style="list-style-type: none"> 1. Business Performance Management 2. Competitive Strategy (Business and Corporate Strategy) 3. Corporate Finance 4. Financial Accounting 5. Marketing Strategy 6. Operations and Supply Management 7. Business Environment 8. Digital Transformation 9. Social Responsibility & Ethics 10. Future of Talent & Work 11. Entrepreneurship & Innovation 12. Strategic Implementation 13. Leadership Styles & Behaviours 14. Impactful Leadership 15. Inspiring Diverse Teams 16. Building Trust 17. Negotiations 18. Leading Change 19. Business Performance & KPIs 20. Off-site Leadership Seminar 	<ul style="list-style-type: none"> • Strategic Management of Innovation • Organizational Design and Management • Design Thinking • Entrepreneurship Strategy: From Ideation to Exit • Business Strategy • New Product Development • Social Entrepreneurship and Change-making • Scaling Up Operations • Marketing Through social media • "Mountain Crisis Management" seminar • Sustainable Transition Management Essentials • Sustainable Finance • Sustainable Strategy • Sustainable Supply Chain • Sustainable marketing • Sustainable Governance • Inclusive Business as a Lever of Change • The Entertainment Industry • Fundamentals of Negotiation • Positive Psychology for Managers • Introduction to Entrepreneurship • Branding • Business Simulation: The Fresh Connection • Responsible Leadership • Management Buyouts

		<ul style="list-style-type: none"> • Mergers & Acquisitions (law) • All HEC Paris Certificates (GE) • Seminars in San Francisco (UCLA), Rio de Janeiro (FDC) • Global Electives – • Manage the Digital Revolution, • Test your Start-up, • Innovation Like an Entrepreneur, • Shape the Future of Energy • Inspire Change in Social Business • Luxury, today and tomorrow • Design and Deliver Exceptional Services • Master Financial Challenges
Business school 4	<ol style="list-style-type: none"> 1. Immersion and Preparation 2. Business in The Global Political Economy <ul style="list-style-type: none"> • Interaction between economics and politics • Contemporary Leadership Skills 3. Technological Disruption and Entrepreneurship <ul style="list-style-type: none"> • Disruptive nature of technological change • Technology and Innovation • Venture Capital Financing Techniques • Competitive Strategy 4. Marketing, Leadership and Advanced Strategy <ul style="list-style-type: none"> • Market Leadership • Strategic Positioning for sustainable success • Building Brand • Timeless desire • Pricing Strategies • Private Equity Strategies • Revisiting Strategy • Mergers, Acquisitions and Alliances 5. Strategy and Finance for Global Executives <ul style="list-style-type: none"> • Valuations • Strategy and Data Analytics • Credit Risk • Foundations of Fintech • Blockchain, Distributed Ledgers and Digital Currency • Digital Marketing Analytics 6. A Changing Global Marketplace <ul style="list-style-type: none"> • Towards a new century • Negotiation analysis • Business implications of climate change • Deal Making in Asia • Capstone project 7. Making it Happen <ul style="list-style-type: none"> • Operations and Supply Chain Management • Strategic Operations Management: Invisible Leadership • Behavioural Strategy 	None
Business school 5	<ol style="list-style-type: none"> 1. Corporate Finance 2. Data, Models and Decisions 3. Financial Accounting 4. International Economics 5. Macroeconomics and the Chinese Economy 6. Managerial Accounting 7. Microeconomics 8. Strategic Marketing 9. Process Operations Management 10. Organisational Behaviour 11. Strategic Talent Management 12. Strategy Management 	<ul style="list-style-type: none"> • Financial Statement Analysis • International Financial Management • Brand Management • Customer Insight • Strategic Market Orientation • Industry and Competitive Analysis • Investments • (Big) Data Analytics for Business • Mergers and Acquisitions (M&A) • Private Equity, Growth Equity and Venture Capital • Realising Entrepreneurial Potential • Corporate Entrepreneurship: Managing Innovation to Drive Growth • Social Entrepreneurship: Building Impact Ventures • Power and Influence in Organisations • Psychology of Leadership • Management Decision-making • Negotiations

Table 2: Curriculum review – Local Business Schools

South Africa MBA Ranking - Eduniversal		
Business School Rank	Compulsory Modules	Electives Offered
Business school 1	<ol style="list-style-type: none"> 1. Organisations, Leadership and Values 2. Markets in Emerging Countries 3. Business, Government and Society 4. Leadership and Personal Development 5. Economics for Business 6. Accounting 7. Organisational Behaviour and People Management 8. Operations Management 9. Finance 10. Marketing 11. Social Innovation 12. Strategy 13. Business Model Innovation Lab 14. Research Methods and Reports 15. Company Analysis 	<ul style="list-style-type: none"> • Advanced Finance • Advanced Leadership • Complexity of Change • Coaching • Company Valuations • Digital Market Making • Integrated Reporting • Lean Thinking and Operational Excellence • Management Control Systems • Negotiating to create value • Venture Launch • Strategic Brand Building • Social Finance • Social Innovation Lab
Business school 2	<ol style="list-style-type: none"> 1. Accounting for Decision-Making 2. Business Communication Skills 3. Business in Society 4. Contemporary Decision-Making 5. Corporate Finance 6. Digital Enterprise Management 7. Economics for Managers 8. International Study Module 9. Leadership Development 10. Managerial Accounting 11. Managerial Statistics 12. Operational Excellence 13. Organisational Behaviour 14. Perspectives on African Frontiers 15. Research Methodology and Assignment 16. Strategic Analysis 17. Strategic Management 18. Strategic Marketing and Branding 	<ul style="list-style-type: none"> • Decision Sciences • Entrepreneurship and Innovation • Ethics and Sustainability • Finance and Economics • Human Resources and Leadership • Information and Technology Management • Marketing Management • Operations and Project Management • Strategic Management
Business school 3	<ol style="list-style-type: none"> 1. Human Resource Strategy 2. Financial and Management Accounting 3. Operations Management 4. Marketing 5. Environment of Business 6. Decision Making 7. Innovation and Design 8. Strategic Implementation 9. Leadership 10. Integrated Simulation 	<ul style="list-style-type: none"> • Building Personal Effectiveness • Business in Context • Finance • Innovation, Technology and Sustainability Leadership and Culture • Strategy • Entrepreneurship
Business school 4	<ol style="list-style-type: none"> 1. Management 2. Accounting 3. Economics 4. Technology & Operations 5. Strategy 6. Organisational Design 7. Critical Skills 8. Society & Collective Action 9. Marketing in a Connected World 10. Finance & Investment 11. Entrepreneurship 12. Business Integration 13. Case Competition 14. Global study tour 	<ul style="list-style-type: none"> • Dynamic Economies and Innovation • Managing for Sustainability • Finance • General Management • Leading Organisations

Business school 5	<ol style="list-style-type: none"> 1. Academic Skills 2. Economics 3. Sustainability 4. Finance & Quantitative Skills 5. Quantitative Decision Making 6. Research Methods OR Case Writing 7. Sustainable Marketing 8. Financial Management 9. Operations Management 10. Responsible Leadership 11. People Management 12. Management Accounting 13. Strategic Management 14. Ethical Organisation 	<ul style="list-style-type: none"> • Business Consulting • Sustainable Fisheries • Environmental Economics • Project Management • Climate Change • Entrepreneurship • Sustainability Law • International Option • Knowledge Management • Integrated Coastal Management • Business Modelling OR
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7. Business school curriculum comparison preliminary findings

The findings from the analysis were as follows:

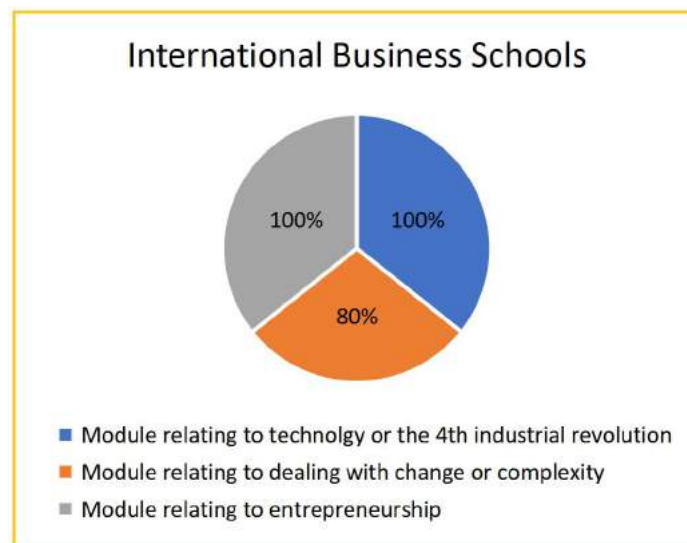


Figure 1: South African MBA curriculum focus areas – compulsory modules and electives

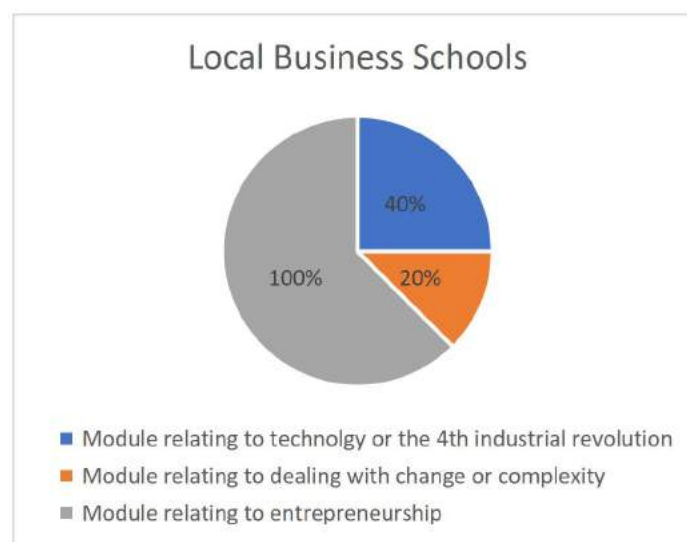


Figure 2: International MBA curriculum focus areas – compulsory modules and electives

Figures 1 and 2 represent the South African and international curriculum focus areas of reviewed business schools. The curriculum focus areas were categorised according to three key areas, modules relating to the technology or the 4th industrial revolution, modules relating to change or complexity and modules relating to entrepreneurship. These categories were used for this analysis as they align to

the areas of the critical importance of the 4th industrial revolution as suggested by Deloitte (2018). In addition, this analysis considered both compulsory and elective modules to assess whether the category areas were currently a focus area of South African and international business schools. If all five business schools had either a compulsory or elective module in a certain focus area, they would score 100%, whereas if only one business school had a focus on an area, they would score 20%. This analysis of the business school curriculum comparison aligned to specific themes is explored further in points 7.1 – 7.3.

7.1 Module relating to entrepreneurship

This theme explored whether the reviewed business schools offered either a compulsory or an elective module on entrepreneurship. It was found that 100% of the local business schools reviewed have a module in their MBA on entrepreneurship. Three of the five local business schools offer a module on entrepreneurship as an elective. Two of the five business schools offer this module as a compulsory module in their MBA programme. The focus of South African business schools on entrepreneurship was similar to the focus of international business schools. All the international business schools reviewed had either a compulsory or elective module on entrepreneurship. Three of the five international business schools offer a module on entrepreneurship as an elective, whereas two of the five business schools offer this module as a compulsory module in their MBA programme.

7.2 Module relating to dealing with change or complexity

This theme explored whether business schools reviewed have a focus on change or complexity in their MBA programme. A total of 80% of the international business schools have a direct focus on change or complexity, and 60% of them have a compulsory module on change or complexity. This is compared to only 20% of local business schools with a change or complexity module. In addition, the one local business school that currently has this module offers it as an elective.

7.3 Module relating to technology or the 4th industrial revolution

All the international business schools reviewed focus on technology or digital transformation, with 60% offering this module as compulsory. This is compared to 40% of business schools in South Africa, which focus on this area, and only two business schools offer this as a compulsory module.

The above suggests that whilst there is a correlation between international and local business schools in some areas, such as entrepreneurship, there are notable gaps in the focus of other skills required for the 4th industrial revolution. A key gap identified is the current focus on technology-linked technical skills dealing with change or complexity.

8. Discussion

The following findings are primarily descriptive with the support of figures and tables where necessary. The skills required for the 4th industrial revolution are notably different from those required in previous revolutions. While some of the skills may still be applicable, such as traditional management technical skills and soft skills, leaders need to understand aspects such as technology and entrepreneurship to leverage the opportunities presented by these skills into business success. Researchers such as Kazancoglu and Ozkan-Ozen (2018) contend that the skills required for the 4th industrial revolution include both technical and soft skills and emerging skills such as complex and critical thinking to deal with the changing world of work. Persuad (2019) adds that technical skills in terms of understanding and effectively using new technologies are an important skill for leaders in the 21st century as the 4th industrial Revolution has ushered in a new wave of technology that is shaping and influencing the way that business is done. Figures 2 and 3 compare South African and International Business School's focus areas.

Deloitte (2018) classifies the skills required for the 4th industrial revolution within four broad categories: readiness skills, soft skills, technical skills, and entrepreneurship. These categories were used to categorise and classify the skills currently offered by local and international business schools in Figures 3 and 4.

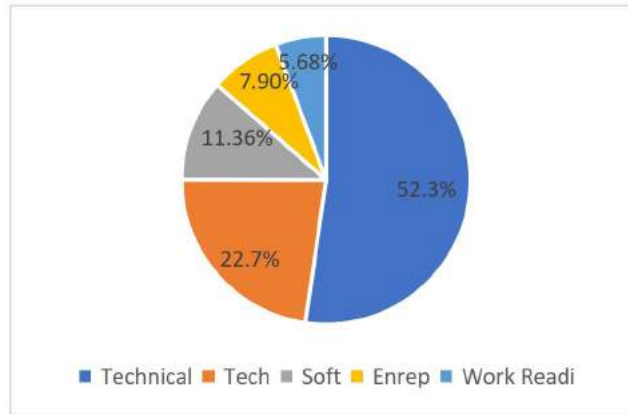


Figure 3: South African MBA curriculum focus – Core modules

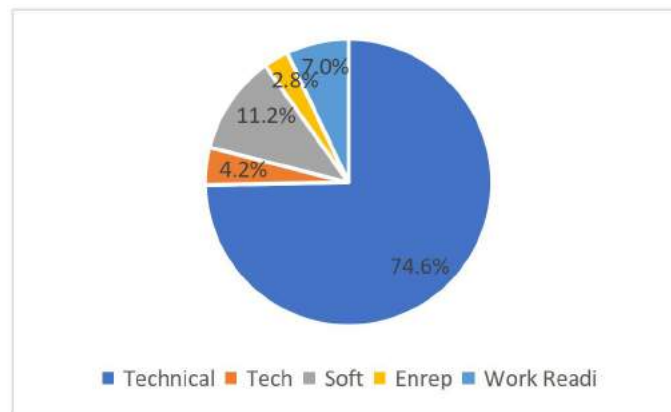


Figure 4: International MBA curriculum focus – Core modules

When comparing the MBA curriculum's focus for local and international business schools, it was found that soft skills and work readiness skills bear a similar focus. There are variations between the focus on technical, technology, and entrepreneurial skills. Most notably, there is a significant variation in technology-linked technical skills between international and South African business schools. It was found that international business school MBA curriculums place far more emphasis on technology skills and entrepreneurial skills as part of their core curriculum when compared to South African business schools. Adversely, South African business schools focus more aspects of their curriculum on traditional technical skills. In addition, international business schools (except one) offer far more elective or optional modules than South African business schools. This could be cited as an intentional strategy for MBA students to design their own learning path which is relevant to their areas of focus or development. In the South African context, fewer optional or elective modules are offered.

There is a current disconnect as the literature, found that technology-related skills were the most required skill for leaders in the 4th industrial revolution. However, technology-related skills consist of only 4.2% of the focus of the current South African MBA curriculum, compared to a focus of 22.7% by international business schools. Similarly, South African business schools' current focus on entrepreneurial skills as a core module is 2.8% compared to 7.9% focus at international business schools. Furthermore, the findings from the literature show that technology-related-technical skills are regarded as the most critical skill required for the 4th industrial revolution. However, this skill is, on average underrepresented in the five South African business schools reviewed. A focus on technology-related technical skills should be seen as an important aspect for both South African and South African business schools. According to Rodrik (2018) technology could be used in developing countries to both improve social conditions as well as lead to sustained national GDP growth. In contrast in the Cisco Global Digital Readiness Index, South Africa ranks 78 out of 141 and reports that aspects such as technology adoption and technology infrastructure in South Africa are still left

wanting (Mzekandaba, 2020). A renewed focus on technology-related technical skills in South African business schools could assist in increasing the technology adoption rate and the potential use of technology for further growth and development.

This conclusion draws significant consideration relating to the efficacy of South African business schools in developing leaders fit for the 4th industrial revolution and indicates that South African business schools need to identify ways to enhance and ensure that their curriculum and programs, such as the MBA, are aligned to the need of the changing business environment and current and future stakeholders.

9. Recommendations and managerial implications

The study focused on reviewing five South African and five international MBA programmes offered in an attempt to determine if they include key critical skills required for the 4th industrial revolution. This study identified key skills required by leaders for the 4th industrial revolution, which was suggested through the literature reviewed. These skills could be broadly grouped into four categories, work readiness skills, soft skills, technical skills, and entrepreneurial skills.

This study found that whilst the current focus on soft skills in the MBA concerning the skills required for the future world of work is adequate, there are evident gaps in the technical skills required as suggested by the literature. This focuses on technology-related technical skills not adequately represented in South African MBA programmes but is considered a key skill for leaders in the 21st century. The lack of focus on technology-related technical skills was evident compared to international and local MBA curriculums. Furthermore, technology-related technical skills were the most common identified skills required for the 4th industrial revolution. Therefore, this study recommends a review of the current MBA curriculum and including critical skills related to the 4th industrial revolution, such as technology-linked technical skills.

10. Limitations and future research

A limitation identified in this study was the approach of this study. Based on curriculum content, this study reviewed 5 top-ranked South African business schools and 5 top-ranked international business schools. This study does not consider individual school strengths or focus on skills related to the 4th industrial revolution through in-depth case analysis and interviews. This may be considered a limitation, as some schools may have more adequately prepared their institution to provide current and relevant information skills. In addition, a limitation identified in this study was the sample size. Given that this study focused on 5 local and 5 international business schools, it may have inherently excluded (*based on rankings*) specific business schools with a more explicit focus on the skills required for the 4th industrial revolution. It is therefore recommended that for future research, in-depth qualitative interviews be conducted with all stakeholders relating to a business school to assess, understand and improve the efficacy of South African business schools in the 4th industrial revolution.

11. Conclusions

The business environment is changing rapidly due to external factors such as the Covid-19 pandemic, global political instability and the advancement of technology ushered by the 4th industrial revolution. Business schools have a strategic role in developing leaders that can respond to the changing business landscape to achieve business success. Programmes such as the MBA are regarded as flagship business offerings for executives and leaders to enhance their abilities and capabilities. Based on the literature and curriculum content reviewed, this study found that whilst there is significant perceived value in the current MBA offered by South African business schools, there are critical gaps in the approach adopted. This includes a lack of adequate focus on aspects such as technology-related technical skills and entrepreneurial skills. This study, therefore, recommends a review of the current focus of the MBA programme with a lens to include specific focus areas on technology-related technical skills and entrepreneurial skills. This will assist in cultivating leaders equipped with the necessary skills, competencies, and abilities to deal with the changing world of work and the 4th industrial revolution.

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BUSINESS MANAGEMENT



The Influence Of Political Branding On Voter Intention In South Africa

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Keywords

Allegiance, Fanaticism, Political Branding, Voter intention.

Abstract

The aim of the research was to determine the variables of political branding that influence voter intention in South Africa (SA). Using exploratory research and a quantitative research paradigm, a survey was conducted using a structured self-administered questionnaire. The initial items used were self-generated and based on the work of Ahmed, Lodhi and Ahmad (2017) and Banerjee and Chaudhuri (2016). The measuring instrument was validated by conducting an exploratory factor analysis (EFA), whereafter the Cronbach's alpha values were calculated for each of the valid components to confirm inter-item reliability. Within the premise of political branding, three independent variables emerged, while two dependent variables emerged within the premise of voter intention. This exploratory study can be considered one of the first in SA to identify political branding variables used by voters when they cast their vote.

1. Introduction and problem statement

The global political environment is constantly changing and is regarded as extremely volatile (Gibson, 2019:5). Changes within the political sphere of a country can have devastating effects on the country's economy (Filippou, Gozluklu & Taylor, 2018:1741) and the way in which a country is governed, and the political party at the helm, can influence how a country is perceived internationally (Aisen & Veiga, 2011:1380). Due to the latter, the awareness of political branding amongst political parties has increased (Needham & Smith 2015). Political branding builds on the premise that political parties, candidates and the causes that they associate themselves with can be managed as products, and that these political entities can be managed and studied as brands (Milewicz & Milewicz, 2014:258).

Although theories used in political branding research come from various fields including politics, marketing and communication, Farhan and Ahmad (2015:344) believe that the concept of branding in politics is unexplored in contemporary research. Almohammad (2014:190) and Ahmed, Lodhi and Ahmad (2015:149) put forward that there are several similarities between the method that voters use to choose their political parties and the way they choose their commercial brands. This view confirms the sentiments of Smith and French (2009:215) who state that a consumer based cognitive learning approach should be adopted when parties consider how voters perceive the political brand. According to Cosgrove and Shrader (2022:49), if political leaders ran a campaign based on personal branding instead of a coordinated campaign including the political party's values, it will provide mixed results at the poll. Political parties are thus, more than ever, embracing the concept and strategies of brand management to make their political product attractive, appealing, trustworthy and differentiable. Parties nowadays intentionally create a basis for long-term relationships and provide sources to act as decision-making drivers. It is therefore important that political parties focus on shaping the voters' opinion and attitude to generate positive voting preferences (Butler & Powell, 2014:495) and ensure voter loyalty (Ahmed *et al.*, 2017:158). Similar to customer loyalty, voter loyalty is a behavioural impulse to buy (vote) repeatedly from the same organisation (political party) (Suaib, Jusoff, Abdullah,

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Zuada & Suacana, 2017:1019). Slipetska (2021:18) asserts that, to create a strong and effective political brand, political parties should have a high quality visual political product, that is compliant with the political brand and values, which ultimately meets the needs of the target electoral group. Since the county's first democratic election in 1994, the political landscape in South Africa has become increasingly competitive (Mattes, 2012:140). South African citizens have a wide array of choices in political parties (Mattes & Richmond, 2014:154). The latter was evident in the 2019 national election, where 48 different parties successfully registered for the elections (Nemakonde, 2019:1). Hlungwani's (2021:vi) results indicate that communication alone is not enough to lure voters in SA, voters seek material benefits as well. Booysen (2014:15) and Dabula (2016:40) put forward that South African political parties lack understanding and expertise on political branding, specifically about how this can influence their election campaigns, voters' loyalty, trust and voting intention. Although the number of political parties has significantly increased in SA since 1994, little research has been conducted on political branding in SA, and political parties in SA lack expertise in political branding, especially on how it influences voting intention of voters. The latter has led to the research question of this exploratory study, namely: What variables shape political branding and which of these variables have an influence on voter intention in SA?

The primary objective of this study is thus to identify the variables that influence political branding in SA and determine which of the identified variables have an influence on voter intention. To achieve the primary objective of this study the following secondary objectives were developed:

- to conduct a literature overview on the importance of political branding, the variables that shape political branding and the variables that influence voting intention;
- to empirically test valid and reliable variables to measure political branding in SA;
- to empirically establish if, and how, these identified variables influence voter intention; and
- to provide conclusions and provide recommendations to political parties on how to use political branding to influence voters' intentions in SA.

2. Literature Review

A brand can be viewed as a "distinctive name and or symbol" and can be viewed as a differentiating feature in an increasingly competitive environment (Farhana & Ahmad, 2015:345; Gong, Wang, Yan, Liu & Ali 2020:1). Building on this definition, Kimbarovsky (2021:1) puts forward that a brand is not only distinctive through its name or logo, but it provides additional value based on aspects over and above its expected performance. A brand can thus be viewed as a dynamic interplay of strategically oriented elements used as a means of communication which represents the values, character and personality of an organisation, product or service (Peng & Hackley, 2009:180; Milewicz & Milewicz, 2014:236). A strong brand, therefore, should have a clear identity that resonates with both internal and external stakeholders (Pich & Dean, 2015:132). The concept of branding has expanded significantly from the fast moving consumer goods industries in which it was initially applied (Phipps, Brace-Govan & Jevons, 2010:496; Jacobs & Mafini, 2019:8), and is increasingly used in non-traditional, social markets such as politics (Smith & French, 2009:209; Smith & Speed, 2011:1316; Ahmed, Lodhi & Shahzad, 2011:31). Via their names and ideological postures, political parties are modelled as brands that send a message to voters and other stakeholders, such as sponsors. A party's past and current actions influence its brand image, and the personalities forming the party's leadership structure often account for whether or not such a party would be seen as a brand worthy of being patronized (Nwanganga, Peter & Mirian, 2017:3).

Although Farhan and Ahmad (2015:342) state that the implementation of branding in politics is under-researched, Grimmer and Grube (2019:269) note that in the last two decades, literature on political branding has developed its own distinct trajectory and is now viewed as a subfield of political marketing. Authors (Ahmed *et al.*, 2017:148; Pich & Dean, 2015:133; Slipetska 2021:25) agree that the concept of branding in politics is important for both practical and theoretical reasons. The practical reasons are related to economic as well as social cost associated with voting intention; with the theoretical importance being that it encourages researchers to study the factors behind the voters' or communities' thought process that influence their behaviour towards voting for a specific political party (Foos & Rooij, 2017:291). Despite this wide acknowledgement of the importance of

branding in politics, research on the concept of branding in politics is not well established and shows limited consideration regarding the extent to which political brand choices by voters can be conceptualised in relation to customer brands (Smith & Speed, 2011:1319; Almohammad, 2014:190; Milewicz & Milewicz, 2014:244). Based on the importance of the decision about which party to vote for in a democratic society, political parties are continuously concerned with gaining an understanding of the factors that influence their potential voters in making their decision (Banerjee & Chaudhri 2016:559).

Research by Banerjee and Chaudhri (2016:560), which was informed by an extensive literature survey, identified five key variables of associations with the overall political party, namely campaign effectiveness, image of its leaders, tenure effect, meaning and trust attached to the party. These five variables of overall association were explored in the current study by conducting an exploratory factor analysis (EFA) on the data collected. Based on the validity and reliability results, only three variables were deemed relevant for the current data set, namely the image of the party leaders; political brand meaning; and political brand trust. The remainder of the literature review will focus on the three variables of branding that emerged.

Brand trust is the expectations of a brand's reliability and intentions (of the party) in an uncertain situation (Delgado-Ballester, 2004:532; Geurkink, Zaslove, Sluiter & Jacobs, 2020:250). Purwanto, Deviny and Mutahar (2020:268) put forward that the primary objective in marketing is to develop an intensive connection between the brand and its customer, and trust plays the most noteworthy role in building this connection. It therefore comes as no surprise that research shows that trust is the core binding force in strengthening the relationship between political leaders and voters (Thanh, Ngo & Aureliano-Silva, 2021:4). Despite the view by Marland and Flanagan (2013:562) that politicians have increasingly embraced commercial branding techniques to grow trust in their political brands, researchers, such as Smith and French (2009:213) and Ahmed *et al.* (2011:133), note that prior literature points to the fact that trust in politics is declining. The decline in trust can be attributed to the various sources of the development of brand trust, for example candidates making promises during the election campaign which are not fulfilled once taking office, and a lack of transparency in policy-making which negatively affects trust in a party. Banerjee and Chaudhri (2016:560), however, are of the opinion that the political brand can offer the voter result oriented benefits such as safety and security, prospects of economic development, financial growth and improvement of quality of life to ensure trust in the brand.

Brand meaning refers to a distinctive and evolving emotional and cognitive understanding associated with a brand as a result of a publicly negotiated process (Tierney, Karpen & Westberg, 2016:914). Political brand meaning is, however, unique as the majority of voters never have the opportunity to meet any politicians, and therefore do not form their opinions directly and unfiltered (Phipps *et al.*, 2010:499). Voters thus have to depend on a lot of different sources of information (such as logos and party manifestos) to understand the brand meaning (Gong *et al.*, 2020:1; Banerjee & Chaudhri, 2016:561). These sources of information assist political parties to convey brand meaning in order to assist voters to build knowledge and make informed decisions when selecting a party to vote for. The transfer of party meaning is often influenced by the trustworthiness, knowledge and attractiveness of the political party leader (Gorbaniuk, Wilczewski, Ivanova, Bevez & Gorbaniuk, 2021:210).

Brand image refers to the "perceptions about a brand as reflected by the brand associations held in the consumer memory" (Keller 1993:3). Brand image is one of the most extensively researched themes in political branding studies (Grobaniuk *et al.*, 2021:211). A study by Khatib (2012) pointed to the importance of brand image in politics and states that a candidate's or a party's image can influence the success of political marketing. Accordingly, Guzmán, Paswan and Steenburg (2014:180) believe that voters see themselves, and the candidate, as a distinct brand. Farhan and Ahmad (2015:343) continue that this view of a voter's personal-brand influences their perception of a political candidate's brand image. The party leader often has the most impactful meaning, as leaders' image is more easily identifiable and communicated. A leader is, therefore, important in the transfer of his/her associations to the party brand. Leaders who are perceived to have a good reputation (Rachmat, 2014:61) and are

viewed as competent and knowledgeable are positively perceived and instil trust (Grobanuik *et al.*, 2021:211).

A political party is viewed as powerful when it has the support of the majority of the voters in a given area/country (Nwanganga *et al.*, 2017:7). It is therefore important for parties to ensure that their offering appeals to the relevant stakeholders. The simple fact that political parties invest substantial financial resources into their marketing campaigns suggests that they want to have some influence on voters' intentions which could be viewed as a return on their investment (Krupnikov, 2011:801). With regards to voting intention, two dependent variables were developed based on the works of Olson (2009), Thorne and Bruner (2006) and Cengiz and Cengiz (2016) to measure voting intention for this exploratory study, namely allegiance and fanaticism. After conducting the EFA both variables proved to be valid and reliable.

Brand allegiance is viewed as “the biased behavioural response expressed over time by some decision-making unit, with respect to one or more alternative brands out of a set of such brands” (Cengiz & Cengiz, 2016:425). Brand allegiance further has an influence on the repeat purchasing behaviour of customers and limits customers from switching to competitive brands. Needham (2006:179) argues that, similarly to business organisations, political parties need to focus on repeat business. This is particularly due to changeable and unpredictable political policies (products) (Grobanuik *et al.*, 2021:211). Contemporary consumers increasingly demonstrate public displays of loyalty and passion (Nyadzayo, Leckie & McDonald, 2016:888), and are more willing to go to extremes to pursue or support various firms, consumption activities or experiences (Chung, Farrelly, Beverland & Karpen, 2018:15). The devotion amongst these customers is significant, which manifests via their behaviour (Quach, Hewege & Thaichon, 2019: 325). Ahmed *et al.* (2017:150) highlight the important role of party allegiance in shaping the attitude and perceptions of voters. Chung *et al.* (2018:17) denote that there has been limited studies that examine allegiance in political branding.

Fanaticism is an intense form of loyalty that goes beyond the average, ordinary or common level (Samra & Wos, 2014:270). Fanaticism is often regarded as an individual temperament, a state caused by desperation and/or psychological instability that drives a person to engage in political activity that goes well beyond the mainstream (such as, for example, terrorism activities) in an attempt not to come to terms with an opponent, but defeat it (Olson, 2009:83). The result of an extensive literature review by Chung *et al.* (2018:24) show that research explicitly addressing the phenomenon of consumer fanaticism has been scant and reflects conflicting perspectives. Despite the fact that the vast majority of past studies have emphasized fanaticism as demonstrated through extreme activities and behaviour, a study by Thorne and Bruner (2006:59) provides empirical support that there are common characteristics of consumer fanaticism, which are not associated with negativity as was often reported. These four characteristics are internal involvement, external involvement, a desire for interaction with others and a wish to acquire source-related material. Therefore, while much of the existing literature is dominated by negative depictions of fanaticism (Thorne & Bruner, 2006:52), fanaticism can also be viewed as a strong, intense, extreme level of commitment (Chung, Beverland, Farrelly & Qeuster, 2008:333) that could serve as a strategy to achieve power (Olson, 2009:83). Based on the above literature the hypothesised model (Figure 1) was developed.

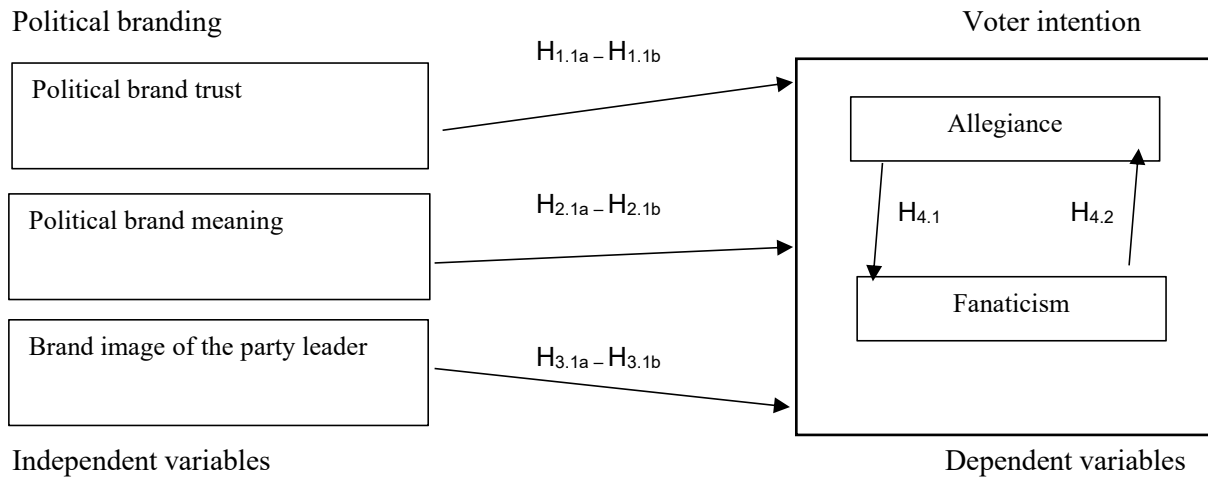


Figure 1: Hypothesised model

3. Results and Findings

Based on the hypothesised model (Figure 1) the variables that can possibly influence voters' loyalty are divided into four sets of hypotheses.

First set of hypotheses: The influence of political brand trust on voter intention

- H_{1.1a}: Political brand trust influences allegiance.
- H_{1.1b}: Political brand trust influences fanaticism.

Second set of hypotheses: The influence of political brand meaning on voter intention

- H_{2.1a}: Political brand meaning influences allegiance.
- H_{2.1b}: Political brand meaning influences fanaticism.

Third set of hypotheses: The influence of the brand image of the party leader on voter intention

- H_{3.1a}: The brand image of the party leader influences allegiance.
- H_{3.1b}: The brand image of the party leader influences fanaticism.

Fourth set of hypotheses: The influence of the inter-relationships between allegiance and fanaticism.

- H_{4.1}: Allegiance influences fanaticism.
- H_{4.2}: Fanaticism influences allegiance.

4. Methodology

The exploratory study sought the perceptions of the residents of a selected geographical area in South Africa and utilised the quantitative research paradigm. According to Struwig and Stead (2013:3), quantitative research is a useful tool to quantify behaviours, opinions and attitudes, thus assisting in answering the research questions of this paper. Furthermore, quantitative research is suitable for testing hypotheses and the results obtained from this method can be condensed into statistics, allowing precision and standardisation (Eriksson & Kovalainen, 2016:23; Plooy-Cilliers, Davis & Bezuidenhout, 2016:10).

For the purpose of this study, the exploratory research design was utilised. Exploratory research is concerned with clarifying ambiguous problems or gaining better understanding of a problem. Exploratory research is conducted when insight is needed into a problem, and the variables need to be considered (Aaker, Kumar & Day, 2017:156). Exploratory research, is also used in the understanding of underlying reasons, opinions and motivations of individuals. This research approach is predominantly used in analysing a problem about which there is little or no in-depth information (Jennings, 2010:17). Exploratory research can be carried out by using various methods which include the use of case analysis, focus groups or surveys (questionnaires) (Rahi, 2017:2; Struwig & Stead, 2013:7). The current research can therefore be viewed as exploratory, as it acquired insight into the influence of political branding on voter intention in SA. This research will serve as preliminary

research in preparation of a more structured research project, identify limitations and determine priorities for further research.

The initial items used in the questionnaire were based on the work of Ahmed *et al.* (2017) and Banerjee and Chaudhuri (2016). After an extensive literature review additional items for inclusion in the questionnaire were self-generated. A total of 20 items were included in the questionnaire. Respondents were asked to give their level of importance for the stated items, with 1 = unimportant, and 5 = utmost importance. The measuring instrument was validated by conducting an EFA, whereafter the Cronbach's alpha values were used to confirm inter-item reliability. As suggested by George and Mallery (2003:50), the study used the Cronbach's alpha cut-off point of 0.7 and higher to be considered as good. All items with a factor loading of less than 0.5 were disregarded for further statistical analysis. In addition, items with a factor loading of 0.5 or higher loading on more than one variable (cross-loading), were also disregarded (Zikmund, Babin, Carr & Griffen, 2009:594).

The sample design for this study was a combination of convenience sampling (any individual above 18 years and above, being an SA citizen) at a given location at a given time). A survey was conducted by means of a structured self-administered questionnaire. Screening questions were posed (all respondents had to be 18 years or older and be a South African citizen), and informed consent was secured. Respondents were also informed of the voluntary nature of participation and that they might withdraw at any point without any consequences. A total of 157 useable questionnaires were collected.

5. Results and Findings

A total of 157 respondents formed the sample of this study. Table 1 represents the demographic data of the respondents.

Table 1: Demographic information of respondents

Variable		Percentage
Gender	Female	52
	Male	48
Age group	18-23	17
	24-33	30
	34-43	20
	44-53	19
	54-72	12
	73 +	2
Ethnic affiliation	Black	57
	Indian	3
	Coloured	15
	White	25
Home language	Afrikaans	20
	English	21
	Xhosa	45
	Zulu	14
Employment status	Full-time employed	40
	Part-time employed	17
	Self-employed	12
	Unemployed	31
Level of education	Grade 12 and below	30
	Certificate	11
	Diploma	24
	Degree	18
	Post Graduate Degree/Diploma	17

As can be seen from Table 1, the gender of the respondents was almost equally distributed with females representing 52% of the sample. Half of the respondents was between the ages of 24 – 43

(30% + 20%). More than half of the respondents were of the Black ethnic group (57%), while 25% of the respondents were of the White ethnic group. With regards to home language, 45% of the respondents indicated Xhosa to be their home language, while 21% of the respondents were English-speaking. When reviewing the employment status of the respondents, it can be noted from Table 1 that 40% are full-time employed, and 31% of the respondents are unemployed. The educational background of the respondents shows that 30% of them has an educational level of Grade 12 and below, 24% holds a diploma qualification and 17% has a post graduate degree/diploma.

4.1 Data analysis

The following section of this paper discusses the results of the EFA construct extraction and Cronbach's alpha coefficients analyses employed to determine the validity and reliability of the measuring instrument used in this study.

4.1.1 Validity and reliability

This study made use of an EFA to extract the variables and to determine the validity of the measuring instrument. According to Van Voorhis and Morgan (2007:49), a sample size of 157 is considered acceptable for EFA as the minimum requirement for sample size accuracy for exploratory factor analysis is 150 respondents. The items with factor loadings greater than 0.5 and those that only loaded onto one factor were considered significant in this study. This is in line with what is suggested by Van Voorhis and Morgan (2007:50). Eigenvalues were calculated and utilised as the point estimates to determine which of the extracted variables were to be retained, with only those items with an Eigenvalue above 1.0 being retained (Cokluk & Kocak, 2016:540). In addition, all variables had to have at least three retained items, as a construct with fewer than three items is generally regarded as weak and unstable (Costello & Osborne, 2005:5). The retained variables and items were then assessed for reliability in line with the categorisations of the Cronbach's alpha coefficients (α). Cronbach's alpha coefficients of 0.7 and above were regarded as acceptable for this study. George and Mallery (2003:50) state that a Cronbach's alpha coefficient of 0.7 and higher is considered acceptable. Table 2 presents the validity and reliability results for the independent variables.

Table 2: Validity and reliability of the independent variables

Variables	M	SD	Eigen value	Factor loadings	Cronbach's alpha
Political brand trust	4.10	1.05	4.00		0.873
Is interested in me as a person and not just in getting my vote	4.09	1.07		0.733	
Is committed to listening to their voters' views	4.31	0.98		0.854	
Expedites the promises made by the party's electoral campaign after being elected	4.16	1.09		0.752	
Is concerned with the present and future interests of their voters	4.26	0.88		0.771	
Is transparent in sharing information	3.98	1.09		0.703	
Meets my personal expectations about the future of our country	3.97	1.10		0.528	
Shares my political ideologies	3.91	1.14		0.566	
Political brand meaning	3.60	1.16	2.41		0.774
Has an innovative logo	3.38	1.30		0.863	
Has an inventive slogan	3.52	1.27		0.861	
Has a clear party manifesto	4.17	0.91		0.549	
Receives favourable publicity in the media	3.54	1.08		0.523	
Brand image of party leader	4.30	0.93	4.55		0.877
Promotes youth leadership within the party	4.36	0.89		0.579	
Does not play the blame game with other	3.84	1.21		0.678	

Variables	M	SD	Eigen value	Factor loadings	Cronbach's alpha
political parties					
Is sincere	4.29	0.94		0.704	
Has a dynamic personality	3.84	1.00		0.627	
Takes into account the repercussions of his/her actions	4.26	1.05		0.622	
Avoids posting social media messages encouraging violence	4.40	1.06		0.719	
Promotes equal opportunities for all	4.55	0.83		0.647	
Is competent to become the president of the country	4.56	0.74		0.649	
Acts with integrity	4.68	0.67		0.701	

As can be seen in Table 2, the variable *political brand trust* retained all seven items designed to measure the variable, with factor loadings ranging between 0.528 and 0.854. The variable had an Eigenvalue of 4.00. The Cronbach's alpha coefficient of 0.873 indicates that the items measuring this construct are deemed reliable. The individual item mean scores ranged from M=3.91 to M=4.31, It is interesting to note that the items relating to the political party being interested in the present and future interest of the voters (M= 4.26) and the commitment of the party to listen to their voter's views (M=4.31) attracted such high mean scores. The variables had an overall mean score of 4.10, indicating that, on average, the respondents were in agreement with the items listed. The standard deviation for this construct was 1.05, which indicates that the responses are fairly similar.

As per Table 2, the variable *political brand meaning* had four retained items, all with factor loadings of above the 0.5 cut-off point adopted for this study. The Eigenvalue was 2.41 and the variable had a Cronbach's alpha coefficient of 0.774 which indicates that the four items measuring this construct are deemed reliable. The individual mean scores ranged from M=3.38 to M=4.17. The item with the highest mean score related to the party having a clear manifesto. The variable had an overall mean score of 3.60 (tending to 4) which indicates that, on average, the respondents were in agreement with the items measuring this variable. The standard deviation for this this construct was 1.16, which indicates that the responses are fairly similar.

The variable *brand image of the party leader* has nine retained items with factor loadings ranging between 0.579 and 0.719 and an Eigenvalue of 4.55 (as per Table 2). The Cronbach's alpha coefficient of 0.877 indicates that the items measuring this construct are deemed reliable. Individual item mean scores ranged from M=3.84 to M=4.68. Acts of integrity attracted the highest mean score (M=4.68), with the item relating to the party leader being competent to become the president of the country attracting the second highest mean score (M=4.56). The variable had an overall mean score of 4.30 which indicates that, on average, the respondents was in agreement with the items measuring this variable. The standard deviation for this construct was relatively low at 0.93, which indicates that the responses are fairly similar. Table 3 presents the validity and reliability results for the dependent variables.

Table 3: Validity and reliability of the dependent variables

Variables	M	SD	Eigen value	Factor loadings	Cronbach's alpha
Allegiance	3.83	0.95	2.36		0.765
Cast a vote for my political party even if my family is against it	4.35	0.85		0.749	
Defend my political party at social gatherings	3.77	0.98		0.838	

Variables	M	SD	Eigen value	Factor loadings	Cronbach's alpha
Recommend my political party to friends and family to join	3.94	0.95		0.723	
Invest my time and energy towards my political party	3.29	1.02		0.573	
Fanaticism	3.74	1.16	2.89		0.869
Remain committed to my preferred political party and its leader even after reading negative media comments about the party and its leader	3.63	1.15		0.588	
Stay loyal to my political party even if leadership changes to someone I may not personally like	3.86	1.10		0.792	
Vote for my political party even if other political parties provide better electoral campaigns	3.80	1.19		0.914	
Vote for my political party even if other political parties have leaders that I can relate to	3.70	1.22		0.924	

The variable *allegiance* had four retained items (Table 3), with factor loadings ranging between 0.573 and 0.838. The variable had an Eigenvalue of 2.36 and a Cronbach's alpha coefficient of 0.765 which indicates that the items measuring this variable are deemed reliable. Individual item mean scores ranged from M=3.29 to M=4.35, with the item "cast a vote for my political party even if my family is against it" attracting the highest score. The variable had an overall mean score of 3.83 which indicates that, on average, the respondents were in agreement with the items measuring this variable. The standard deviation for this construct was 0.95, which indicates that the responses from the respondents are fairly similar.

As per Table 3, the variable *fanaticism* retained all four items designed to measure the variable, as all had factor loadings above the 0.5 cut-off point adopted for this study. The Eigenvalue was 2.89 and the variable had a Cronbach's alpha coefficient of 0.869 which indicates that the four items measuring this variable are deemed reliable. It is interesting to note that the mean scores for all four items were quite similar, ranging from M=3.63 to M=3.86. The variable had an overall mean score of 3.74 which indicates that, on average, the respondents were in agreement with the items measuring this variable. The standard deviation for this this variable was 1.16, which indicates that the responses are fairly similar. In the section to follow the independent and dependent variables will be operationalised based on the validity and reliability results presented.

4.1.2 Operationalisation

Operationalisation is the process of conceptualising a concept, so that the concept can be clearly defined and outlined by a theoretical foundation (Williamson, 2016:1). Shuttleworth (2019:1) concurs and states that operationalisation is the process of strictly defining items into measurable variables. Cohen, Manion and Morrison (2007:81) indicate that operationalisation is needed to conduct good research, while Thompson (2017:1) is of the opinion that operationalisation is an imperative step, especially in conducting quantitative research. With the latter taken into consideration, Table 4 presents the operationalisation of the independent and dependent variables.

Table 4: Operationalisation of independent and dependent variables

Variable	Construct	Operationalisation
Independent	Political brand trust	Political parties expedite the promises made by the party's electoral campaign after being elected, while being concerned with the present and future interests of their voters and not just in getting their votes. The political party must be transparent in their dealings, listen to their voters' view and have similar expectations about the future of the country as their voters.
	Political brand meaning	Political parties have an innovative logo and inventive slogan, have a clear manifesto in place and receive favourable publicity in the media.
	Brand image of the party leader	A political party leader is sincere, acts with integrity and has a dynamic personality. The leader promotes equal opportunities to all, as well as youth leadership, within the political party. The party leader does not play the blame game with other political parties. The party leader considers the repercussions of his/her actions and does not engage in posting social media messages that promote violence. Above all, a political party leader is competent in becoming President of the country.
Dependent	Allegiance	A political party member defends, recommends and invests their time and energy in the party; who will cast their vote even if their family members are against it.
	Fanaticism	A member of a political party will keep voting for their party even if leadership changes to someone he/she may not personally like, other political parties provide better electoral campaigns, or other political parties have leaders who he/she can better relate to; and even after reading negative media comments about the party and its leader.

The next section will present the results of the Pearson product-moment correlation coefficient calculated for this study.

4.1.3 Pearson product-moment correlation coefficient

The Pearson product-moment correlation coefficient is used to determine the strength and the linear relationship between two variables (Struwig *et al.*, 2013:168). According to Struwig *et al.* (2013:167) Pearson product-moment correlation values range between 1 to -1, where -1 represents a perfect negative relationship between the two continuous variables and 1 represents a perfect positive relationship between the two continuous variables. The strength of the correlations is guided by the following values; a weak correlation ≥ 0.29 ; a moderate correlation ≥ 0.49 and a strong correlation ≥ 0.50 (Cohen, 1988:77). Table 5 presents the results of the Pearson product-moment correlation coefficients that were calculated for this study.

Table 5: Correlation matrix of the dependent and independent variables

Variables	A	F	PBT	PBM	BIL
Allegiance (A)	1				
Fanaticism (F)	0.501	1			
Political brand trust (PBT)	0.355	0.258	1		
Political brand meaning (PBM)	0.375	0.374	0.351	1	
Brand image of the party leader (BIL)	0.146	0.213	0.538	0.335	1

As can be seen from Table 5, all the variables had positive Pearson product-moment correlation coefficients. However, a weak correlation was found between three sets of variables, and five of the correlations were of moderate strength (≥ 0.49). Allegiance, however, reported a strong correlation with fanaticism ($r = 0.501$). This strong correlation is supported by Decrop and Berbaix (2014) and Fillis and Mackay (2014), who indicate that fanaticism can be perceived as an extreme level of allegiance. Political brand trust reported a strong correlation with brand image of the party leader ($r = 0.538$). This is in line with findings of Banerjee and Chaudhuri (2016), who found a statistically significant relationship between political brand meaning and the party leader's brand. It is further supported by Cwalina, Falkowski and Kaid (2000) who state that political brand meaning, and the brand of the political leader are considered simultaneously by voters in determining which party to cast their vote for. The next section will discuss the findings of the multi-collinearity diagnostics testing done to eliminate multi-collinearity and enable a sound multiple regression analysis.

4.1.4 Multi-collinearity diagnostics testing

It is necessary to establish whether the data is free from multi-collinearity prior to multiple regression analysis testing. Multi-collinearity diagnostics analysis facilitates the identification of measuring items or variables that have a high correlation among themselves (Kraha, Turner, Nimon, Zientek & Henson, 2012:10). Variance Inflated Factor (VIF) values greater than 10 indicate a collinearity problem. Multi-collinearity diagnostics testing was conducted on all the independent and dependent variables. The tolerance values for both the independent and dependent variables were larger than 0.1, ranging between 0.332 and 0.558. Relatedly, the VIF values of the variables were below the threshold of 10, ranging between 1.325 and 3.072. These results suggest that the both the independent and dependent variables were free from collinearity. As the data set is free from multi-collinearity problems, multiple regression analysis could be conducted.

4.1.4 Multiple regression analysis

Multiple regression analysis is a tool that can be used to forecast the dependent variable based on numerous independent variables of a hypothesised model (Kothari, 2004:130). Three separate multiple regression analyses were conducted for this study. According to Mugenda and Mugenda (2003:142), when a t-value of a factor is less than 1.96 at a significance level of 0.05 or between 1.96 and 3.09 at a significance level of 0.001, the null hypothesis is then rejected.

Table 6: Multiple regression results of independent variables influencing Allegiance

Dependent variable: Allegiance		Adjusted R ² = 0.193			Hypothesis number	Hypothesis
Independent	Beta	t-value	Sig. (p)			
Political brand trust	0.292	3.620	0.000*	H _{1.1a}	Accepted	
Political brand meaning	0.251	3.927	0.000*	H _{2.1a}	Accepted	
Brand image of the party leader	-0.139	-1.46090	0.146	H _{3.1a}	Rejected	

* $p < 0.001$

From Table 6, it is clear that about 19% of the variance in allegiance can be explained by the variances in the independent variables. Evidence of statistically significant relationships was found (at $p < 0.001$) among the independent variables (political brand trust and political brand meaning) and allegiance (dependent variable). These variables therefore influence allegiance in SA. This is also evident from the t-values which exceed the critical value of 3.09 at $p < 0.001$. Therefore, H_{1.1a}, and H_{2.1a} are accepted. The path coefficients (Beta values) for these significant relationships were weak. Brand image of the party leader (see Table 6) had a critical value of less than the 1.96 cut-off point, the hypothesis H_{3.1a}, was thus rejected. The result suggests that brand image of the political leader does not influence allegiance in SA.

Table 7: Multiple regression results of independent variables influencing fanaticism

Dependent variable: Fanaticism		Adjusted R ² = 0.143			Hypothesis number	Hypothesis
Independent	Beta	t-value	Sig. (p)			

Political brand trust	0.157	1.392	0.165	H _{1.1b}	Rejected
Political brand meaning	0.352	3.943	0.000*	H _{2.1b}	Accepted
Brand image of the party leader	0.058	0.438	0.661	H _{3.1b}	Rejected

* p<0.001

From Table 7, it is evident that about 14% of the variance in fanaticism can be explained by the variances in the independent variables. Evidence of statistically significant relationships was found (at p<0.001) among the independent variable (political brand meaning) and fanaticism (dependent variable). This is also evident from the t-values which exceed the critical value of 3.09 at p <0.001. Therefore, H_{2.1b} was accepted. The path coefficients (Beta values) for these significant relationships were weak. Based on these findings political brand meaning influences fanaticism in SA.

As can be seen in Table 7, political brand trust and brand image of the party leader had critical values of less than the 1.96 cut-off point. The hypotheses, H_{1.1b} and H_{3.1b}, were thus rejected. The results suggest that political brand trust and brand image of the political leader do not influence fanaticism in SA. Table 8 presents a summary of the multiple regression analysis results for the inter-relationship between allegiance and fanaticism.

Table 8: Summary of multiple regression analysis results for the inter-relationship between allegiance and fanaticism

Independent variables	Dependent variable	Beta	t-value	Sig. (p)	Hypothesis number	Hypothesis
Fanaticism	Allegiance	0.370	7.207	0.000*	H _{4.1}	Accepted
Allegiance	Fanaticism	0.678	7.207	0.000*	H _{4.2}	Accepted

* p<0.001

As is evident in Table 8, the multiple regression analysis revealed a total of two statistically significant relationships. Evidence of a statistical relationship (p<0.001) was found between allegiance and fanaticism in SA and vice versa. This is also evident from the t-values which exceed the critical value of 3.09; therefore H_{4.1} and H_{4.2} are supported. Both presented an R² value of 0.162, which explains about 16% of the variance in both cases. Thus, allegiance and fanaticism should be seen as interlinked in gaining voters' loyalty in SA and not as two separate concepts. It should be noted that the strength of the Beta value for the influence of allegiance on fanaticism (0.678) is higher than the strength of the Beta value for the influence of fanaticism on allegiance (0.370). This indicates that allegiance influences fanaticism more than fanaticism influences allegiance in SA. Figure 2 presents a summary of the statistically significant results obtained from the multiple regression analysis.

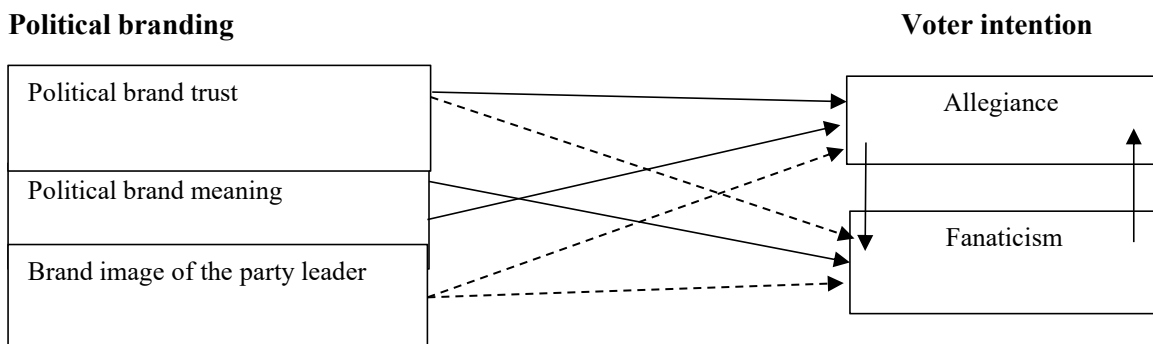


Figure 2: Summary of the statistically significant results

Of interest is that the construct political brand meaning influences both allegiance and fanaticism (Figure 2). Political brand meaning is thus very important in obtaining voters' loyalty in SA. Political

brand trust only influences allegiance in SA. What is significant to note, is that the variable brand image of the party leader does not influence either allegiance nor fanaticism in SA. These results indicate that in SA, the brand of the leader of the political party does not influence voters' loyalty. Therefore, one can assume that in SA, voters' loyalty is centred around political brand meaning and to some extent political brand trust and not the brand image of the political leader. This is in contradiction to studies carried out in the United States of America by Anderson (2013), where brand image of the political leader had an overwhelming influence on voters' intention regarding political parties.

5. Conclusion and managerial implications

The aim of the research was to determine the variables of political branding that influence voter intention in South Africa. By applying the concept of consumer branding to political branding the objectives of the study were to identify from literature the variables that shape political branding and empirically investigate the identified variables that influence voting intention. After conducting an EFA on the five variables identified by Banerjee and Chaudhri (2016:560), namely campaign effectiveness, image of its leaders, tenure effect, meaning and trust attached to the party, three variables were deemed relevant for the further investigation in the current study. These variables include the image of the party leaders, political brand meaning and political brand trust.

When considering political brand trust, voters expect the party that they vote for to listen to them and focus on present and future interests of the voters. The high level of agreement with these two items confirms the findings of Ahmed *et al.* (2011:131) that trust plays a significant role in creating long-term relationships with voters. In developing marketing strategies, attention should thus be placed on focus group discussion with potential voters to understand and acknowledge the needs and expectations of the voters, taking into consideration both present and future interests. In planning electoral campaigns, time should thus be allocated to interact with voters to gain a better understanding of their situation. This interaction could be in the form of roadshows to specific areas interacting informally with potential voters, or a planned listening campaign in community centres.

Communication with voters was also highlighted in the testing of perceptions with regard to brand meaning where the highest mean score for an individual item was for the item "The party has a clear manifesto" (M=4.17). The results of the study indicated that political brand meaning influences both allegiance and fanaticism. The latter is aligned with Phipps *et al.* (2010:499) who state that brand meaning is significant because most voters never have the opportunity to personally meet any politicians, and therefore cannot form their opinion directly and unfiltered. As the political party brand meaning is formed in voters' minds and is an important factor in voter preference (Banerjee & Chaudhuri 2016: 564), political parties need to be aware of the publicity that they receive on different media platforms and intentionally communicate and create awareness of their brand, slogan and manifesto. Allocating resources to continuously monitor social media platforms will assist parties to be proactive in identifying where interventions are needed and where attention should be focused on specific communication strategies. Furthermore, to be more visible and relatable, political parties should be actively involved in community projects and strategically select initiatives that the communities associate with.

The highest individual mean score for the independent variables is attributed to the factor relating to the brand image of the party leader (M=4.30), with the individual item "Acts with integrity" attracting the highest individual mean score (M=4.68). Despite the high mean score, the multiple regression analysis indicated that the brand image of the party leader does not influence either allegiance nor fanaticism in SA. This might explain the Jacob Zuma presidency that can only be described as controversial as he was accused of allegations of bribes from arms deals, corruption, racketeering, fraud and money laundering. Despite the above, the political party still won the elections during the time that he was the leader of the political party (Ferreira & Perks, 2016:268).

It is evident that political branding has an increasingly emerging role in the literature and that scholars apply consumer branding principles to candidates and parties, thereby acknowledging the

multifaceted nature of branding, and specifically the value of political branding (Milewicz & Milewicz, 2014: 244; Needham & Speed, 2015:1). The researchers thus agree with Ahmed *et al.* (2011:131) that the political parties in SA will have to plan their political campaigns in a more responsive, accountable and professional manner.

Although it must be noted that this research forms part of a bigger project, it is acknowledged that a bigger sample size could have led to the results being more generalisable. Based on the increasing changes in the number of political parties and the political climate in SA post COVID-19, a longitudinal study is needed to determine if the results of the study are due to perceptions formed in the run-up to the upcoming 2024 elections, or whether the results reflect typical voter perceptions of the influence of political branding on their voter choice.

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Digital Transformation Models: A Systematic Literature Review and a Conceptual Model

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Keywords

digitalisation; digital transformation models; leadership; technology; strategy; organisational culture; fourth industrial revolution; systematic review

Abstract

Enterprises have embraced digital change to protect current margins, attract new clients and grow the business while staying relevant in their sectors. Although digital transformation can boost service and develop cost-effective products, challenges such as poor implementation, weak infrastructure, a lack of digital expertise, culture, and resistance to change persist. The main objectives of this article were (1) to identify and conduct a systematic literature review on current and prior digital transformation models with critical dimensions and (2) to develop a conceptual digital transformation model. A systematic literature review methodology was followed. Twenty-three publications analysing the digital transformation models were found after searching major academic databases (EBSCOhost, Science Direct, ProQuest SciTech, AISEL, and Google Scholar) covering a broad range of fields. The authors found that the most adopted dimensions were technology, strategy, data/insight, products/services, and processes. Technology was referenced by seventeen models (74%), strategy and data/insight by eleven models (48%), and products/services by nine models (39%). In comparison, the process was referenced by eight (35%) of the twenty-three digital transformation models evaluated. More than 60% of the models were designed and tested in the United States of America (USA), Europe, and Asia. Only three of the twenty-three models were researched in South Africa, representing 13% of the total sample, while researchers in Morocco created one model, amounting to 4% of the total sample. The study provides researchers and practitioners with a clear picture of various digital transformation dimensions and enables them to select dimensions suitable for their context.

1. Introduction

The fourth industrial revolution and accompanying digital transformation has progressed dramatically in recent years (Dikhanbayeva et al., 2020). Digital transformation is a considerably broader term that signifies customer-driven strategic business transformation requiring far-reaching and cross-cutting organisational change in addition to the implementation of digital technologies (Larsson & Teigland, 2020). In recent years, the concept of digital transformation (DT) has reached a solid and high position in the discussion of leading elements that influence the development and survival of

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contemporary organisations (Kotarba, 2018). Becoming a digitally mature organisation incorporates the entire organisation and touches people, processes and communications as well as hardware and software choices (Fletcher & Griffiths, 2020).

According to Sainger (2018), successful digital transformation depends on how leaders use digital technology for the growth of the organisation. Phillip (2021) mentions that in planned digital transformation, leaders maintain a highly positive and enthusiastic attitude as this type of transformation is almost always initiated from top management. Klein (2020) expresses that the most distinguished leadership characteristic in the era of digital transformation, which is an extensive process that challenges companies today, is to be an innovative visionary. Kane et al. (2018) emphasise that digitally maturing organisations have organisational cultures that share common features. Hartl and Hess (2017) further indicate that an organisational culture should be flexible in order to support digital transformation. Hanelt et al. (2021) assert that digital transformation has consequences for organisations, from the way they engage with external stakeholders, to their internal processes, down to each individual product.

Kotarba (2018) stresses that the effects of digital transformation on an organisation's business model can be either voluntary, where the organisation actively shapes its future strategies through optimisations and investments, or reactive, where unforeseen and unpredicted changes have a negative impact on the business model and necessitate restructuring or emergency operations. Regrettably, many executives continue to struggle with designing and implementing digital ideologies because they are unfamiliar with the process, concepts, and setup (Bumann & Peter, 2020). Therefore, as is often the case, the intention becomes fixated on the technology piece, with little or no thought given to the mechanism of transformation, particularly of resources, the underlying process, and the mediating effect of pervasive organisational practices (Orji, 2019). Thus, digital transformation typically involves a thorough revision of the firm's operational and functional models (Correani et al., 2020).

1.1. Problem Statement

Butt (2020) contends that digital transformation initiatives fail for a variety of reasons, including a business attempting to do too much without a clear focus or goal, bringing new technologies without appraising their role within the business, compartmentalising digital initiatives from the rest of the business, or a large-scale digitalisation implementation without a realistic understanding of return on investment. Several impediments to digitisation exist around the world, including obsolete and complex legislative frameworks, deficiencies in digital infrastructure, and a scarcity of new skills (Accenture & World Economic Forum, 2019).

Another major reason why many businesses fail to thrive in digital transformation is a lack of clarity about their strategic direction and a failure to recognise that business models and strategies must provide value to customers (Udovita, 2020). Furthermore, most businesses that have started the digital transformation process fail due to passive organisational cultures that are resistant to change (Hartl & Hess, 2017). According to Zhang et al. (2019), developing the framework and evaluation tool is a prerequisite within the bigger context of digital transformation because it will represent a scan tool, tracking, and assessment method for digital transformation. Digital competency models, for most top managers, can function as the first step towards a more in-depth assessment of issues regarding a firm's digital transformation (Chanias & Hess, 2016). As a result, techniques to assist businesses in initiating and speeding up their digital transformation journey are required, and if businesses select an appropriate roadmap and oversee a process which includes not only technology but the entire organisation, the likelihood that the digitisation projects will fail, decreases (Gökşen & Gökşen, 2021).

According to Teichert (2019), there is evidence that many models are too broad to be implemented in any particular sector and, as a result, are not designed to provide specific guidelines. Acquiring the appropriate digital transformation model with the correct dimensions would help reduce the high failure rate of digital transformation initiatives. With this article the authors undertake a systematic

literature review of past digital transformation models with the ultimate objective of developing a conceptual digital transformation model with key dimensions.

1.2. Methodology

1.2.1 Search strategy

In this study the authors adopted three important generic steps in systematic review methodology: (1) a search strategy, (2) the selection of relevant studies using inclusion and exclusion criteria, and (3) an appropriate analysis of the studies selected. In the search, many combinations of phrases and key words were employed. The keywords ("digitalisation" or "digital transformation" or "digital transformation model" or "fourth industrial revolution" or "industry 4.0") were the search strings applied. The keywords, "digitalisation" and "digitisation"; "framework" and "model", were included in the search because they are regularly used interchangeably in the literature. The selection criteria were that the publication had to be pertinent to digital transformation and the research topics, in full text, published in English between 2015 and 2022, and the study must have originated from credible sources and publications. Unpublished papers, editorial studies, summary reports, master theses, and tutorials were excluded. Figure 1 illustrates a flow chart representing the article selection process.

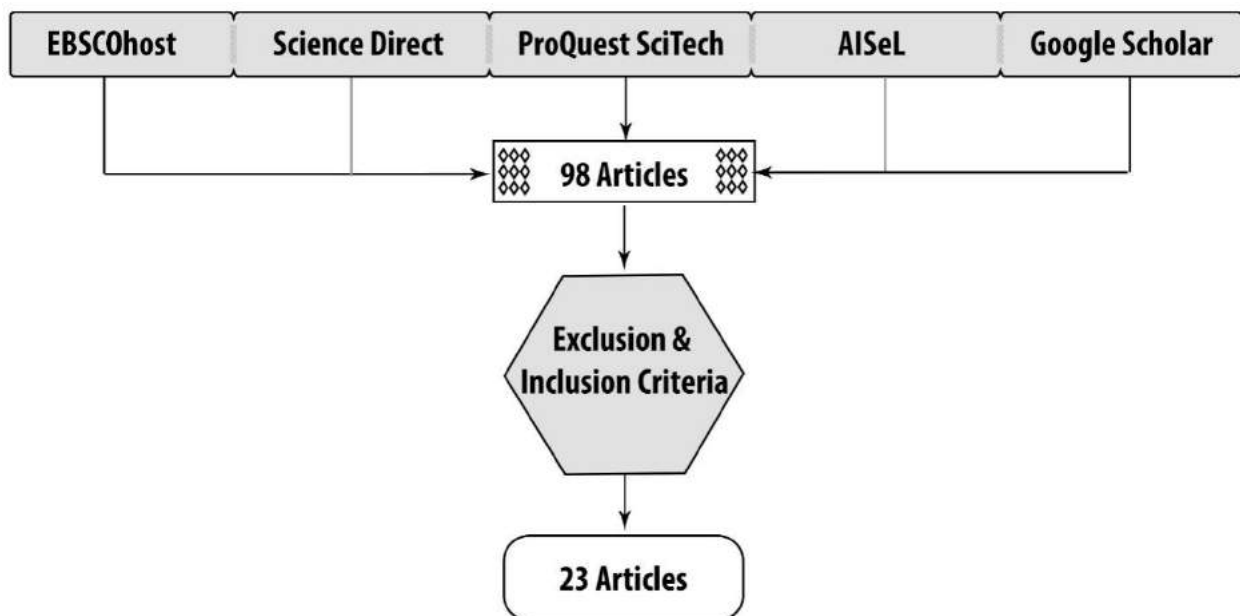


Figure 1: Search strategy flow chart

After having searched four major databases, EBSCOhost, Science Direct, ProQuest SciTech, and AISeL, a total of 86 articles were discovered. The authors used Google Scholar to broaden the scope of the search, yielding an additional 12 papers. The publications found through the keyword search were examined to determine whether they explored or theorised digitisation, digitalisation, digital transformation and the fourth industrial revolution. Because of the broad search strings, a large number of papers that did not satisfy these criteria were discarded. Papers of which the abstracts or summaries did not include the terms "digital transformation, digitalisation, digitisation" or "fourth industrial revolution", were excluded. In the end, only 23 articles fulfilled the requirements (cf. Table 1).

1.2.2 Data analysis

The articles were assessed based on (1) the study's location, (2) the frequency with which various digital transformation models adopted each dimension, (3) the synthesis of the main findings (i.e., change management dimension integrated into culture dimension, and the roadmap dimension as part of the strategy dimension rather than referenced independently), and (4) the conceptualisation of the digital transformation model with critical dimensions.

1.3. Research Objectives

The following research objectives were formulated for the study:

- To identify and analyse existing digital transformation models with key dimensions
- To develop a conceptual model for digital transformation

2. Literature Review

The following section begins with an overview of digitalisation, digital transformation, digital transformation models and a synopsis of the systematic literature review.

2.1 Digitalisation

Digitalisation, as defined by Hagberg et al. (2016), incorporates new technologies into ordinary living through the automation of something that can be digitised. According to Verina and Titko (2019), digitalisation uses digital technologies and information of which the increased connectivity ultimately results in new or altered activities. Sanchez (2017) asserts that digitisation is the transformation of established standards caused by digital transformation and supplementary inventions in the nation's economy. According to Gartner (2021), digitalisation would be the use of new technologies to modify a business strategy and generate new income and value; it is the procedure of making the transition to a digital phase. Parida et al. (2019) define digitalisation as the use of digital technologies to innovate a business model and to provide new revenue streams and value-producing opportunities in industrial ecosystems.

2.2 Digital transformation

According to Teichert (2019), digital transformation is a continuous process of adapting to a rapidly altering digital environment in order to satisfy the workers', partners', and digital clients' expectations. Parviainen et al. (2017) state that digital transformation is attributed to variations in methods of working, duties, and business offerings adopted by utilising digital technologies in a company or the organisation's operating environment. Vial (2019) contends that digital transformation is a means of improving an enterprise by causing major changes in its attributes through data, computing, information exchange, and interconnection technologies. Berghaus and Back (2016) define digital transformation as a transition forced by digital initiatives on several levels in the company that encompasses the use of new technologies to enhance internal practices and the examination of digital innovation, which has the potential to transform the business model.

Morakanyane et al. (2017) define digital transformation as an evolution method that involves digital skills and systems to enable the creation of value in business models, internal operations, and consumer experience. According to Hess et al. (2016), digital transformation (DT) is associated with the adjustments that digital technologies can yield in a company's business model, goods, methods, and organisational structure. Damle and Grover (2020) articulate that digital transformation is the acceptance of a substantial digital realm in order to meet the needs of stakeholders, staff members, and clients. Schuchmann and Seufert (2015) express that digital transformation is the reconfiguration of innovation and modern business models to more successfully serve digital consumers at every point of interaction in the experience value chain. Solis (2015) defines digital transformation as a reshaping of, or increased investment in future technologies, operating models, and processes to achieve a competitive edge in an ever-changing digital world.

2.3 Digital transformation models

Piccinini et al. (2015) argue that recent advancements in digitalisation are causing massive and unprecedented transformations in many aspects of our social and economic lives. Vial (2019) indicates that a digital transformation framework results in digital technologies playing a crucial part in the formation and reinforcement of disruptions occurring at societal and industry levels, and these disruptions elicit strategic responses from organisations. It outlines the fundamental difficulties that arise during a business transition and specifies how the new business model's efficacy, efficiency, and long-term viability are ensured (Mugge et al., 2020). The framework provides a tool to organise the reflection on digitally-driven business strategies in the perspective of building a company's digital transformation process (Zaoui & Souissi, 2021).

2.3.1 Digital maturity and digital transformation models

Although the terms "digital maturity framework" and "digital transformation model" are frequently used interchangeably, there is a distinction between the two constructs, which is discussed in the following section. According to Schumacher et al. (2016), maturity models are widely used as a tool to fully comprehend and measure the maturity of an organisation or a process relevant to a particular desired goal. Zhang et al. (2019) suggest that a maturity model specifies a collection of discrete, incremental levels or stages, describes the entity's advancement and includes specific, measurable measured objects, abilities, or multi-dimensional metrics. Unlike the maturity model, which focuses on a firm's digital maturity levels and steps, Ershova and Hohlov (2021) argue that the digital transformation model is critical to the successful implementation of a digitalisation development programme by establishing an integrated ecosystem of digital transition and control. A digital transformation framework is an outline that represents a strategy about how an organisation paves its way through a period of significant change because of the current evolving business transformation (Damle & Grover, 2020). In this study the authors focussed primarily on digital transformation models.

2.4 Systematic literature review

The purpose of a systematic literature review is to find all research on a specific topic; the techniques for performing systematic reviews have been created to reduce the risk of selecting and publishing data extraction bias in the review (Nightingale, 2009). Systematic reviews, which have their origins in medical science, differ from traditional narrative reviews in that they use a repeatable, scientific, and transparent process, or in other words, a detailed technology, to reduce bias through extensive literature searches of published and unpublished studies (Tranfield et al., 2003). A systematic literature review employs specific, detailed processes to locate, select, assess, and synthesise a set of research papers on a well-defined topic; as a result, systematic review findings are less susceptible to the biases of a single researcher than narrative review findings (Robson et al., 2007). In order to address the problem statement given above, the authors used a systematic literature review technique for this article. This research focuses on the systematic literature review of previous and existing digital transformation frameworks or models, followed by the development of a conceptual digital transformation model.

3. Results and Findings

As presented in Table 1, all the digital transformation models examined were developed between 2015 and 2021. Most digital transformation models were created in 2020, accounting for 43% (Articles 1, 2, 4, 5, 7, 11, 12, 13, 14 & 17) of the analysed models, while 13% (Articles 15, 16 & 18) were formulated in 2021. Approximately 17% (Articles 8, 21, 22 & 23) of the models were produced in 2018 and a further 17% (Articles 3, 6, 9 & 20) were designed in 2019. One model was created in 2015 (Article 10), while another was developed in 2017 (Article 19).

Table 1: Digital transformation models

Article Number	Year	Author/s	Title	Country/ Location
1	2020	Cennamo <i>et al.</i>	Digital transformation: An integrative framework	USA
2	2020	Van Tonder <i>et al.</i>	A framework for digital transformation and business model innovation	South Africa
3	2019	Orji	An integrated capability framework for digitization and business value generation	Switzerland
4	2020	Bhattacharya & Momaya	Actionable strategy framework for digital transformation in AECO industry	China, USA and India
5	2020	Indriasari <i>et al.</i>	Digital transformation framework:	Indonesia

			balancing four transformational dimensions	
6	2019	Vial	Digital transformation: an inductive framework	Canada
7	2020	Bumann & Peter	Digital Transformation Framework with Sub-Dimensions	Switzerland
8	2018	Pappas <i>et al.</i>	The digital transformation and sustainability (DTS) model	Norway and Greece
9	2019	Accenture and World Economic Forum	The Accenture and World Economic Forum (WEF) value-at-stake framework	South Africa, UK, Denmark, Switzerland and India
10	2015	Prem	The Digitization business model framework	Austria
11	2020	Accenture	Accenture Digital Transformation Framework	Europe, USA and Asia
12	2020	PWC	PWC digital transformation framework	USA, Europe and Asia
13	2020	Cognizant	Cognizant Digital Enterprise Model: A comprehensive perspective on the digital agenda	USA, Europe and Asia
14	2020	Modiba	Digital Transformation Framework for South African Financial Services Providers	South Africa
15	2021	Tungpantong <i>et al.</i>	Conceptual Framework of Factors for Information Systems Success to Digital Transformation in Higher Education Institutions	Thailand
16	2021	Zaoui & Souissi	A Framework for A Strategic Digital Transformation	Morocco
17	2020	Papavasiliou <i>et al.</i>	A System of Systems Management Framework for Digital Transformation in eGovernment	Australia
18	2021	Thamjaroenporn & Achalakul	Big Data Analytics Framework for Digital Government	Thailand
19	2017	KPMG	KPMG Digital Transformation Framework	USA, Europe and Asia
20	2019	Deloitte	Deloitte Digital Transformation Framework	USA, Europe and Asia
21	2018	Mckinsey	McKinsey Digital Transformation Framework	USA, Europe and Asia
22	2018	Gartner	Gartner digital transformation Model	USA, Europe and Asia
23	2018	CapGemini	CapGemini and MIT Digital Transformation frameworks	USA, Europe and Asia

Source: Authors

3.1 Sample

From the sample of 23 studies, over 60% of the models were developed and tested in the USA, Europe, and Asia, demonstrating Western and Asian dominance in the field of digitalisation (Articles 1, 4, 5, 7, 8, 9, 11, 12, 13, 17, 19, 20, 21, 22 & 23). Only three of the twenty-three models were studied in South Africa (Articles 2, 9 & 14), accounting for 13% of the models studied. Moroccan researchers developed only one model representing 4% of the models analysed.

3.2 Dimensions of digital transformation

Twenty-three digital transformation models (Table 1: Digital transformation models) comprising twenty-two digital transformation dimensions (Table 2: Digital transformation dimensions) were identified and analysed. Table 2 presents an analysis of all twenty-two dimensions, from the most extensively adopted to the least widely used.

3.2.1 Technology

Predictably, more digital transformation models (seventeen of the twenty-three) adopted the technology dimension (Articles 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22 & 23) accounting for 73% of the total models analysed. The accelerated advancement of digital technology has altered personal lives, workplaces, and societies, while digital technology has changed the shape of businesses (Article 5). Research has revealed (prior results on IT-enabled transformation) that technology is only one piece of the complicated jigsaw puzzle that must be addressed for firms to stay competitive in a digital age (Article 6). Therefore, establishing a data-driven culture across firms, investing in relevant technology, nurturing technical knowledge and skills, and building an institutional learning climate are essential components of achieving value (Article 8).

3.2.2 Strategy

Strategy was used by eleven of the twenty-three digital transformation models examined (Articles 2, 4, 6, 7, 12, 15, 16, 19, 20, 21 & 22). Although differing views exist regarding the formulation of strategy, it was clear from the literature that there is a need to develop a sophisticated digital strategy for successful digital transformation (Article 7). As a result, corporate leaders must develop a bolder strategy and culture that foster employee creativity and encourage them to experiment with new technologies across their business models (Article 2).

3.2.3 Data/Insight

Similar to the strategy dimension above, the data/insight dimension was embraced by eleven digital transformation models, representing almost half of the models studied (Articles 1, 8, 9, 11, 13, 15, 16, 18, 21, 22 & 23). Big data and business analytics ecosystems have the ability to drive digital transformation while also transforming concepts and methods in data systems, leadership, technologies, and invention (Article 8). Therefore, data and data analytics that drive the creation of digital solutions are just as crucial as the digital solutions themselves (Article 18).

3.2.4 Products and services

Nine of the twenty-three digital transformation models analysed used the products/services dimension (Articles 2, 7, 10, 13, 15, 16, 17, 18 & 23). A common effect of digital components is increased personalisation and individualisation of products and services, with offerings often given in brief periods of time and on the fly (Article 10). For example, a cloud infrastructure service could be executed by either constructing a physical data centre that meets the above availability and security standards, or by licensing a public cloud and subletting infrastructure and services to subordinate entities (Article 18).

3.2.5 Process

Approximately 35% of the twenty-three digital transformation models evaluated adopted the process dimension (Articles 3, 8, 13, 15, 16, 19, 20 & 21). Creating a digital business is based on the digitalisation of core and business processes, as well as the creation of new digital products and services (Article 16). Operations, such as automating and standardising processes, must be digitalised to produce a great client experience through digitised products and services (Article 2).

3.2.6 People

Seven different digital transformation models (Articles 7, 8, 15, 18, 19, 20 & 23) adopted the people dimension, representing only 30% of the models studied. People at the forefront of digital change must collaborate closely with recruitment teams in order to find the suitable type of digital talent (Article 20). Moreover, big data and business analytics knowledge can be used to target people with specific information in order to affect perceptions, opinions, or conduct over time (Article 7).

Table 2: Digital transformation dimensions

Digital transformation dimensions	Article number																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Strategy		x		x		x	x					x			x	x			x	x	x	x	
Technology					x	x	x	x	x	x	x			x	x	x	x	x	x	x	x	x	x
People							x	x							x			x	x	x			x
Processes			x					x					x		x				x	x	x		
Customers		x					x				x		x										
Products & services		x					x			x			x		x	x	x	x					x
Leadership						x								x	x	x						x	
Culture			x	x										x			x						
Roadmap												x				x							
Data/Insight	x							x	x		x		x		x	x		x			x	x	x
R&D											x												
Governance																x		x					
Platforms	x										x												x
Ecosystem	x							x			x		x										
Investment/ Finance					x				x		x	x				x			x				
Collaboration										x			x										x
Agility & scalability				x								x	x										
Organisational structure					x	x	x									x							
Digital channels													x			x							
Resources	x	x																					
Innovation										x						x	x	x				x	x
Change management												x											

Source: Authors

3.2.7 Finance/Investment

Six of the twenty-three models used finance/investment as a dimension (Articles 5, 9, 11, 12, 16 & 19) accounting for 26% of the total models analysed. Firms are facing a high risk of losing their investments and missing crucial possibilities for growth and competition, thus many must begin to implement digital transformation in order to stay competitive (Article 5). Therefore, both government and corporate partners must set aside finances and investment for digital tools, technologies, and skills development (Article 9).

3.2.8 Innovation

Similar to the investment dimension, only six different digital transformation models adopted an innovation dimension (Articles 10, 15, 16, 17, 21 & 23). Digital systems and applicable digital systems are a new paradigm for economic and technological innovation that promotes collaboration, information sharing, and the creation of open and flexible technologies (Article 17). Hence, the innovation dimension includes innovation in technology design, technology processes and ICT Management (Article 16).

3.2.9 Leadership

What appeared to be out of the ordinary was that only five of the twenty-three digital transformation models (Articles 6, 14, 15, 16 & 22) adopted the leadership dimension, accounting for only 21% of the total models evaluated. Studies on digital transformation emphasise the importance of altering organisational leadership structure as a crucial enabler of new business models and that digital transformation requires firms to designate chief digital officers (CDOs) to assist them in their transformation (Article 6). Digital transformation is about change – nothing will ever transform if the company's leadership does not ensure that members agree to the transformation journey (Article 14).

3.2.10 Organisational culture

It is particularly concerning that the culture dimension was only mentioned in four of the twenty-three models (Articles 3, 4, 14 & 17). This represents only 17% of the total number of digital transformation models investigated. Digital transformation failures are primarily caused by business factors such as inadequate planning and delivery, corporate culture, and an inability to capitalise on IT's potential. Therefore, companies that prioritise organisational culture are projected to be five times more effective in digital transformation than those that do not (Article 4).

3.2.11 Customer

The customer dimension was cited in four of the twenty-three models representing only 17% of the total models evaluated (Articles 2, 7, 11 & 13). Identifying and comprehending the needs of the twenty-first-century consumer will necessitate shifts in consumer service delivery, which will result in enhanced client satisfaction and a positive customer experience via digital platforms (Article 2). Furthermore, one of the action fields that provides a vital framework for firms to succeed in digital transitions, is customer centricity (Article 7).

3.2.12 Organisational structure

Similar to the culture dimension above, organisational structure was only used in four of the twenty-three digital transformation models, accounting for 17% of the models studied (Articles 5, 6, 7 & 16). Adjustments to an organisation's structure and culture, in the context of digital transformation, lead to people taking on duties that were previously not included in their roles (Article 6). Accordingly, implementing a distributed or hybrid organisational structure during digital transformation can help Agile and DevOps teams achieve a competitive edge (Article 5).

3.2.13 Ecosystem

The ecosystem dimension was only referenced in four (Article 1, 8, 11 & 13) of the twenty-three models, representing only 17% of the total number of digital transformation models analysed. Digital transformation has spawned new methods of arranging enterprises' value chains and linkages between companies, progressively occurring, not in seclusion, but rather in so-called digital ecosystems and digital markets (Article 1). Therefore, none of the stakeholders in the ecosystems of the twenty-first

century can operate in exclusion; instead, they must cooperate closely to foster learning and innovation while advancing their interrelationships, giving rise to new technological solutions and businesses, and adding value (Article 8).

3.2.14 Other dimensions

Dimensions 14 to 22 were used by less than a quarter of the total models reviewed and are analysed jointly. Only three different digital transformation models adopted the following dimensions: platform (Articles 1, 11 & 23), agility and scalability (Articles 4, 12 & 13), and collaboration (Articles 10, 13 & 16). The roadmap (Articles 12 & 16), governance (Articles 16 & 18), digital channels (Articles 13 & 16), and resources (Articles 2 & 3) dimensions were used by two digital transformation models. The research and development (Article 11) and change management (Article 12) dimensions were each referenced by only one model.

3.3 Discussion

3.3.1 Discussion pertaining to objective 1

The first objective was to identify and analyse existing digital transformation models with key dimensions. Twenty-three digital transformation models comprising twenty-two dimensions were identified and analysed. All of the digital transformation models analysed were created between 2015 and 2021, according to the 23 publications obtained. The majority of the models were developed in 2020, accounting for 43% of the total, while 13% were developed in 2021. Approximately 17% of the models were created in 2018 while another 17% were produced in 2019. Over 60% of the models found were developed and tested in the USA, Europe, and Asia, proving Western and Asian dominance in the digitalisation sector. South Africa only produced three of the twenty-three models, showing a void in the country's digital transformation model design. It also shows that South Africa is still in the early stages of digital transformation.

From the analysis, twenty-two dimensions were found as listed (cf. Table 2). The top ten dimensions that were adopted most frequently were technology, strategy, people, data/insight, processes, products and services, investment/finance, leadership, organisational culture, and innovation. According to the analysis, some dimensions employed different semantics interchangeably. The client dimension, for example, is interchangeable with the customer dimension, while the employee dimension is interchangeable with the dimension of persons in the workplace. Platforms, data, and digital channels, on the other hand, are not classified as sub-dimensions of technology but rather as distinct dimensions that are not part of the technology dimension. Similarly, the roadmap dimension was employed independently of the strategy dimension rather than as its subdimension.

3.3.2 Discussion pertaining to objective 2

The second objective was to develop a conceptual digital transformation model. It was evident from the analysis of the twenty-two digital transformation dimensions that technology, strategy, data/insight, products and services, and processes were the most popular dimensions (cf. Tables 1 and 2). Technology was referenced by 17 models (74%), strategy by 11 models (48%), data/insight also by 11 models (48%), products/services by nine (39%) and process by eight (35%) of the twenty-three digital transformation models evaluated.

Given how researchers emphasise the importance of this dimension in facilitating digital transformation, it was unusual to observe that only 21% of the models studied used the leadership dimension. Even though organisational culture was mentioned in only 17% of the total number of digital transformation models studied, many researchers have pointed to culture as one of the primary factors in the failure of digital transformation, as digital transformation, like any radical transition, presupposes a shift in people's mindsets and new ways of doing things. Similarly, it was surprising that the governance dimension was only adopted by two models (Articles 16 & 18). Failure to adequately manage changes is a different issue for corporate transformation, whether digitally driven or not, because the conversion of vision into action is aided by a solid governance structure (Article 3).

Rather than applying several digital transformation dimensions individually or independently, as observed in the analysis, the authors merged some of them into single dimensions. For instance, change management was combined with the culture dimension. Furthermore, the authors found that four digital transformation models used platforms (Articles 1, 11 & 23) and digital channels (Articles 13 & 16) independently when they could have been combined in the technology dimension. Similarly, two models embraced the roadmap dimension (Articles 12 & 16). A roadmap could be incorporated into the strategy dimension, as developing a strategy without an implementation plan or roadmap is equivalent to having no strategy, since most digital transformation projects fail at the execution level. By merging the above dimensions, a vital dimension that could favourably influence the digital transformation path could be formulated.

It is important to stress that the following dimensions for the conceptual digital transformation model were selected based on their effectiveness and positive impact on the successful implementation of digital transformation as determined through the literature review, and not only selected based on their popularity or how broadly they have been applied before. Figure 2 and 3 represents the conceptual digital transformation model along with ten essential dimensions developed by the authors. The dimensions are strategy, leadership, culture, data/insight, innovation, customer, people, process, technology and governance.

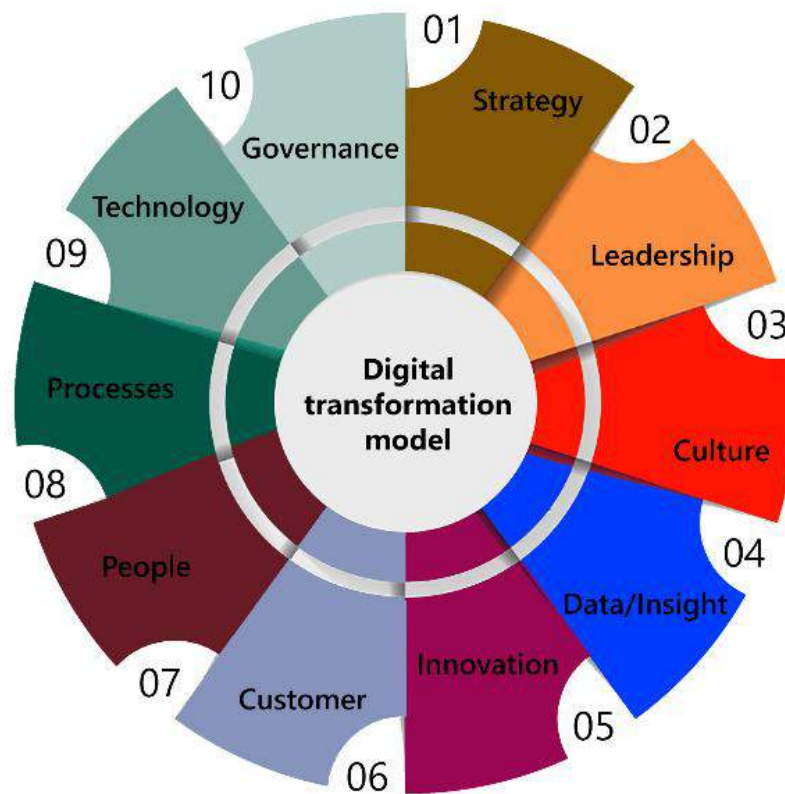


Figure 2: Conceptual digital transformation model
Source: Authors

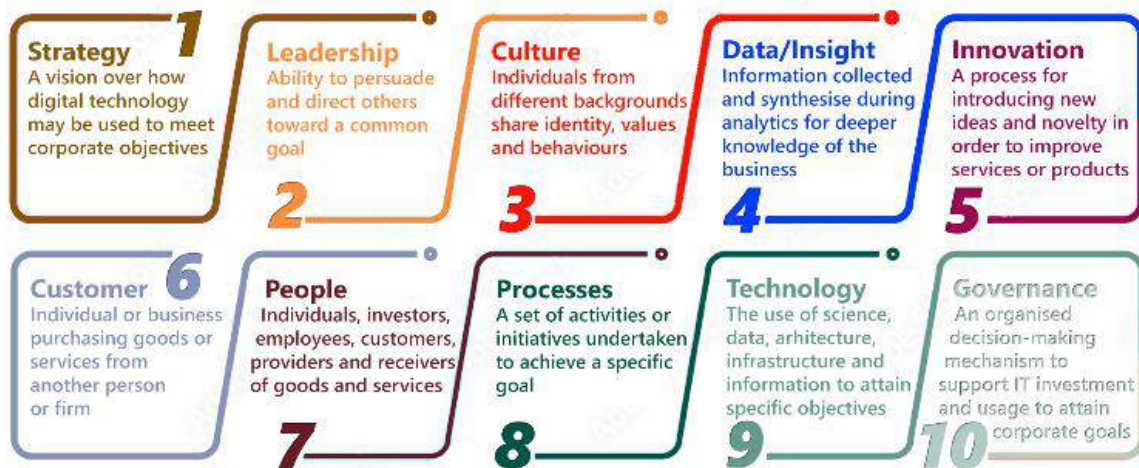


Figure 3: Description of the digital transformation model
 Source: Authors

4. Conclusion and Managerial Implication

The development of digital transformation models has been left to consulting firms for far too long. Consulting firms' primary goal is to maximise profit margins like any profit-generating firm. These models are generic and, most of them adopt a Western perspective (cf. Table1). Researchers are being urged to create digital transformation models with dimensions specific to the industries and countries where they will be used, taking into account the unique challenges that different countries and sectors face, such as poor infrastructure, digital illiteracy, the digital divide, culture, and leadership, including political and digital leadership, among others.

Furthermore, the literature review revealed that, for various reasons, digital transformation projects have a higher failure rate, particularly at the execution level, hence the dimensions chosen should focus on making practical implementation easier. Moreover, most of these models are focused on technology – 73% of the models examined applied technology (cf. Table1).

From the literature review it is clear that digital transformation entails more than just purchasing cutting-edge technology; it also entails a company-wide transformation that includes a review of operations, business models, and culture. Underdeveloped countries' common challenges, such as weak infrastructure, digital illiteracy, the digital divide, culture, and poor leadership, persist. These challenges are cited among the critical reasons for unsuccessful digital transformation journeys and need to be addressed before companies embark on digital transformation programmes.

5. Limitations and Future research

This research has some limitations. Firstly, although the authors used five major databases, EBSCOhost, Science Direct, ProQuest SciTech, AISEL, and Google Scholar, it is unclear whether the results would have been different if other databases had been explored. Secondly, it is unknown whether the dimensions chosen for this study would have differed if IT practitioners such as chief information officers, chief digital officers, and other IT professionals had been interviewed. Future research should develop digital transformation models that are not general but are tailored to unique challenges faced by specific countries and sectors. Since research reveals that digital transformation initiatives fail at the execution level, such models and their dimensions must pay particular attention to execution plans and make the implementation of digital projects more pragmatic.

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Exploring the Information and Communication Technology Readiness Factors That Affect The Promotion of Local Economic Development Activities in Mandeni Local Municipality of Kwazulu-Natal

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Keywords

ICT readiness; local economic development; local government.

Abstract

The study is predicated on the notion that the increased availability of information and communication technology (ICT) holds an increased potential to place municipalities at a higher level where they are mainly to promote their local economic development activities. However, this has not been the case in Mandeni Local Municipality in KwaZulu-Natal. The study's main aim is to investigate factors that prevent the ICT readiness of the Mandeni Local Municipality to promote local economic development. A qualitative methodology predicated on the phenomenological approach was chosen for this study to gather information from participants with regards to the perceived challenges. The study adopted selected a sample of eight senior managers of the municipality. An interview guide was used for data collection. Thematic data analysis was conducted where emerging themes were identified. The study revealed that non-alignment of relevant legislative frameworks with the municipality's integrated development plan (IDP) was one factor undermining developmental efforts in this municipality. A business reengineering and change management is needed as well as the awareness workshops to the larger community for their role and participation on LED issues.

1. Introduction

The contemporary world is constantly changing and evolving to become a global village through technology. The survival of organizations will, in the near future, be mainly dependent on these technologies. At countries' level, the ability to sustain economies supporting citizens is largely dependent on technology. To have a sustained impact on citizens, resources focusing on technology readiness should be directed to local spheres of government. Local government's primary goal is to promote local economic development. With the available resources, municipalities must put the right strategy to grow the local economies facilitated by technology. Investment on ICT will ensure a bottom-up approach to sustainability as indeed "Do we live an information society? Does it matter?" (Zadeh, 2013:362).

While most regions are joining the information society, it is disturbing that the digital divide is growing between urban and rural communities. Other continents have become superpowers due to their technological advancement and progressive mindset relating to information communication technology. Developed countries are often associated with an information society. In order to evolve to an information society level, three stages are critical. Firstly, the readiness of ICT serves to measure the level of infrastructure and its overall accessibility. Secondly is the use of ICT supported by the skills availability. Third is the ICT impact towards sustainable development (ITU Report, 2016:3). ICT Development Index (IDI) includes 11 indicators used to measure the information society in 167 countries. Within the scoring range of 0 to 10, the average for all countries was, for the first time in 2015, 5.03 Chad was the lowest at 1.17, and the Republic of Korea heads the chart at 8.92. This chart,

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in essence, highlights the disparity between developed and developing countries; developed countries have amongst the highest scores. However, what keeps such developed countries scoring high is the early adoption of new technologies that are trending, which includes improved capabilities and quality of networks and devices, particularly on bandwidth and speed of connectivity, the use of smartphones and tablets, social media services, cloud computing, big data analysis, the Internet of Things (IoT) and machine-to-machine (M2M) communications.

The motivating factors to the study are the benefits that can be enjoyed should the municipality be ready with ICT. The main benefit is the alignment of policy development to ensure community participation in the affairs of local economic development (Chummun, 2012). There will be greater influence to redirect resources towards the programs that improves livelihood. Better skilled municipal workers on ICT are better prepared and ready to facilitate the promotion of LED. Councilors as the key stakeholder will perform better oversight. Municipalities in the country will have a benchmark on ICT readiness. The study will make a unique contribution in this discipline by changing the mind set of everybody involved that municipalities are drivers of development beyond services delivery imperatives.

The benefit from the study will also immensely accrue to adjacent municipalities since they are undergoing similar challenges facing Mandeni Local Municipality in terms of ICT readiness. Other spheres of government and departments will also benefit from the study by getting tips on how to improve the monitoring of programs and projects on E-government.

2. Problem Investigated

It is well known that Information Society plays a big level of impact on economic development (Kumar, K., 2020:103). This level is the highlight of the Local Economic Development (LED) as it is known today (Laszlo, 2007:10). To stimulate growth in the economy government spending is necessary. However, the spending must support sustainable development. In spending, governments have certain priorities. One such priority is basic service delivery (Chummun & Ojah, 2016). Three spheres of government were established to support transformation in serving the interest of citizens in South Africa. Local government as one of those spheres is at the cold face of service delivery. Local government is faced with a dilemma at this stage in prioritizing spending. Should they spend on basic service delivery or to spend on sustainable development projects? These projects are associated with the third wave of economic development (e.g., public-private partnerships, technology transfers, infrastructure development, and education) (Hanley and Douglass, 2014:220). The developed countries used these strategies to emerge from eminent poverty that is currently engulfing developing and third world countries many of which are in Africa.

The Mandeni municipality is surrounded by a perceived fairly established ICT infrastructure. This threatens the governance of the municipality. If ICT is ready and is the key enabler to economic development, why then the benefits of the municipality's LED are the benefits of the municipality's LED not being realized? This may demonstrate unwillingness by the municipality to tap into the ICT infrastructure available for use to address the community issues or otherwise a possible lack of capacity. This may also be linked to the credibility of the ICT readiness.

Municipalities are expected to have an alignment of their IDPs, the National development plan, and the Provincial Growth and Development Strategy. This alignment should have the ability to support the local economies rather than a top-down approach implementation.

3. Research Objectives

The primary objective of this research is to investigate the factors that affect the ICT readiness to promote LED in Mandeni.

The major research questions are:

- (i) What are the ICT readiness factors that affect Mandeni municipality to promote local economic development?

- (ii) What legislation and policy frameworks at a municipal level are applicable to ICT readiness and LED?
- (iii) Are the resources optimally used to promote LED in Mandeni municipality?
- (iv) What recommendations are being proposed?

Having gone through the importance of the study and its impact on the municipalities, it is equally important to have context of the ICT readiness and LED. The next section will deal with the literature review on the topic.

4. Literature Review

4.1 ICT Readiness

Increasing levels of ICT readiness being achieved are being praised since they are regarded as the critical success factor in achieving the digital economy, hence promoting LED. ICT readiness is characterized by the factors that include ICT infrastructure, hardware, software and human resource (Chanyagorn & Kungwannarongkun, 2011:99). As observed by Chanyagorn et al. (2011), there are assessment tools to measure the success of ICT readiness. E-health is the success story in government in the recent past to implement ICT (Gholamhosseini & Ayatollahi, 2017:32).

In the municipal environment, the community plays a big role. Therefore, Gichoya (2005:182) proposes factors further include financial resources, attitudes, collaboration and strategy (legislation and policies). Tools such as mobile phone is at the center of community mobilization, therefore promotion of LED (Nhamo, Chapungu. and Nyika, 2021:39)

The focus of the study is to investigate the ICT readiness factors that affect the promotion of LED in Mandeni area.

The extent of success or failure of ICT interventions to support development depends on how managers conceptualize ICT readiness and development (Sean & Harindranath, 2007:15). The ICT Readiness framework was used to guide understanding in this study.

This study adopted the proven framework that was developed by Sean et al. (2007) which identify three different conceptualization of ICT readiness that includes, namely 1) the use of ICT, 2) how ICT is viewed, and 3) the impact ICT has to development. The theoretical framework was used as depicted Figure 1. Figure 1 shows the LED's dependency on the municipality's ICT readiness. In turn, the ICT readiness is greatly affected firstly by the ability to align the municipal processes with the legislation applicable to municipalities (Nhamo, Chapungu. and Nyika, 2021:39). The ICT charter should lead the way in spelling out clearly how the ICT environment must be treated. This includes the form and nature of participation of the communities. Clear roles and responsibilities must be detailed to ensure an oversight role and monitoring of ICT functions.

Secondly, the ICT readiness is affected by nature and the kind of resources available to the municipality. Network infrastructure at the municipality's disposal includes access to broadband and internet connectivity, pervasive ICT gadgets, ability to use and ownership of mobile phones. Funding of ICT units adequately goes a long way to support ICT programs.

Thirdly, is the component that makes all this gel. The human resource that is given the task of implementing ICT successfully is crucial. The skills must be available to those employees entrusted with the task. The communities must be encouraged to participate in ICT programs of the municipality by engaging in awareness campaigns (Kumar, K., 2020:103). At the center of this factor is the attitude of managers that must ensure the achievement of the municipal vision. Collaboration among key stakeholders is the key to consolidating resources.

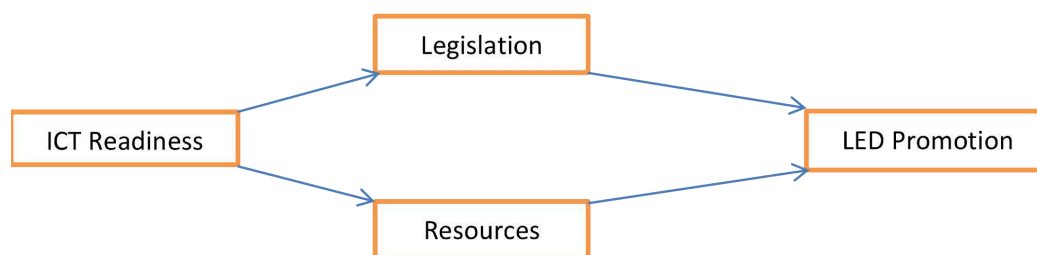


Figure 1: Theoretical Framework Diagram
Source: Compiled by the authors

4.2 ICT for Development

For a complete picture, there is a need to link the role of ICT to the development needs of the nation or province or local government. There is a general understanding that the ICT will bring about economic development. Therefore, developing countries could leapfrog stages of development and become advanced information societies (Bornman, 2012:278). When discussing ICT, information is conceptualized in economic terms (Madikiza & Bomman, 2007:12). This means that it is a commodity by which the market can determine its price. Clearly, the highest bidder can influence the economy as well as its social behaviour. If ICT is meant for development, the state must intervene to regulate the market. Development is not only about economic growth, but it is also concerned with the standard of living. However, there is a pessimistic view supported by Van Dyk (1999) that ICT can lead to unemployment and increase the gap between the poor and the rich (Bornman, 2012:279).

The growing expectation that ICT will assist African countries to come out of poverty is faced with many challenges (Soriano, 2007:15). Over time, this has created an impression that there is no evidence that ICT has got a positive correlation with economic development as suggested by Ngwenyama et al. (2006). Jaffer, Ngámbe & Czerniewicz (2007) continue to mention the challenges facing Africa. On top of the list of challenges is the investment on infrastructure for ICT. This investment is competing with many other socio-economic investments. A word of caution from Ngwenyama et al. (2006) is that it is unwise to disaggregate education and health infrastructure issues from ICT infrastructure development issues. The other challenge is the acceptance of colonial developmentalism. Developmental funded projects to Africa sometimes come pre-packaged with assumptions and solutions, leaving no space for local knowledge and expertise.

Mobile phones are the widest used tools where hopes for development are pinned especially in developing countries. In Sub Saharan Africa, 60% of the population have mobile phone coverage (Jenny, Aker & Mbiti, 2010: 208). This mode is frustrated by the lack of infrastructure and the cost involved. It is estimated that in Africa only 14.1 % of the continent's world population has got access to internet as at 2006 (Internet World Statistics, 2006). There are great opportunities in Sub-Saharan Africa for the ICT sector to prosper in the form of industrialisation of ICT, growth of business process off shoring sector, leveraging open-source software adoption, and encouraging Foreign Direct Investment (FDI) - (ICT Competitiveness in Africa).

All these good stories of ICT for development (ICT4D) in Africa are under scrutiny from its critics. Heeks (2010: 626), has posed a fundamental question that seeks to evaluate these contributions. Does ICT contribute to development? He contends that the developing countries spend so much on ICT gadgets especially mobile phones at the expense of important needs such as education and food. Much of this expenditure will find its way back to developed countries where these multinational companies are owned. Heeks (2006), using the research by Donner and Escobar (2010:64) noted that there is a shortage of research on the implications of mobile phones beyond the increase of their use. Little research is found on the functionalities of mobile phones and their translation into economic impact. However, Heeks (2010) gave guidance to managers of ICT4D that they must attend to designs

aligned to local realities; that the governance structure draws on the strength of multiple actors, and that sustainability is in terms of economic and socio-political perspective.

For the ICT readiness to look appealing for development, it must be judged against the following benefits of efficiency, effectiveness and growth as depicted in Figure 3 below.

Efficiency	
Time	Accelerating business processes and activities
Distance	Reducing geographical and distance inhibitors/barriers
Creativity	Enhancing existing business processes and activities
Effectiveness	
Time	Improving the flow of information and business intelligence throughout the supply and the value chain components
Distance	Enabling integrated control of the supply and the value chain processes
Creativity	Enabling new (and/or modified) processes
Growth	
Time	Obtaining early market entry/presence
Distance	Introducing new products to new markets
Creativity	Developing new products and services

Figure 2: The strategic value of e-Technologies (Adapted from Chanyagorn & Kungwannarongkun, 2011)

In the context of local economic development, the efficiency and effectiveness in ICT tools is the turn-around time at which customers receive goods and services. The key is streamlining activities by reengineering business processes to support that goal. The current processes are not necessarily thrown out of the window but become the building block to maintain the character of local processes. If time factor is favourably achieved, it means distance is shortened. With ICT, geographic locations are eliminated as a barrier to development. Globalization comes handy to this process.

Often comes as a concern that most African countries supply raw materials to be exported without any beneficiation in the value chain. Along the value chain in the intellectual property the local must benefit through the ownership and control of the tool used in ICT. Industrialisation as a proposal will facilitate the process in the context of South Africa for job creation.

Growth in the economy is not only income that is considered to support development. Standard of living is a measure if the development is sustainability. Identifying blue oceans and innovation on existing markets is critical for the economic growth. ICT should facilitate this to leapfrog developing countries to sustainable development. The ICT tools being donated to developing countries must ensure the skilling of local people for employability.

4.3 Research Methodology

The primary aim of this research is to investigate factors that affect the ICT readiness to promote LED in Mandeni. The question is whether the municipality is ready to deliver LED as expected using ICT. The research paradigm is an interpretivist paradigm. This paradigm is informed by the assumption that human beings construct meanings as they engage with the world they are interpreting (Crotty, 1998; Creswell, 2014). The use of open questions ended allows the participants to share their views and experiences. The qualitative method was chosen using the phenomenological study as participants are expected to give qualitative information on the perceived challenges and their impact on ICT readiness for LED in Mandeni. An in-depth interview is chosen for this study. This research technique involves managing intensive one-on-one interviews with a small number of participants to explore their perceptions on a particular idea (Struwig & Stead, 2004:12). It offered a more complete picture of what was happening in the field of study.

The researchers used structured interview questions to draw data. The structured interview method is chosen since it does not require interviewing skills and it is easy to analyze.

The population consisted of managers in the municipality. There are 20 managers that qualified for the study. The total population was targeted and invited to partake in the study. Eight managers agreed and were interviewed. Although only eight of the twenty managers partook in the study, rich data was collected, and partial saturation was achieved.

The added value of the interview is that one draws knowledge from known interviewees at a good response rate. A thematic analysis technique was adopted to analyze data collected. Various themes that came up in interviews, were analyzed. The answers identified patterns and organized into logical categories from the text. Content analysis is convenient for all research approaches that use written data (Cooper & Schindler, 2011:295). The process followed was to collect answers from a question for understanding and decide on responses should they come up over and over again. Themes are then formulated from repetitive responses, which were then grouped into one of the themes. The interviews were recorded.

The topic requires that the challenges facing the municipality's ICT be explored and their impact on LED be understood. Therefore, this requires focus on senior managers in the municipality and key stakeholders in the business community that are strategic partners of the municipality. Interviews are conducted guided by the interview questions prepared for all sample size of eight people. Since the topic requires a deep theoretical background, the skills and knowledge these attributes could be found when specific sample biased to these attributes is selected. According to (Visagie, 2008, p. 58), in judgmental sampling the researcher is concerned with analysis only on determined types of subjects and this sample is chosen based on expert judgement.

5. Results and Findings

Four central themes were identified from the interviews.

5.1 Theme 1: Challenges and limitations in legislation

Based on the findings MFMA section 83 is the basis of departure for the ICT office to function optimally for LED. The level of efficiency observed and praise from ICT manager acknowledging the knowledge acquired shows the effectiveness of the unit standards on minimum competency levels. Exposure to financial aspects of the municipal budget interpretation makes everyone appreciate the ability of the municipality to serve the community aspirations (Caba, Pedro, and López, 2008: 379). The shortcomings of none-involvement of ICT staff at management committee meetings are glaring. The IDP as the main driver for development in Mandeni has an inherent risk of not being customised around ICT methodologies in solving some of the challenges of the community (Khan, Ludlow, Loibl, and Soomro, 2014: 205). Lack of accountability in management reflects the need to improve awareness by drilling section 83 of MFMA (Sibanda, 2017:313).

5.2 Theme 2: The skill shortage amongst ICT staff in relation to understanding LED

In this finding, one identifies reciprocal lack of skills between the ICT office staff and the strategic management level. The ICT office staff is blaming top management's ignorance of not involving them on decision making platforms. It is management that sees no value on ICT. Things can happen without ICT (Hendriks,2013: 1). The lack of skills on the side of management sees ICT as threat to their environment.

On the other side ICT office is accused of being ignorant on IDP issues. This ignorance is detrimental to the objectives of economic development at local level through IDP. ICT staff must involve themselves on IDP matters. Their focus is mainly internal operational projects. The municipality must take upon itself to create space for further development of ICT skills within the workplace (Kolding, Sundblad, Alexa, Stone, Aravopoulou, and Evans, 2018).

5.3 Theme 3: The resource shortage

The finding highlights three major observations hindering ICT development (Awuor, Rabah, and Maake, 2013: 252). The question of access to the internet, exclusion and the vastness of the area dominate. Internet access involves internal infrastructure readiness. The Mandeni Municipality comes

from the era where the internet was outsourced. Being hosted outside the municipal premises, it is still a challenge to quickly implement ICT projects. New technologies need to be funded in partnership with National or provincial initiatives. Low-cost or subsidized broadband need to be explored. (Mawela, Ochara, and Twinomurinzi, 2017).

5.4 Theme 4: Council Oversight role and awareness of ICT and LED

The consensus from the finding is that councilors do not pay much attention to ICT matters (Memeti, and Kreci, 2016: 2). This is due to lack of ICT skills. The finding is pointing the deficiency in the ICT legal framework. ICT charter does not give priority to LED objectives in the IDP. Anything below the standard of IDP to councilors is worthless. Hence no focus is given. The key performance indicators must be bold as driver of achieving vision that ICT should lead to development (Dauber, and Bendrat, 2014: 1017). Training and awareness to councilors is something that needs to be prioritized. The tone of reports sent to Council is not helping the engagements to take place and constructive decisions.

5.5 Theme 5: Support from management and other structures

All responses from interviewees points to one direction. The municipality lacks synergy due to shortcomings inherent with management. The management must give support to the council through proper engagement of municipality's business. The delivery that is expected is first recommended by management. The problem is structural. The way the council's committees are structured, give problem to management. Management has to fix this (Prager, 2010: 711). The fact that ICT has its stand-alone committee gives a perception that this is a different business process that must be dealt with in isolation.

It is noticeable that all findings are in concurrence with the research question. Should these become recommendations? This is the function of the next chapter. Most of these observations are within the control of the Mandeni Municipality. Leadership must prevail.

6. Managerial Implications

The implications of this research findings are strong. The Mandeni Municipality might need to transform to adapt to new practices. The managerial mindset has got to change. This will change the attitude of governance structures of the institution when reviewing the policies to drive for better service delivery. The legal framework will have to be reviewed, especially the Municipality's internal policy that only addresses ICT operations. The document has to be strategic. It must lay a foundation for LED to flourish by aligning to the IDP. Every business process of the municipality must be driven by ICT. Reprioritization aligned to LED must be the basis for budget. Collaboration with other stakeholders has to be the business of the day. Reengineering of business processes must take place. This study might influence the industry since some policies are generic causing the inherent risk to other municipalities. The study will add in the existing body of knowledge in that the area of the municipality will receive the focused study that can be replicated to other municipalities of equivalent size and environment.

The recommendations then are:

- (i) To focus on the Integration of ICT as a mainstream function of the municipality. This will mean the elevation of ICT Manager as part of the top management structure of the municipality.
- (ii) To set clear objectives for the role of ICT in the IDP of the municipality. This will mean the review of all policies and business processes are based on ICT being the vehicle to deliver on IDP deliverables.
- (iii) To strategic collaboration with stakeholders who have resources to fund infrastructure and explore Private Public Partnership mechanism on ICT projects.
- (iv) To initiate focused training for councilors on ICT solutions and implementation of policies supporting LED.
- (v) To focus on organizational reengineering and change the management focused to Mandeni management team towards ICT's role as a primary system driver.
- (vi) To facilitate workshops and initiate an awareness to the larger community to be provided on the involvement of the municipality and facilities to engage LED.

7. Conclusion

The study showed that the Mandeni municipality is faced with many challenges that undermine its ICT readiness to promote local economic development that affect the lives of communities it serves. The chapter also presented specific recommendations based on findings. The findings are clear. Firstly, the municipality is not capitalizing on the legislation that is present currently to align the organizational structure to ICT function. This goes a long way to ICT readiness. ICT charter does not reflect ICT function as an integral part of the strategic management in the municipality. Secondly, there is no constant skilling of personnel and the exposure of management to ICT issues in order to break the barrier of silo mentality. Thirdly, resources are not prioritized in the municipal's budget, as ICT is identified as a strategic tool. Due to limited resources, strategic partners must be identified to assist. This may include municipal bankers, state organs and collaboration with private partners. Fourthly, those given powers to do monitoring and oversight are not capacitated to perform those duties. This include extending the ICT services to communities to ensure participation on economic development issues. These findings if are addressed, will ensure municipal ICT readiness.

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Investigating the use of the Advancing Management Information System In Deposit Money Banks In Southwest Nigeria

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Keywords

Decision making; deposit money banks; management information system; policy making

Abstract

Information management and application for banking operations and organisational success remain a major factor to sustain and retain potential customers. The study appraised the utilisation of Management Information System (MIS) in decision making and policy making processes in the management of deposit money banks in southwest, Nigeria. Correlational research design was adopted using stratified random sampling technique, deposit money banks were first stratified into public, private and foreign banks, and then staffs were stratified to executive and non-executive staff with 300 participants that took part in the study. Data were collected using self-developed questionnaire and analysed with Pearson Product Moment Correlation (PPMC) and One-Way Analysis of Variance (ANOVA) statistics. The results revealed that there is a significant relationship between MIS and decision making and policy making, respectively. It also shows a significant difference between public, private and foreign banks in the utilization of MIS in their mode of operations. The study concluded that MIS forms the central operations unit of commercial banks as there is the need for coordination within and between sections and departments in the banks. It was recommended that effort must be intensified to advance information for effective and efficient management of the commercial banks in the southwestern states of Nigeria.

1. Introduction

In recent times, technology has transformed the role of information in the deposit money banks as it has become the lifeblood of an organisation (Kolhe, M. S. 2020). Information is described as a powerful tool in the present global village (Isah, 2014). The consensus in the study of information is that it forms the central operations unit of any organization including deposit money banks (Kolhe, M. S. 2020). In Nigeria, information resources and information management are part of the major issues and indices in the management of deposit money banks. These include recording, storage, retrieval, and use of data meaningfully to plan and make decisions and operating policy of deposit money banks (Ighofovwe, 2015). Therefore, information is central to the management of deposit money banks, hence the more complex a deposit money bank administration structure is, the greater the need for coordination within and between sections and departments. In line with this position, the Central Bank of Nigeria (CBN, 2018) supported the initiative of introducing the computerized Management Information System (MIS) for the deposit money banks in all six geo-political zones in Nigeria. According to Anh, P., Huy, D. T. N., & Phuc, D. M. (2021), in this modern era of digital technology, MIS play a very crucial role in today's banking sector. Van Thuy, N. (2022) posits that the role of MIS has become valuable in the banking sector. Al-Faihani, M., & Al-Alawi, A. I. (2020) also stated that due to the advancement of digital technology, organisations need to fully embrace MIS in order to survive and combat various forms of threats.

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1.1 Problem Statement

Poor management of information system leads to inadequate planning and inappropriate decision making which alters and aggravate defective programming or scheduling of actions, this could be as a result of dearth of information and data to complete actions. Furthermore, MIS was conceptualised as a process of collecting, processing, storing and transmitting relevant information to support management functions of planning, directing, decision making and policy making (Sha, 2013). It is a system which comprises the user, the information, and the enabling environment; thus, it is an integral part of management process within the commercial banks. The discrepancy between information and proper management of deposit money banks is really a matter of concern in the banking sector in Nigeria, hence this study. Therefore, MIS enhances managerial functioning which is identified as important system because of its content, form and timing of data presentation. However, it is noted that administrative actions can be effective if the MIS strategy is adequately supported by an organised information system expert. The foregoing on MIS imply that techniques, processes and structures concerned with systemic and accurate data collection, storage, and for retrieval when needed are more essential. In the context of this study, MIS is used to refer to the process of accessing and utilizing processed information to support deposit money bank management in policy and decision making. This logic forms the basis of this study, which examines the relationship between MIS and deposit money banks management. In the light of the foregoing, the following objectives were formulated to:

1.2 Methodology

1.2.1 Research Design

The study adopted a quantitative research design to examine the objectives on the management staff of the deposit money banks to extract operational information. This design is considered apt for this study as it seeks to elicit information from executive and management (non-executive) staff in the deposit money banks to establish the relationship between MIS and the bank management. There was no conscious manipulations of the variables since the interaction among them have been completed.

1.2.2 Participants

The population comprised of both executive and management staff in 10 deposit money banks located in all six states of the Nigeria federation that make up the southwestern Nigeria. The banks were stratified into public, private and foreign money deposit banks. Two each of the public, private and foreign deposit money banks were randomly selected for the study. A purposive sample of 50 management staff were selected from each of the public, private and foreign deposit money banks to make a total sample size of 300 participants based on Taro's model. The management staff comprised both executive and non-executive staff at the managerial level that have the responsibility of being the heads of department, team, unit, branch, or directorate in the bank. The purposive sampling technique was used because of their peculiar roles as decision makers.

1.2.3 Research Instrument

The instrument used for the study was a self-developed questionnaire titled "Management Information System Utilisation Questionnaire (MISUQ)" and it is structured on a 4-point Likert scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). The instrument consisted of 20 items based on the variables under investigation as contained in null hypotheses. Ten items were raised for the variable use of MIS, while 5 items relate to the variable each of the decision making and policy making respectively.

The instrument (MISUQ) was validated by experts in the field of Management Information System (MIS), Information Communication Technology (ICT), and Measurement Specialists. Reliability and internal consistency of the instrument were established using test-retest reliability method. This involves the double administration of the instrument on 20 bank staff with an interval of two-week difference. Pearson product moment correlation co-efficient (PPMC) formula was used for data analysis and reliability co-efficient of $r = 0.827$ was obtained. Consequently, the instrument was confirmed as being stable and consistent over time.

1.2.4 Procedure for Data Collection

The researchers made use of two trained research assistants in administering copies of the questionnaire to participants in the selected six deposit money banks in the southwest, Nigeria. Two hundred and eighty copies of the questionnaire were retrieved out of 300 administered, representing a 93% retrieval rate. Each positive item on the MISUQ was scored in descending order from 4 to 1, while the reverse order was used for the negative items.

1.2.5 Procedure for Data Analysis

The data collected for this study to test the hypotheses were analysed with the use of Pearson product moment correlation and One-Way Analysis of Variance (ANOVA) statistical techniques. All hypotheses formulated were tested at 0.05 level of significance.

1.2.6 Hypotheses

Specifically, the following null hypotheses are formulated and tested at 0.05 level of significance, namely:

1. There is no significant relationship between the use of MIS and decision-making process in the deposit money banks.
2. There is no significant relationship between the use of MIS and policy making process in the deposit money banks
3. There is no significant difference between public, private and foreign commercial banks in their utilization of MIS in their mode of operations.

2 Literature Review

According to Emetarom (2011), deposit money banks are expanding, and the problems of planning, administration and control are also on the increase. They are confronted with decision making constraints posted by lack of appropriate and organized information. Consequently, the need for increased information management capacity becomes imperative. Johnson (2017) found that Management Information System (MIS) has helped to facilitate decision making for effective administration in deposit money banks in Nigeria.

The design and development of MIS have been covered in different perspectives leading to various definitions which sometimes depend on authors' prejudices. MIS is an organized method of providing management with necessary information needed for decision in a form that aids understating and stimulates actions (Bello, 2018). Baskerville and Myers (2012) defined MIS as "the development, use and application of information system by individuals, organizations and society".

Adebayo (2017), states that the essential role of MIS is to transform data into meaningful information that can be used in administrative planning, operational management and decision-making process. This will put employees on their toes especially on the issues affecting human and material resources development and allocations. This points to the fact that MIS can be used at various levels of management, from the top to the middle and even by the operational staff, as a support for decision making that aims to meet strategic goals and objectives of the deposit money banks.

In line with the foregoing, the aim of MIS is to develop a viable system to maximize the effective application of modern data approach to management practices and to produce timely and accurate information, not only to decide present and future operations, but also to pinpoint potential issues that need to be resolved in the management of deposit money banks in addition to enhancing policy making (Ajayi & Omirin, 2017).

Furthermore, Obi (2013) posits that information is the foundation in planning, policy making, implementation, evaluation and decision making. Obi (2013) further argued that this is a major problem in deposit money banks as information are not provided as at when needed, and when they are provided, it's either inaccurate or poorly scheduled, which without accurate and up-to-date information cannot produce effective decision. Gathering information is the first step in making

rational decisions that will improve the worth of the deposit money banks. This view supports Adesina (2018) who pointed out that the quality and quantity of information available for decision making affects the effectiveness of the group. To this end, decision should be based solely on appropriate, accurate and timely information provided by MIS; this is consistent with Emetarom (2011) that the utilization of computerized MIS in banks improves their services.

In addition, MIS is required for need assessment, logistics and planning, resources allocation and utilization, operations control, management and evaluation of information. Thus, where the MIS (manual or computerized) is weak, poor, and slow, the decision-making capacity at all levels will be ineffective. Hagg, Cummings, and McCubbrey (2012) affirm that for information to be useful in decision making, it must be relevant, accurate and timely, MIS does not necessarily imply improved decision making since the accuracy of MIS is not absolute. The quality of information depends on the analysis, system maintenance, and cost effectiveness.

Though, there have been positive contributions of MIS to management of deposit money banks, there are still bottleneck in its design and utilization. Nwanko (2015) noted that the existing MIS have had little success in providing deposit money banks' management with information that they need. This is a result of lack of management involvement in the design of MIS, inadequate technological skills, undue concentration on low level data processing, inadequate knowledge, and management of computer operations. Furthermore, there is poor planning and management in the banks as a result of non-availability of reliable, timely, and up-to-date information, which is attributed to the traditional method of collecting, storing, and retrieving data. MIS is usually affected negatively because of poor coding, encoding and coordination between technical and end users' inability to favourably connect to the functional areas in the deposit money banks. For example, in many banks today, individual and group businesses do not have their accounts assembled, compiled and published via MIS. Ajayi and Omirin (2017) revealed that MIS was not adequately used in making decisions in deposit money banks. In addition, they found that adequate use of MIS is not affected by proprietorship of banks (public, private and foreign).

Poor management of information system leads to inadequate planning and inappropriate decision making which alters and aggravate defective programming or scheduling of actions, this could be as a result of dearth of information and data to complete actions. The discrepancy between information and proper management of deposit money banks is really a matter of concern in the banking sector in Nigeria, hence this study. Therefore, MIS enhances managerial functioning which is identified as important system because of its content, form and timing of data presentation. However, it is noted that administrative actions can be effective if the MIS strategy is adequately supported by an organised information system expert. This logic forms the basis of this study, which examines the relationship between MIS and deposit money banks management. In the light of the foregoing, the following objectives were formulated to:

1. Examine the relationship between the dissemination of information and decision-making process in the deposit money banks.
2. Determine the relationship between the use of MIS and policy making process in the deposit money banks.
3. Investigate whether difference exists between public, private and foreign banks utilization of MIS in their mode of operations.

3 Results and Finding

3.1 Descriptive Analysis

Age

The age distributions of participants are presented in Table 1 below. Table 1 shows that at age, a preponderant majority (49.7%) of the participants were between 31-40 years age bracket, followed by 36.2% of the participants whose ages ranged between 21-30 years. Further, 9.6% and 4.5% of the participants were between the ages 41-50 and 51-60-years age brackets respectively.

Table 1: Percent Distribution of Respondents by Age

Current Age	Frequency	Percent
21 – 30	120	36.2
31 – 40	165	49.7
41 – 50	32	9.6
51 – 60	15	4.5
Total	332	100

For clarity, the percentage distributions of respondents based on their ages indicated in Table 1 are presented in Figure 1 below:

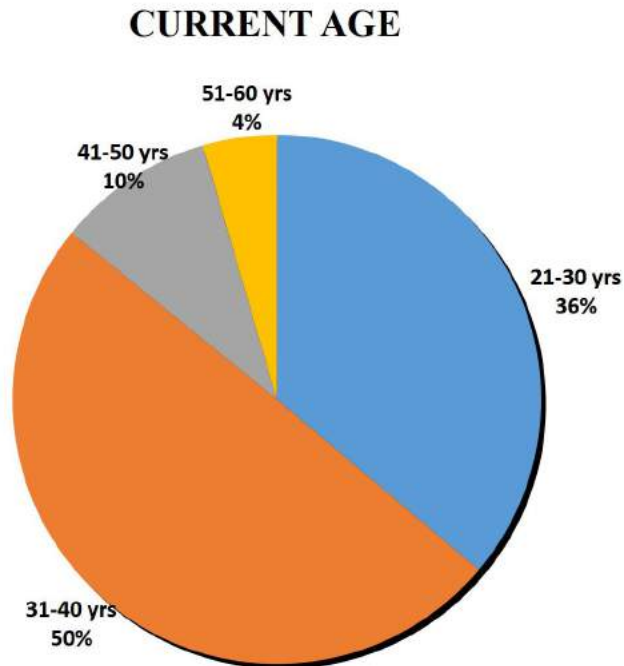


Figure 1: Age of respondents

Figure 1 presents the age distribution of respondents in the study. It shows that a preponderant majority (49.7%) of the participants were between 31-40 years age bracket that participated in the study while approximately 9.6% and 4.5% of the participants were between the ages 41-50 and 51-60-years age brackets respectively. Therefore, most of the respondents that participated in this study were between 31-40 years age bracket. This could also mean that this category of middle-aged respondents were more easily accessible to the researcher.

Gender

The gender distributions of participants are presented in Table 2. Table 2 indicates that at gender, a vast majority (51.8%) of the participants are women, as against 48.2% of the participants who were men. This shows that more women participated in the study than men without gender bias in the study.

Table 2: Percent Distribution of Respondents by Gender

Gender	Frequency	Percent
Male	160	48.2
Female	172	51.8
Total	332	100

For clarity, the percentage distributions of respondents based on their gender indicated in Table 2 are presented in Figure 2 below:

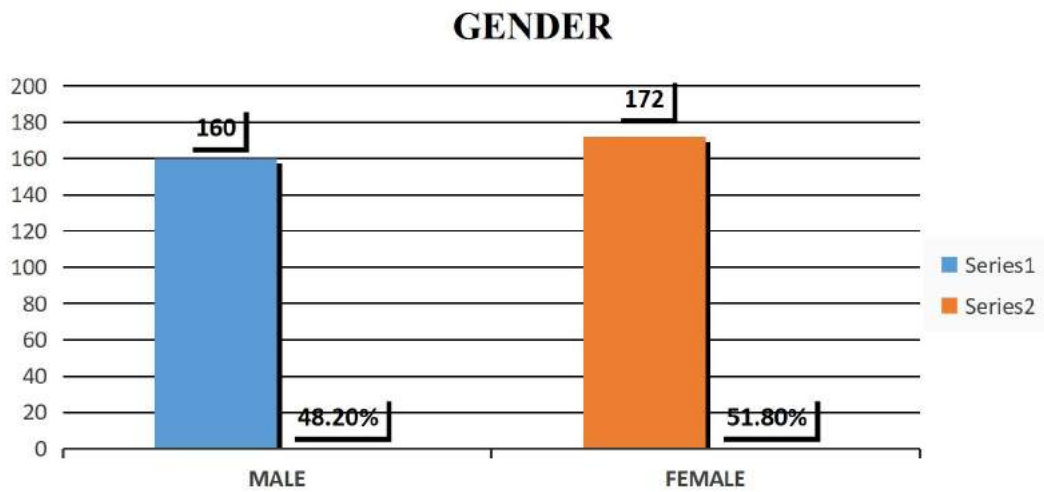


Figure 2: Gender of respondents

Figure 2 shows the gender distribution of respondents in the study. It shows that a vast majority (51.8%) of the participants are women, as against 48.2% of the participants who were men. Therefore, this implies that more women participated in the study than men without gender bias in the study. It also means that the researcher has more access to women than men in the study.

Educational Qualification

The educational qualification distributions of participants are presented in Table 3. Table 3 reveals that at level of education, the majority (50.6%) of the participants are first degree (Bachelor) holders, followed by 21.7% with Higher National Diploma (HND) as well as 18.7% with master’s degrees. Also, 8.7% and 0.3% of the participants are National Diploma (HND) and doctorate holders respectively.

Table 3: Percent Distribution of Respondents by Educational Qualification

Educational Qualification	Frequency	Percentage
ND	29	8.7
HND	72	21.7
Bachelor’s Degree	168	50.6
Master’s Degree	62	18.7
Doctorate (Ph.D.)	1	0.3
Total	332	100

For clarity, the percentage distributions of respondents based on their educational qualifications indicated in Table 8 are presented in Figure 3 below:

EDUCATIONAL QUALIFICATION

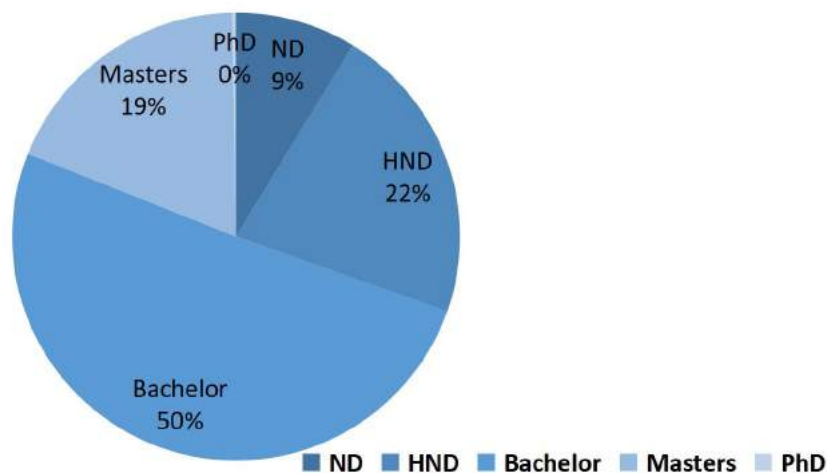


Figure 3: Educational qualification of respondents

Figure 3 reveals educational qualification distribution of respondents in the study. It shows that at level of education, the majority (50.6%) of the participants are first degree (Bachelor) holders, while a handful of the participants were doctorate holders. Therefore, this implies that more participants with their first degrees participated in the study than participants with higher degrees. It also means that the researcher has more access to participants with first degree certificates than participants with higher degrees in the study.

Work Experience

The working experience distributions of participants are presented in Table 4. Table 4 reveals that at working experience, a vast majority (58.4%) of the participants have spent between 5-10 years on the job; 37.1% participants claimed to have spent between 11-16 years on the job, as against 4.5% participants who claimed to have spent 16 years and above on the job in the bank.

Table 4: Percent Distribution of Respondents by Working Experience

Working Experience	Frequency	Percentage
5-10 years	194	58.4
11-16 years	123	37.1
17 years & above	15	4.5
Total	332	100

For clarity, the percentage distributions of respondents based on their working experience indicated in Table 9 are presented in Figure 4 below:

WORKING EXPERIENCE

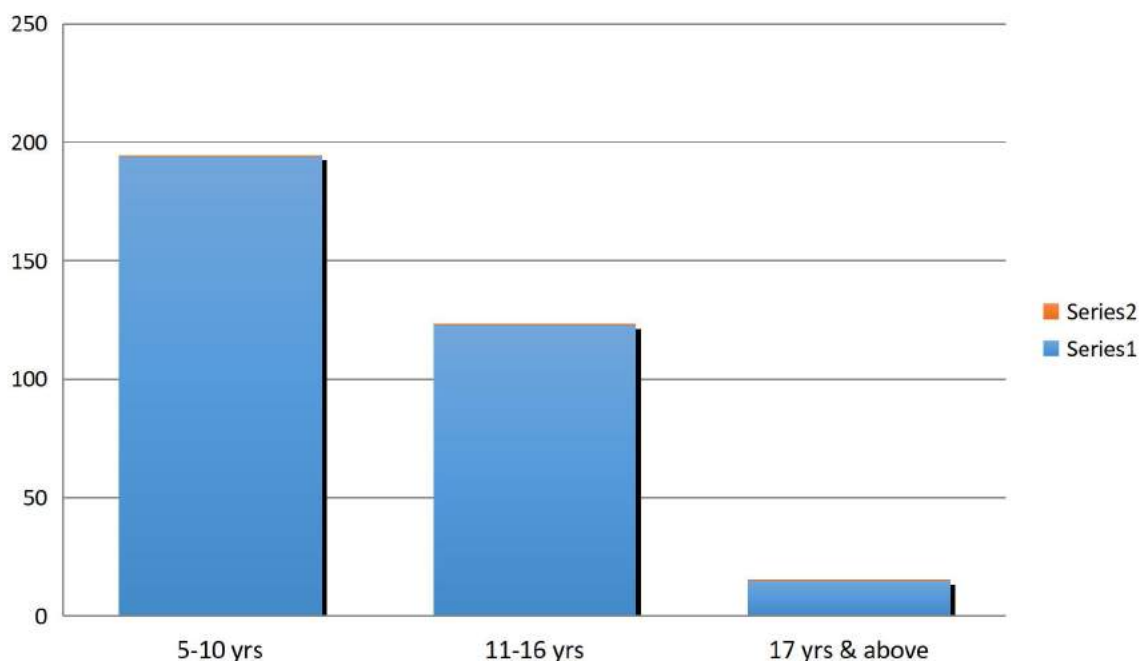


Figure 4: Working experience of respondents

Figure 4 reveals working experience distribution of respondents in the study. It shows that at working experience, a vast majority (58.4%) of the participants have spent between 5-10 years on the job; while a handful of participants (4.5%) have spent 16 years and above on the job in the bank. Therefore, this implies that more participants who have had 5-10 years working experience participated in the study than participants who have spent 16 years and above on the job in the bank. It also means that the researcher has more access to participants who have had 5-10 years working experience than participants who have spent 16 years and above on the job in the study.

Bank Department

The working at the department distributions of participants are presented in Table 5. Table 5 reveals that at work department, a vast majority (39.2%) of the participants were working at the marketing department, 25.3% were at operations department as against 8.4% and 8.1% participants who were either at fund transfer department or human resources department respectively.

Table 5: Percent Distribution of Respondents by Bank Department

Department	Frequency	Percentage
Marketing	130	39.2
Operations	84	25.3
Corporate Service	40	12.1
Fund Transfer	28	8.4
Human Resources	27	8.1
Recovery	23	6.9
Total	332	100

For clarity, the percentage distributions of respondents based on their working at departments indicated in Table 10 are presented in Figure 8 below:

WORK DEPARTMENT

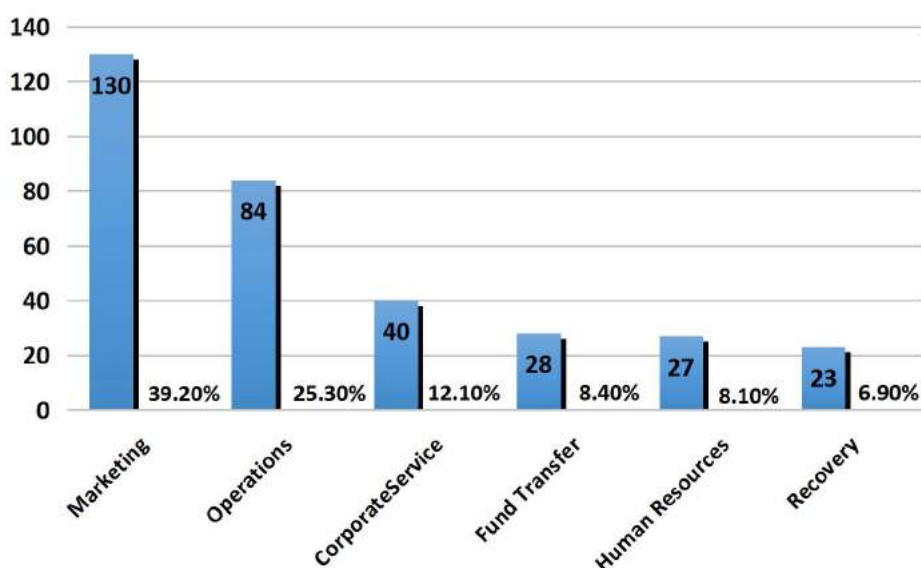


Figure 5: Work department of respondents

Figure 5 shows work at department distribution of respondents in the study. It shows that at work department, a vast majority (39.2%) of the participants were working at the marketing department, while a handful of participants (8.1%) were at the human resources department. Therefore, this implies that more participants with experience working at marketing department participated in the study than participants with experience working at human resources department in the bank. It also means that the researcher has more access to participants in the marketing department in the banks than participants in other departments of the bank in the study.

Number of Employees

The number of employees' distributions of participants is presented in Table 6. Table 6 shows that at the approximate number of employees in the bank, the most (89.8%) of the participants indicate that their bank have more than 300 employees in its branches, followed by 4.2% participants who have held the believe that their bank have between 100-149 workers in its employment, and 3.6% participants who have claimed that there were between 200-249 workers in their bank's employment. Also, a handful (2.4%) of the participants claimed that their bank has less than 100 employees in its employment.

Table 6: Percent Distribution of Respondents by Number of Employees

Number of Employees	Frequency	Percentage
Less than 100	8	2.4
100 -149	14	4.2
200 - 249	12	3.6
Over 300	298	89.8
Total	332	100

For clarity, the percentage distributions of respondents based on number of employees indicated in Table 6 are presented in Figure 6 below:

NUMBER OF EMPLOYEES

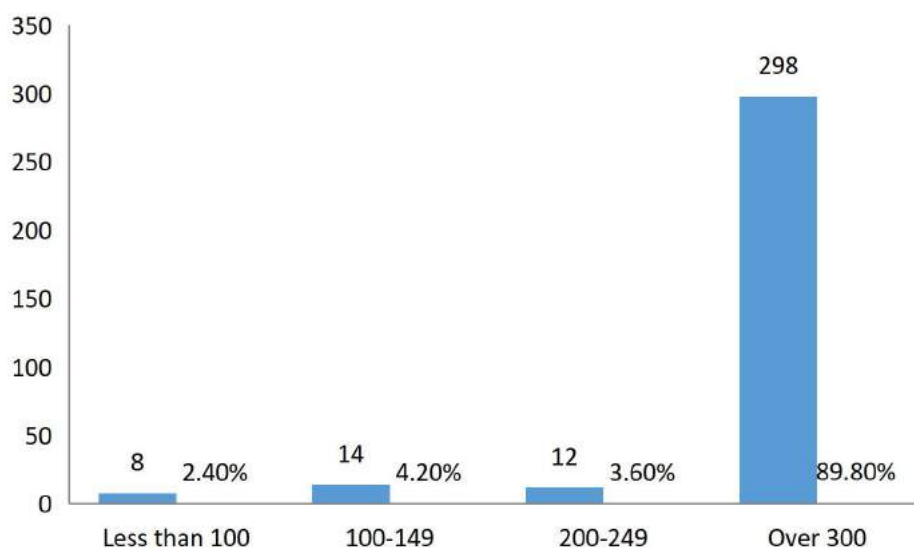


Figure 6: Number of Employees

Figure 6 shows number of employees' distributions as respondents in the study. It shows that at the number of employees in the bank, the majority (89.8%) of the participants indicate that their bank have more than 300 employees in its branches, while a handful (2.4%) of the participants claimed that their bank has less than 100 employees in its employment. Therefore, this implies that more participants from commercial banks with more than 300 employees in Nigeria participated in the study than participants from commercial banks with less than 100 employees. It also means that the researcher has more access to participants from banks with more than 300 employees across Nigeria than participants from banks with less than 100 employees in the study.

Job Title

The job title distributions of participants are presented in Table 7. Table 7 shows that at job title as bank employees, a vast majority (56.9%) of the participants were marketers. This is followed by 13% of the participants who were relationship managers, while 12.1% of the participants were revenue collectors, and 7.5% of the participants were fund transfers and ICT managers respectively. Also, 3% of the participants were bank managers.

Table 7: Percent Distribution of Respondents by Job Title

Job Title	Frequency	Percentage
Marketers	189	56.9
Relationship Managers	43	13.0
ICT Maintenance	25	7.5
Revenue Collectors	40	12.1
Fund Transfers	25	7.5
Bank managers	10	3.0
Total	332	100

For clarity, the percentage distributions of respondents based on their job title indicated in Table 7 are presented in Figure 7 below:

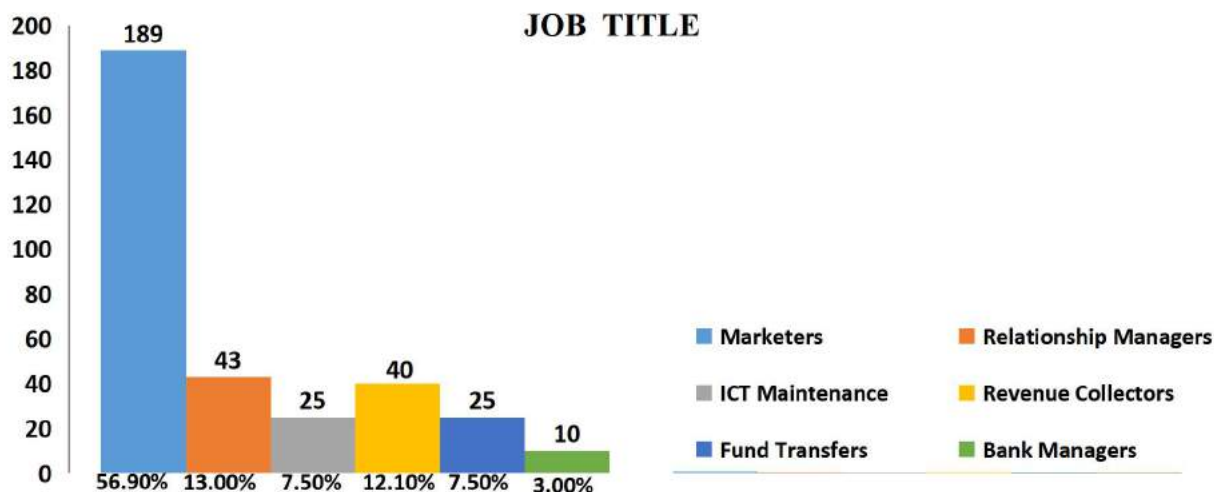


Figure 7: Job title of employees as respondents

Figure 7 shows job title of employees' distributions as respondents in the study. It shows that at job title, a vast majority (56.9%) of the participants were marketers, while a negligible few (3%) of the participants were bank managers. Therefore, this implies that more participants were marketers participated in the study than a handful of the participants who were bank managers. It also means that the researcher has more access to marketers as participants across banks in Nigeria than participants as bank managers in the study.

Inferential Analysis

There was a significant relationship between the use of MIS and decision-making process in the deposit money banks ($r = 0.487$; $df. = 278$; $p < 0.05$). This suggest that MIS provides a valuable function such as collating unimaginable volumes of data into a coherent report useful for decision making. The finding does not pose any surprise considering the role of MIS in effective decision making. It suggests that deposit money banks will not be efficient and effective in its operation without information resources; hence MIS is needed for effective decisions in the deposit money banks. The finding is consistent with Emetarom (2011) that utilization of computerised MIS in banks does improve their services in recent times. On the contrary, it contradicts Emechebe and Garba (2016) who found that MIS is not fulfilling its objectives in its ability to help make quick decisions and in the day-to-day management of the banks. Also, Hagg et al., (2012) affirm that for information to be useful in decision making, it must be relevant, accurate, and timely. The authors affirm that MIS does not necessarily imply improved decision making; that is because the accuracy of MIS is not absolute, and the quality of information depends on analysis, system maintenance, and cost effectiveness (Hagg et al., 2012).

There was a significant relationship between the use of MIS and policy making process in the deposit money banks ($r = 0.538$; $df. = 278$; $p < 0.05$). This has implications not just on planning and management but also on policies guiding the operations of the banks. This implies that the deposit money bank authorities place premium on information in making viable policies as well as implementing the policies. This has constituted one of the potent ways of ensuring quality standards in the deposit money banks; hence the introduction of the computerised MIS in the deposit money banks in southwest, Nigeria. However, Ajayi and Omirin (2017) found that policy making processes in the deposit money banks are based on other factors other than information at hand. This could be as a result of problems encountered in MIS which sometimes delay information needed for making policies.

There was a significant difference between public, private and foreign deposit money banks in their utilization of MIS in their mode of operations ($F_c (2, 277) = 9.49$; $p < 0.05$). Not only this, but also it

was found that public-owned deposit money banks exhibit significantly higher tendency towards utilization of MIS in their mode of operations when compared with Privately-owned deposit money banks and foreign-owned deposit money banks. These findings point to the fact that most public or government owned deposit money banks utilize MIS in their operation to perform functions such as registration of customers and businesses, lodgement of complaints, notification of results, interactive process, and dissemination of important notices, more so than their private and foreign counterparts. The reason adduced for this finding is the fact that state governments in the six states that comprised southwest in the country cooperatively and jointly established, owned and funded deposit money banks and equipped with the state of arts and modern technology under the auspices of Oodu'a Investment Company Limited. The six owner states (Oyo, Osun, Ogun, Ondo, Ekiti and Lagos) meet regularly and deliberate on many issues and business interests that bordered on the Oodu'a Investment Company Limited since its incorporation in 1976.

Table 8: Correlation between Management Information System and Decision-Making Process in the deposit money Banks

Variable	Mean	SD	N	Df	r-cal	r-critical	Remark
Use of MIS	25.28	3.22	280	278	0.487	0.113	Significant
Decision -Making Processes	23.71	4.53	280				

Table 8 shows that the calculated R-value of 0.487 is greater than the critical R-value of 0.113 given 278 degree of freedom at 0.05 level of significance. Therefore, the null hypothesis was rejected, and alternative hypothesis accepted. There is a positive correlation, though weak, between the variables of MIS and decision-making process in the deposit money banks. This means that as MIS usage increases, decision-making process in the banks is disrupted and it enhances innovation, application and development.

Table 9: Correlation between Management Information System and Policy Making Process in Commercial Banks

Variable	Mean	SD	N	Df	r-cal	r-critical	Remark
Use of MIS	25.28	3.22	280	278	0.538	0.113	Significant
Policy Making Processes	24.13	4.06	280				

Table: 9 shows that the calculated R-value of 0.538 is greater than the critical R-value of 0.113 given 278 degree of freedom at 0.05 level of significance. Therefore, the null hypothesis was rejected, and alternative hypothesis accepted. There is a significant positive relationship of moderate strength between MIS and policy making process in the deposit money banks. This means that as MIS usage increases, policy making process in the banks is altered to channel for new cause and application for day to day operations.

Table 10: One-Way Analysis of variance on difference in the Utilisation of Management Information System in Operations of Commercial Banks

Commercial Banks	N	Mean (\bar{x})	SD	
Public	78	12.17	4.21	
Private	163	12.24	4.96	
Foreign	39	11.95	3.90	
Sources of Variance	Sum of Squares	Degrees of Freedom	Mean of Squares	F-ratio
Between Groups (Level of Commitment)	270.80	2	135.40	9.79*
Within Group (Error)	3826.91	277	13.82	
Total	4097.71	279		

*Significant; $p < 0.05$; $df = 2/326$; critical $F = 3.04$

Table: 10 revealed that a calculated F-value of 9.79 is greater than the critical F-value of 3.04 given 2 and 277 degrees of freedom at 0.05 level of significance. Consequently, the null hypothesis was rejected, and the alternative hypothesis confirmed. This means that there is a significant difference between public, private and foreign deposit money banks in their utilization of MIS in their mode of operations.

Due to the significant difference in F-test observed, it became necessary to do a pair-wise comparison of group means to determine which group differ from the other on the variable and the pattern of the difference in the commercial banks utilization of MIS in their mode of operations. Fisher's protected t-test technique was used to achieve this objective. The result of the analysis is presented in Table 11.

Table 11: Fisher's protected t-test on commercial banks utilization of MIS in their mode of operations

Group	Public (n = 78)	Private (n = 163)	Foreign (n = 39)
Public	12.17a	3.04*	2.42*
Private	-0.07	12.24	0.68
Foreign	0.22	0.29	11.95

* Significant, $p < 0.05$

a = Group means (\bar{x}) are bolded in the diagonal; differences in group means (\bar{x}) are below the diagonal, while protected t-test values are above the diagonal.

Table: 11 revealed the pair-wise comparison of group means. It was observed that public-owned Deposit money banks exhibit significantly higher tendency towards utilization of MIS in their mode of operations when compared with Privately-owned Deposit money banks ($t = 3.04$; $df = 239$; $p < .05$) and foreign-owned deposit money banks ($t = 2.42$, $df = 115$; $p < .05$). However, a non-significant difference was observed when Privately-owned banks were compared with the foreign-owned deposit money banks in their exhibition of tendency towards utilization of MIS in their mode of operations ($t = 0.68$; $df = 200$; $p > .05$).

6 Conclusion

This study through the findings concluded that, there existed a significant relationship between the use of MIS and decision-making process in the deposit money, this will assist the banks mode of operation to discharge their organisational culture aiming to achieving the vision, mission and to maintain and retain their client for the bank's growth and development. There was a significant relationship between the use of MIS and policy making process in the deposit money banks which leads to introduction of different policies and strategy for health and standard practice especially during the global economic disruption and re-fertilisation. This aids continental and global best practices in the sector and allows for more financial institutions to boost dying economy and investment. There was a significant difference between public, private and foreign deposit money banks in their utilization of MIS in their mode of operations.

Management should use the findings of this study in whole or in part to increase their banks' market efficiency and performance. Management needs to have proper MIS in place in order to increase employee satisfaction and retention, and attract new employees. If a commercial bank has proper MIS, this will trigger a chain reaction which will ultimately lead to improved bank performance. Management should adopt MIS policies in order to improve the bank's operations as the effect of new technologies on banking marketing operations should be examined from time to time in relation to their effect on productivity in terms of utilisation of resources to achieve market efficiency and performance.

Management should focus on market research in the areas of MIS hence new product development would be discovered to attract the unbanked. This will result in adequate exploitation of its benefits as well as offer appropriate value to the banking public which will ultimately enhance performance in the banking sector.

Management should focus on market efficiency in the areas of MIS which plays an important role in enhancing banks' performance and ensuring their continued existence. Effectiveness and efficiency of MIS and diversification of resources promote customer loyalty and the safety of customers' deposits, protect shareholders' funds, and improve public confidence as well as assure the regulatory authorities that the bank is safe.

Management should promote efficiency by motivating employees in MIS and standardising work methods.

7 Managerial Implications

This study is limited to the deposit money banks in the Southwest Nigeria being the region where there is concentration of the banks and commercial nerve of west African nations that host two third (2/3) of the banks head office and the cadre of the study population. Based on the findings of the study, the following recommendations were made: The deposit money banks management should educate staff on the benefit of utilizing MIS and its technical know-how skills by management and staff in the banks. This will enable them to process required information for meaningful use. This should be a continuous learning exercise (on the job training) on computer gadgets to facilitate MIS application. Considering the importance of MIS in producing reliable information for the management of the banks, it is recommended that the Federal government supports MIS projects with adequate funding. The Central Bank of Nigeria (CBN) as the nation apex bank should enshrine in the financial policy that all deposit money banks embrace the use of MIS for management functions. There should also be staff involvement and commitment in the use of MIS to bring about significant changes within the banking system in Western states of Nigeria, and Nigeria as a whole. Further study should extend the study coverage to involve all the financial institutions knowing that MIS is the bedrock of any successful organisation.

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Factors Affecting Diversity Management In a Non-Profit Organisation In South Africa

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Keywords

Diversity management, non-profit organisation, individual factors, intergroup factors, organisational factors

Abstract

Globalisation, migration, affirmative action laws and other factors have led to diverse communities and, inevitably, a diverse workforce. The realisation that all people are different in many ways has led to the need to accommodate these differences and ensure that everyone is valued and feels recognised as an individual. The primary objective of the study was to establish employees' lived experiences of the factors that affect diversity management in a non-profit organisation (NPO). A qualitative case study was conducted with a census sample of all employees at the NPO. Themes were manually deduced from the data using qualitative content analysis and then interpreted using graphs and charts. Factors affecting diversity management emerged at organisational, intergroup and individual levels. These factors included but were not limited to prejudice, stereotyping, gender and age discrimination, cultural differences, ethnocentrism, structural integration, organisational culture, resources, political environment, ethnocentrism and lack of strategy. The study unearthed various unique factors affecting diversity management in NPOs. The findings also confirmed that over and above the unique factors, NPOs are affected by the same factors that affect public and private-sector organisations.

1. Introduction

Managing the most important resource in the workplace – the workforce – can be complex, considering that humanity is not homogeneous. Acknowledging diversity is the first step in ensuring that all employees are valued and perform optimally. Chigudu (2018:1-15) opined that valuing and managing diversity is key to effective human resource management (HRM), which can improve workplace productivity.

Optimum productivity is easily attained when HRM is viewed as a critical part of achieving the organisation's goals. Strategic human resource management (SHRM) brings together the organisation's goals and policies with the factors that affect its human capital to develop strategies to achieve or gain a competitive advantage (Sanghvi, 2019:153-161). It can be deduced that diversity management is indeed strategic and should be incorporated into SHRM.

Despite the strategic importance of human resources, most SHRM models consider them as a generic and homogeneous category, and do not consider the diversity of the employees. Martín-Alcázar (2013:39-49) concluded that managing a heterogeneous workforce requires a holistic transformation of human resource strategies and that efforts to define cross-cultural (Lambert, 2016:68) and diversity-oriented models remain undeveloped. A global study by Morgan Stanley (2016:1) proved that more gender and racial diversity, particularly in corporate settings, can translate to increased productivity, greater innovation and better decision-making, as well as higher employee retention, commitment and satisfaction. Ohunakin, Adeniji, Ogunnaike, Igbadume and Akintayo (2019:93-102) defined diversity management as an HRM practice of variations in human capital and ensuring that

such variations do not have a negative influence towards the achievement of the organisational goals and objectives.

This study is motivated to address the lacuna of diversity management research conducted in non-profit organisations (NPOs) in the South African context. The NPO sector, popularly known as civil society (Do Carmo Guerra, De Sousa Teodosio & Mswaka, 2016:65) and sometimes referred to as the third sector (Tomlinson & Schwabenland, 2010:101-121), has contributed to development in South Africa and the world over. The sector is made up of NPOs, community-based organisations and civil-society organisations, which are neither profit making nor part of the government and are funded by local and international donors to contribute to socio-economic development.

The sector is a major social development contributor as NPOs are established to address several problems, such as social, health, cultural, education and advocacy problems; therefore, it is important that HRM contributes sufficiently to these goals (Baluch & Ridder, 2021:598-625). There were 220,116 NPOs registered by the department of Social Service in 2019 suggesting that they contribute to reducing unemployment rate in South Africa (Statistics South Africa, 2021:3).

Diversity management in non-profit organisations

Unlike private-sector entities, NPOs are not driven by profits but by their passion to act as intermediaries and monitors of the public good and expanding access to social and economic services that create jobs and eradicate poverty (Jones, Harvey & Godfrey-Wood, 2016:1). Thus, South African NPOs act as social watch and service delivery agents (Swilling & Russell, 2002:6). With governments facing the difficulty of dealing with the increasing demand for public services, NPOs have been growing in economic and social importance internationally, shifting their scope of action from complementing the public sector to collaborating with it in the provision of services (Torres, Pina & Acerete, 2005:217-238).

The NPO mandate is not driven by profits; hence, there is sometimes a lack of initiative when it comes to management strategies that are not a necessity. Traditionally, NPOs depend on funding from local and mostly international donors for survival. Donor funding is usually aimed at supporting the core business of these organisations, leaving them with little to use for investing in human capital management initiatives, including diversity management. This implies that NPOs do not need to follow conventional business interventions to deliver on their mandate, despite having a diverse workforce.

However, peer competition, lack of sustainable resource management and dwindling resources have led to NPOs working towards better competencies to increase their efficiency and attract funding, which is crucial for their survival (Liaoa & Huang, 2016:20-27). Liaoa and Huang (2016:20-27) asserted that the performance of an NPO's management will affect not only its survival but also its donations and mandate of establishment. Liaoa and Huang (2016:20-27) further stated that improving NPOs' performance and service quality has become a crucial task.

Workforce diversity in South Africa

South Africa is one of the most diverse countries in the world, with 11 official languages and people from different ethnic backgrounds and cultures. Having realised the effects of its unfortunate past, the government of South Africa passed a number of acts to redress the inequality and diversify in the workplaces, such as the Employment Equity Act (55/1998) (Erasmus & Schenk, 2008:98). The purpose of the Employment Equity Act (55/1998) is to achieve equity in the workplace by:

- promoting equal opportunity and fair treatment in employment through the elimination of unfair discrimination; and
- implementing affirmative action measures to redress the disadvantages in employment experienced by designated groups, in order to ensure their equitable representation in all occupation categories and levels in the workforce.

Even though these efforts were not enough, they saw previously disadvantaged people entering the labour market and some climbing the corporate ladder because organisations had to conform to the legal framework. However, it is good to note that some organisations have since moved from conformance to embracing the diversity of the workforce, with positive results. The apartheid era in South Africa was characterised by massive racial divides in education and the workplace (Herman, 2017:1). However, due to the influx of black labour, it is now imperative for employers to shift their mind-set to embracing the black labour as part of the human resources. This is just one example of the struggles of South African employers as they are also faced with a rise in migrant workers and other diversity dimensions, such as gender, religious beliefs and sexual orientation.

In 1982, the South African Board for People Practices (SABPP) was founded as a standards and professional registration body to ensure the professionalisation of the HRM profession. The work of the body has seen the establishment of the SABPP HR systems standards, which provide guidance on the management of HRM programmes, the conduct of HRM systems and the competence of HR professionals applying the standards, as well as providing a framework for HR service providers operating as consultants and learning providers (SABPP, 2013:5). The standards also advocate for the alignment of the HRM strategy to the business strategy. These standards are largely adopted by organisations to improve their HR practice. The absence of diversity management from the 13 pillars of the national HR system standards is an area of concern. Diversity management is only covered under the standard of employment relations management, which aims to improve employment relations, promote diversity and prevent unfair discrimination (Šukalová & Ceniga, 2020:9-24).

1.1 Problem statement

Some of the authors cited in section 1.1 have shown that the NPO sector is not spared from the diversity management challenges faced by public and private-sector organisations (Liaoa & Huang, 2016:20-27). Despite their contribution to job creation (Statistics South Africa, 2021:3), little research has been conducted on diversity management in NPOs in South Africa. In order to address this gap, the purpose of this study was to address these objectives:

The aims are as follow:

- to explore how employees view individual factors that affect diversity management at an NPO;
- to explore how employees view intergroup factors that affect diversity management at an NPO; and
- to explore how employees view organisational factors that affect diversity management at an NPO.

1.2 Methodology

The study was influenced by the interpretivist paradigm, as the aim of the study was to achieve a further understanding of the employees' lived experiences of the factors affecting diversity management at an NPO. Therefore, the focus of the study was to understand and interpret human behaviour to bring further understanding about the research topic, rather than to generalise and predict causes and effects (Bryman, 2012:28; Saunders, Lewis & Thornhill, 2019:128-171).

The cross-sectional research design allowed the researchers to observe and analyse the experiences of the study participants at the same time (Setia, 2016:261-264). In addition, a case study was used because the study was conducted in a single organisation (Bryman & Bell, 2011:531).

Population and sampling

For the purposes of this study, the target population consisted of 8 NPO employees. The study was conducted in one NPO in Gauteng because the researchers only had access to that specific organisation. The role of the NPO is to enable access to justice and legal empowerment for marginalized communities in South Africa. A census was used to get more accurate information as the population was small. The census was within the range of 4 to 20 participants suggested by

Kothari (2004:55) for the study with a homogenous sample (i.e. the one that is dominated by certain biographical characteristic like gender or race).

Data collection

Semi-structured face-to-face and telephone interviews were used to collect data since this study was conducted before the COVID-19 pandemic. Semi-structured interviews were the most suitable as they guided the researchers to probe participants for short essay responses to specific open-ended questions with room to follow up (Zikmund, Babin, Carr & Griffin, 2013:151). An interview protocol comprising two sections was used to collect the data. Section A included biographical questions and Section B consisted of open-ended questions related to individual, intergroup and organisational factors. Some of the questions asked were as follows:

- How would you explain the relationship between employees of different ethnic backgrounds?
- How does cultural background influence how you fit into the organisation with employees of different backgrounds?
- How do you think your personal identity affects how other employees perceive you?
- How would you describe the relations between people from different cultural groups in the organisation?
- In your view, what are the factors that influence diversity management in a positive way at the NPO?

Research procedure

The researchers were given ethical clearance (FCRE2019:FR/05/06-MS-02) before the data were collected. The participants gave verbal consent before participating in the study. In addition, the researcher who collected the data informed the participants that their participation was voluntary and that they had the right to withdraw or not respond to any questions that they were uncomfortable with. In order to enhance the participants' anonymity and confidentiality they were given pseudonyms (i.e. P1- P8).

Data analysis

Qualitative content analysis was used to simultaneously describe the employees' lived experiences of factors affecting diversity and develop a framework on factors affecting diversity management in NPOs (Kuckartz, 2019:181-197). The flexibility and dualism of qualitative content analysis allowed the researchers to use both inductive and deductive approaches to data analysis (Armat *et al.*, 2018:219-221). The deductive approach allowed the researchers to begin with the IMCD as the foundation of the data collection tool and initial coding framework (DeCarlo, 2018:160).

Data rigour

Data rigour was achieved by doing the following as suggested by Denzin and Lincoln (2018):

- **Peer review:** The researchers gave the manuscript to an academic and diversity czar to review its contents. The manuscript was reviewed based on the czar's feedback.
- **Member checking:** This study was conducted just before the COVID-19 pandemic and finalised during the hard lockdown, so the researchers could not go back to the participants to do member checking.
- **Quasi-statistics:** Using word counting, the researchers were able to generate graphs, count the number of participants and calculate descriptive statistics like means.
- **Saturation:** The sample size utilised in this study is within the range that is acceptable in the qualitative research. Earlier it was opined that in a homogenous sample, the sample size ranging from 4 to 20 participants is sufficient (Kothari, 2004:55)
- **Seeking concordance:** This was achieved by comparing and contrasting the study results with the results of other studies.
- **Audit trail:** Upon request, the researchers will make the data available for other researchers to verify that the data presented in this study were not fabricated.

2. Literature review

The diversity management model developed by Cox was deemed appropriate for this study because it addresses classified diversity management at individual, intergroup and organisational levels.

2.1 The Cox Interactional Model of the Impact of Diversity

The study was grounded in the Cox Interactional Model of the Impact of Diversity (IMCD), which explores the factors affecting diversity management within an organisation. The model emphasises diversity based on three dimensions, which are racial ethnicity, gender and nationality, and proposes that people affiliate to groups according to these three diversity dimensions (Cox, 1994:9). The model analyses the effects of a person's affiliations such as gender, race and nationality at three levels, which are:

- individual factors, which include personal identity structures, prejudice, stereotyping and personality type;
- group or intergroup factors, which include cultural differences, ethnocentrism and intergroup conflict; and
- organisational factors, which include the organisational culture and acculturation process, structural integration and institutional bias.

Individual factors

The model specifies that these three levels jointly define the diversity climate in an organisation. It further suggests that the diversity climate also influences career experiences and outcomes in two ways: affective outcomes, which refer to how people feel about their work and their employer, and the actual career achievement of individuals as measured by job performance ratings (Cox, 1994:10). The interaction between individuals with different personalities from different backgrounds and cultural groups may lead to conflict. Cox (1994:42) identifies four main factors that affect the management of diversity at the individual level, namely, group identity structures, prejudice, personality and stereotyping.

In terms of stereotyping, Cox the model suggests that members of certain identity groups are inhibited from gaining entrance into organisations or may experience status or career incongruence after joining (Samuel & Mokoaleli, 2017:55-56). The relationship between diversity and personality was analysed in this study using the Five Factor Model or Big Five Traits Theory on personality which was proposed by famous scientist Louis Thurstone in 1934 but has only drawn interest in recent years (Wiggins, 1996:1). The model identifies the following five personality traits: openness to experience, agreeableness, extraversion, neuroticism and conscientiousness (Han & Pistole, 2017:752-766).

Intergroup factors

A group identity is a personal affiliation with other people with whom one has certain things in common (Cox, 1994:43). This definition is supported by the social identity theory, which contemplates when and why people consider themselves members of groups (Robbins & Judge, 2017:315). Brewer and Miller (1984:281) also capture this concept as they suggest that a person's personal identity is highly distinguished and based on membership in substantial social groups, along with the value and emotional importance attached to that membership.

Cox model classifies three sources of prejudice: intrapersonal sources of prejudice, interpersonal sources of prejudice and societal reinforcement of prejudice. Verniers and Vala (2018:2) found that prejudice and discrimination are still prevalent in organisations, mostly against women and the contemporary dimensions of diversity such as the lesbian, gay, bisexual, transgender, intersex, and queer or questioning (LGBTIQ) community.

The concept of cultural differences hinges on the belief that cultural differences are not only limited to people of different nationalities but that there are significant culture group differences within society (Cox, 1994:128). Cultural differences are believed to make it difficult for affected parties to complete their tasks and work productively (Tran, Admiraal & Saab, 2017:91-110). Ethnocentric behaviour is

typical to many culture groups and is not limited to the dominant culture group. The concept of ethnocentrism states that the beliefs, behaviours and values of one's own group are evaluated more positively than those of out-groups.

Fernández-Salinero and Topa (2020:1-9) assert that conflict has a significant presence in any context that involves different people, groups or departments. Cox (1994:137) notes that sources of conflict in the workplace relating to diversity include power discrepancies, cultural discrepancies, competing goals, competition for resources and forced assimilation with the dominant group as opposed to the preservation of people's own identities.

Organisational factors

In the model, Cox (1991:34-47) adopted Milton Gordon's seven dimensions suggesting how the integration of people from different ethnic backgrounds into a host society should be analysed. These dimensions, described in Table 2, form the basis for the organisational factors which impact organisational effectiveness.

Table 1: Conceptual framework for analysing an organisation's capability to effectively integrate culturally diverse personnel

Dimension	Definition
Acculturation	Modes by which two groups adapt to each other and resolve cultural differences
Structural integration	Cultural profiles of organisational members, including hiring, job placement and job status profiles
Informal integration	Inclusion of minority-culture members in informal networks and activities outside of normal working hours
Cultural bias	Prejudice and discrimination
Organisational identification	Feelings of belonging, loyalty and commitment to the organisation
Intergroup conflict	Friction, tension and power struggles between cultural groups

Source: Cox (1991:34-47)

The concept of organisational culture and acculturation touches on the macro culture of the organisation and its dimensions that either enable or hinder acculturation or the ability of micro cultures to assimilate into the organisation (Cox, 1994:162). On the other hand, structural integration refers to levels of heterogeneity or the presence of people from different cultural backgrounds in the formal structure of an organisation (Cox, 1991:34-47). Levels of heterogeneity are measured by how well the overall employment profile represents various culture groups in the total workforce and participation in the power structure, which is analysed by assessing power distribution in a way that is meaningful to the organisation's development work on diversity (Cox, 1994:182).

Informal integration looks at levels of inclusion of minority-culture members in lunch and dinner meetings, golf and other athletic outings, and social clubs frequented by leaders of the organisation (Strydom & Erwee, 1998:1-14). The concept of informal integration recognises that participation in informal groups plays a vital role in individuals' career success. Strydom and Erwee (1998:9-14) and Tolbert and Zucker (1983:23) suggest that some management practices often unintentionally hinder the full participation of outgroup members.

Organisational factors can be classified into three groups, namely, monolithic organisations where structural integration is minimal and the organisation is highly homogeneous, plural organisations with a heterogeneous membership that are nonetheless culturally monolithic and do not value and use the differences for the benefit of the organisation, and multicultural organisations that embrace diversity and ensure that the organisation is a safe place for all (Cox, 1991:39; Cox & Blake, 1991:53). The framework suggests that, if the above factors are managed properly, they can result in effective organisations with more satisfied employees, group cohesion, high performance and less absenteeism (Cox, 1994:7).

Table 2: Relationship between organisational form and dimensions of the diversity climate

Dimension	Organisational form		
	Monolithic	Plural	Multicultural
Culture	Ignores or actively discourages diversity	Ignores or tolerates diversity	Values diversity
Acculturation	Assimilation	Assimilation	Pluralism
Degree of structural integration	Minimal	Partial	Full
Degree of informal integration	Minimal	Limited	Full
Institutional bias in HR systems	Omnipresent	Prevalent	Minimised or eliminated
Intergroup conflict	Minimal, due to identity homogeneity	Significant	Minimised by management attention

Source: Cox (1991:34-47)

In summary, the Cox diversity management model mentions that the diversity climate is defined by individual, intergroup and organisational factors. The results are discussed in the next section.

3. Results and Findings

The biographical distribution of participants is shown in Table 3. The results indicated a mean age of 33.38 years and median age of 31 years, with an age range of 30 years. The majority of the participants were women, with only one male participant. The results also showed that the NGO predominantly employed highly qualified people, as 75% of the staff had a university degree. The organisation was registered in 2012 and the average tenure was 3.5 years. This seems to suggest that the participants were still new as their tenure were less than 5 years.

Table 3: Participants biographical information

Variable	Frequency
Age	<ul style="list-style-type: none"> • 25 (n=1) • 29 (n=1) • 30 (n=1) • 31 (n=3) • 39 (n=1) • 51 (n=1)
Gender	<ul style="list-style-type: none"> • Female (n=7) • Male (n=1)
Qualification	<ul style="list-style-type: none"> • Grade 11 (n=1) • Certificate (n=1) • Degree (n=2) • Honours degree (n=3) • Masters (n=1)
Tenure	<ul style="list-style-type: none"> • 0.75 (n=1) • 1 (n=1) • 2 (n=1) • 3 (n=1) • 4 (n=3) • 5 (n=1)

Source: Authors

3.1 Individual factors

The participants' biographical factors like language and age were some of the individual factors that influenced diversity at the NPO. "So, my identity as a migrant influenced, people were looking at me in a different way they say okay even if you're on your phone speaking your own language people say what was that you were saying," mentioned P1. P2 said, "There was also quite fundamental issues of ageism and patriarchy that were entrenched in the organisation that needed to be respected and I

struggled to do that.” Race was also mentioned as an individual factor influencing on how employees related at the NPO. P8 responded by saying, *“Yes. But not to a large extent. I mean, I remember when K and I had debates about blackness and K accused me of not being black enough.”*

Participants’ different personality types also affected how they related with their colleagues. P3 responded by saying, *“I think that NPO had a strong clique culture that disallowed for my personality then at the time to show up.”* P4’s response was as follows: *“Yes, I can communicate with other people very well and understand and respect them but there are certain parts in my life where I’m not comfortable maybe speaking in an open group discussion where there are a lot of people.”* Other personality types that emerged from the data were as follows: *“Confrontation”* P2, *“Non-confrontational”* P5, *“Reserved or introvert”* P4, and *“Extrovert”* P6. P7 responded by saying the following, *“From my side, people they will look at me in a good way. I do not know because I do not think there was something that can make them to treat me bad or what?”*

Sometimes being honest was mentioned as a factor that soured the relationship at the NPO. P6 mentioned that *“I’m honest about life but also with the negative part in terms of the honesty part because some people are offended when we are trying to be honest with them, they don’t take it as being honest.”* On the other hand, P1 mentioned that the relationship was based on prejudice, *“So, my identity as a migrant influenced, people were looking at me in a different way they say okay even if you’re on your phone speaking your own language people say what was that you were saying. Clearly, stereotyping, prejudice was there.”* P2 mentioned that the relationship was influenced by age and patriarchy, *“There was also quite fundamental issues of ageism and patriarchy that were entrenched in the organisation that needed to be respected and I struggled to do that. But, of course you assimilate and you learn and you start acting like the child that you’re and life goes by because that’s how you fit in the group.”*

3.2 Intergroup factors

According to the findings, the majority of the participants (75%) responded that their cultural background did not adversely how they assimilated in the NPO. They attributed this to similarities between their cultural backgrounds with the aspect of mutual respect cutting across their African cultures.

Three (3) out of 8 participants responded that their relationship was harmonious. P4’s response was, *“Okay, for me the relation between us I think it is okay. Okay, in the organisation firstly with the Xhosa because I think they were dominant in their time, so we had to learn their ways more because we had to learn their culture because they were dominant, so they will speak Xhosa most of the time so then you learn to learn a bit of Xhosa, so that you can understand what they are saying.”* P7 mentioned opined as follows. *“The background I think it was different. There was nothing bad that happened. Because you know sometimes, we can say, ‘you are a Xhosa, you are a Zulu’ no there was nothing like that. I did not see something like that.”* In addition, P2 response was, *“So, I think the relationships were harmonious.”*

P1 and P8, however, mentioned that the relationship was difficult. P1 said, *“I think it is a difficult relationship really.”* P8 said, *“I think there’s always that thing, maybe among the paralegals themselves when you go closer to them you will see that they really do not like each other because of their different languages, and background.”* Conversely, P3 mentioned that the relationship was regular: *“Umm, I genuinely did not see anything and perhaps I am misunderstanding difference to be negative but there was not, it genuinely didn’t stand out, it was just regular.”* P5 added that the relationship should be professional – it must be based on the organisational structure or reporting line and other things are secondary: *“Because the first ... your engagement is not about where they come from, but it is about who this person is in relation to who I am. Is this person my director, is this person my boss, you know? Is this person my subordinate? How is the working relationship with the person, you know? And then everything else is secondary to the fact that I must report to this person.”*

3.3 Organisational factors

Referring to the organisational factors at the NPO, some of the participants said it was challenging to implement diversity due to lack communication, strategy and policies. In terms of the latter, P3 opined that, *“So, it would be the reverse, the fact that in my experience I wasn’t aware of any policy that spoke specifically to diversity or an induction process that would have taught me through that, the values of the organisation were very much tied to the work of the organisation as opposed to the people in the organisation.”* P4 mentioned that *“there’s no communication in the organisation or maybe someone has no leadership skills in the organisation, so it does affect the progress of the organisation.”* Other factors that stymied the implementation of diversity management were a *“lack of strategy”* according to P2 and a *“lack of resources”* as mentioned by P1.

Organisational culture was also mentioned as a factor that can adversely affect diversity management and strategy implementation. P8 mentioned the following about organisational culture: *“There is a saying which is ‘culture eats strategy for breakfast.’”* The same participant added that, *“A culture is a factor because you may have a policy that does appreciate diversity. You want diverse news. We recruit diversely but then if the culture of the organisation is silencing of different views and perspectives, then cultures become a factor.”* When talking organisational culture, P2 opined that, *“I don’t know but I think when you’re in an organisation that is very personality driven so you kind of follow the lead of whoever is leading. So, you follow the leader really.”* P1 added that the organisational culture should be *“inclusive”*.

Stagnation, political environment and ethnocentrism were also mentioned as organisational factors that affect diversity management. P5 said the following about organisational stagnation: *“You get used to doing things with certain type of people, with a certain type of skill and nothing new is introduced in terms of doing things differently.”* When talking about political environment, P1 said: *“So, let us talk about the xenophobic movement that happens frequently so you start suspecting your people you’re working with or vice versa because the political environment is not favouring that integration.”* P1 added the following with regard to ethnocentrism: *“There is what they call in my area ethnocentrism where people feel like okay, they look at other culture from their own perspective without understanding that I can also look the same way I am looking at other cultures so I think people should remove ethnocentrism and be open to other ideas of what’s happening around, that what I must say.”*

Based on the results the authors of this paper developed a framework, shown in Figure 1, which the NPO can use to implement diversity management.

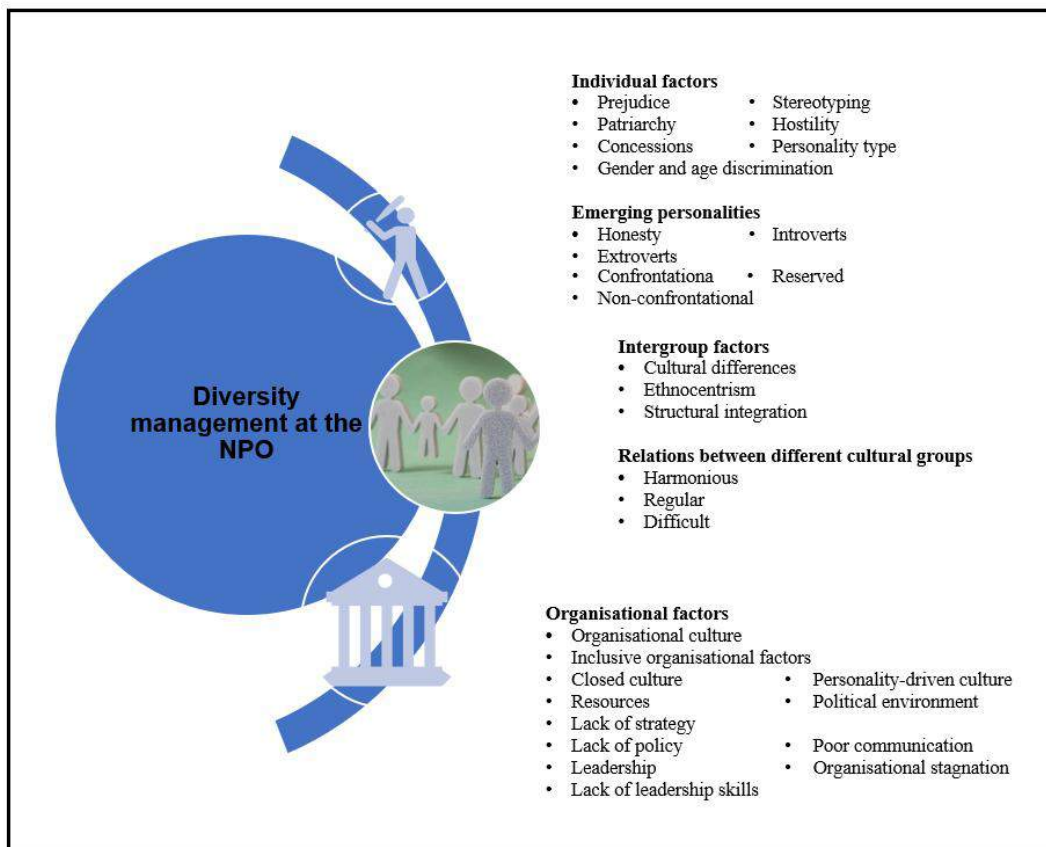


Figure 1: Diversity management framework for the NPO
Source: Authors

4. Conclusion

The primary objective of the study was to establish employees' lived experiences of the factors that affect diversity management in an NPO. The literature review showed that diversity management is under-researched in the NPO sector in the South African context. Hence, this study contributes to the diversity management body of knowledge to close this gap and has also developed a framework that can be used by NPO management. It is noteworthy that since this study was deductive in nature, it used the Cox model to develop questions and themes that were used by researchers to develop the diversity management framework.

Consistent with the literature (Samuel & Mokoaleli, 2017:55-56), this study revealed that the individual factors were sociological (i.e. discrimination, prejudice and patriarchy). It is interesting that patriarchy was mentioned, because the data showed that 7 out of the 8 participants were female. The interpretation is that, since the highest office bearer on the sample was a man and possibly portrayed patriarchal behaviours, the NPO environment was perceived to be patriarchal. The data revealed that issues of discrimination were related to ethnicity and xenophobia, which Cox (1994:43) classified as group identity. The other finding was related to organisational psychology or HRM, specifically personality types. The data showed that the personality types were similar to the Five Factor Model or Big Five Traits Theory on personality (Wiggins, 1996:1).

The intergroup factors that emerged from the data were linked to cultural differences and how participants related to each other. It is noteworthy that the participants perceived that the cultural differences did not cause intergroup conflict. Intergroup conflict emerges from cultural and ethnic discrimination and stereotypes of different people, groups or departments, according to Berray (2019:149) and Fernández-Salinero and Topa (2020:1-9). The unintended consequence of a difficult relationship is that it prevents other employees from completing their tasks and working productively

(Tran *et al.*, 2017:91-110). Hence, some participants were of the view that the work relationships in NPOs should be professional.

The data showed the NPO did not include diversity management in its strategic pillars. This finding is contrary to Sanghvi's (2019:153-161) argument that diversity management should form part of the organisational strategy. Since it emerged from the data that diversity management was not part of the strategy, it was not surprising that the NPO did not have a diversity management policy. Despite the lack of such a policy, those who were in leadership were perceived as embracing diversity management. This finding seems to suggest that the NPO was monolithic, according to Cox's (1991:34-47) classification. In monolithic organisations, the culture is not diverse (Cox,1991:34-47). Even though this study was conducted in the under-researched NPO sector and unearthed insights in the diversity management body of knowledge, it had its own limitations. Firstly, it was conducted in a single NPO, and from a quantitative lens it lacked external validity. However, since this was a qualitative study, it was not intended to be externally generalisable but to create a further understanding about diversity management. Using a cross-sectional research has its own challenges, as it only paints a once-off picture about the study. The sample was skewed towards women (7 out of 8 participants).

Based on these limitations, it is recommended that in the future a follow-up study be conducted to further establish whether the NPO is still monolithic. Researchers can replicate this study in other NPOs using bigger sample sizes and mixed-methods research designs so that they can triangulate the data.

The managerial recommendations are as follows:

- including diversity management in the strategy and developing the diversity management policy;
- creating opportunities for informal integration;
- formulating a diversity management policy;
- investing in teambuilding activities to create strong bonds between diverse employees;
- creating an organisational culture that is welcoming to all;
- creating an organisational culture embedded in professionalism; and
- shifting the approach from monolithic to multicultural.

It can be concluded that the NPO's commitment to managing diversity was minimal as there was no policy, strategy and resource to guide the management of diversity and there was a lack of initiative with regard to structural integration efforts. Some of the participants suggested that the lack of structural integration could have been due to the lack of resources as NPOs do not have the liberty to spend on human resource practices when there are pressing social justice issues around them and the pressure to deliver to funders.

5. Managerial Implications

Monolithic NPOs and organisations struggle with having diverse views. In addition, they have been found to be less productive; they lack innovation and better decision-making; and they have higher attrition rates and a less committed and satisfied workforce (Morgan Stanley, 2016:1). This makes them uncompetitive, and they often struggle to offer excellent service to their customers.

Managers who work in monolithic organisations do not focus on acculturation issues. This means that their employees easily assimilate into the organisations. This is also evident in the current case study or NPO (refer to Figure 2). This is good for the organisation because it does not delay employees from hitting the ground running. The other advantage of a monolithic organisation is that intergroup conflict is minimal. This means that employees do not find it difficult to achieve their tasks (Tran *et al.*, 2017:91-110). In addition, in such organisations, managers are treated with respect.

According to Cox (1991:34-47) the challenge with monolithic organisations is HR bias, which can take the form of developing policies that are discriminatory in nature, specifically against gender, sex and religious beliefs. Such HR policies are not in line with Section 9 of the South African constitution (Act 108/1996) and Section 6 of the Employment Equity Act (55/1998).

Acknowledgments

This paper is part of the first author's master's dissertation.

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Case Study: The Strategy behind the ground-breaking international M&A deal between the German Siemens Healthineers AG and the US-American Varian Medical Systems Inc

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Keywords

strategy; merger and acquisition; medical sector; technology; innovation; international; management; KPI; case study; intercultural; Siemens Healthineers; Varian;

Abstract

This paper explores the strategy and success factors in the merger and acquisition between two companies in the medical technology industry. The research provides an overview of the medical technology cluster in general and more specifically in Germany to gain a better understanding of the environment the two companies are operating in. By examining the backgrounds and using the Business Canvas Model, the initial strategies and gains contributing to the deal are presented. Afterward, the merger and acquisition deal details are discussed, focusing on the acquisition details and the main strategic objectives for both sides. Finally, the future innovations estimations of the joined company are discussed, as well as their combined long-term vision.

1. Introduction

Nowadays one of the most rapidly developing markets worldwide is the medical technology sector. Since there is a growing need for global healthcare innovations development, due to the aging population and in general increasingly challenging health environment, the medical sector is a center of broad interest. Therefore, this sector has attractive growth opportunities with generally stable demand. But the possibilities for high margins and profitability in the field also foster high industry competition (Jangra, 2021). In order to overcome the competition and maintain positioning, most companies need to boost innovation in their offers of products and services. This is very often achieved by increasing collaboration between companies in the medical device industry, because by combining their strengths, they broaden their portfolios in offering various products and services and facilitate innovation to develop. Mentioning the combining of strengths in the sense of internationalisation and expansion leads to the main aim of this paper - to present the strategic background of the merger deal between Siemens Healthineers and Varian and how this merger could shape a part of the future of innovations in the medical technology cluster overall, while contributing to the two companies overcoming the competition and potentially becoming a joined market leader.

2. Problem Investigated

The problem investigated includes the necessity to clarify how did two market leaders in their fields - Siemens Healthineers AG and Varian Medical Systems Inc develop to join forces, what are the reasons and tactical advantages behind this deal, as well as what are the future perspectives of it.

Firstly, an overview is provided of the environment that these two companies are operating in - from the medical device industry, through medical technology clusters to the increasingly emerging need for innovation. Moreover, an overview of the two companies, providing essential information about the companies themselves and their strategies contributes to painting the merger background. Via analysing the two companies' characteristics and strategies, their synergies in the deal and compatibility are estimated. But it is not only these two participants that define the whole medical device industry. Observing the medical technologies market is of great importance, in order to understand why many companies in this field are opting for acquisition expansion strategies for

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expansion. The next observed issue is the vision of the future of the joined company and what has been accomplished so far in this development. This analysis gives an insight into the potential future of the two companies and what their mutual goals are.

3. Research Objectives

The purpose of this study includes three major points, which will be analyzed in-depth in order to provide a better understanding of the problem at hand. These main points include:

- Analysis of the medical technology market, describing the German medical cluster's development in-depth;
- A description of the two companies' profiles - Siemens Healthineers and Varian, according to the Business Canvas Model, which provides a good overview on their most distinguished values and strategies before the merger deal;
- The third essential part of the Research Objective is the merger deal itself, which includes analysis of the background story since the companies' earlier partnership, main strategic objectives and how is the future foreseen for the newly joined company.

4. Hypotheses

The following hypotheses were formulated for the study, based on the perception that according to McKinsey, approximately 70% of mergers fail to achieve their expected revenue synergies, due to numerous reasons (Early, 2004). In the following study, the Siemens Healthineers and Varian merger is observed as an example of a successful merger, representing the remaining 30% of mergers, while emphasizing the success factors leading to their efficient cooperation. Such factors include a description of the M&A process and the final reasons for success - from the beginning of their long-lasting partnership of above 10 years to the operational excellence of both companies and being stronger in the digital and medical machine market together.

5. Literature Review

5.1 Medical Technology Industry

The development of the medical technology industry remains a challenging dynamic environment to keep track of. Innovation is increasingly required and is becoming an essential part of academics and industry, especially considering challenges the average citizen must face, such as Covid-19, for instance (Lateef and Keikhosrokiani, 2022).

According to Maresova et al. (2015), the medical technology industry, presented using the PESTEL analysis framework has promising future estimations. It reflects the increasing need for healthcare personnel. Furthermore, from an economical perspective, the industry provides many job opportunities, as well as facilitates the level of support, contribution and investment into R&D, and improves the communication with the end-users. All characteristics described and set up can be observed as correlated in the strategies of Siemens and Varian, aiming to further improve the medical device industry.

To remain competitive and reach market dominance, many companies have had to resort to partnering or acquiring a small-to-medium enterprise (Russel and Tippett, 2008). Such collaborations are not only increasing the competitiveness of the participating companies, but they also very often demonstrate the breakthrough innovation that led to them. It is more common, when discussing the medical industry, to refer to the bigger key players, waiting for their innovation, but sometimes more expertise is required (Ray et al., 2017). In fact, this is a strategic benefit for Siemens Healthineers, in their collaboration with Varian as a leading medical devices manufacturer in the oncology sector. Furthermore, taking the countries involved into consideration, an important role plays the economic strength of the two participants, such as the fact that Germany has become the most sought destination for M&A in the European Union since 2011 (Wellner, 2018b), while the American M&A is also strongly developing (Rhaman. et. al, 2018).

5.2 Mergers and Acquisitions

In general, many companies and company leaders have been looking for ways to improve company performances and results. As there are two main methods of executing this, the first one is called organic growth - to invest internally in innovation and new product development. The second one, inorganic growth, means investing outside of the own company, by executing mergers and acquisitions. This is often preferred as the companies often benefit from immediate advantages, such as client expansion and using it as a fast track to a given market (Jacob, 2020; Eckardt and Skaggs, 2018). Larger organisations have especially been interested in the inorganic methods, or more precisely M&A transactions (Sinclair and Keller, 2017).

But, M&A deals can also pose challenges if certain measures are not taken. According to the study made by Jacob the main six themes analysed by his qualitative analysis results, used to perform successful M&As are: (a) leadership focus, (b) value creation, (c) integration strategy, (d) the review process, (e) relationship development and (f) organisational governance. This combination of values can be used by leaders to base their decision-making and strategies on in order to avoid disruption or failure (Jacob, 2020, p.178). According to Olcay et al. date between 70 and 90% of M&As end up poorly performed, mainly due to a lack of strategies to execute the successful M&A processes (Jacob, 2019). But certain measures can be considered during the strategy planning stage. For example, compatibility can be analysed in detail between the merger participants, as certain metrics can be already assumed, such as innovation levels (Wellner, 2021a).

What plays a role in defining the success of M&A transactions is the innovation levels and accelerations of technological changes (Zhao, Lin and Hao, 2019). Furthermore, there are different scholarly opinions on the effect of M&A on innovation performances, positive and negative and a correlation has been found for company's sizes reflecting innovation performances at a later stage (Ma and Liu, 2017, p. 962).

5.3 M&A as a growth strategy for medical technology companies

During the last years the 'inorganic' choice of market growth (Jacob, 2020) has prevailed in the medical technology industry (Awasthi and Stanick, n.d., p.17). As one of the biggest trends nowadays, investing in M&A has promising opportunities, including market expansions, along with a wide focus on the development of innovative medical devices, boosting revenue growth (Awasthi and Stanick, n.d.).

Companies choose to act abroad with consideration to many different factors. According to Wellner factors, such as customer proximity, market proximity, strategy, demand, cost reasons are different reasons for strategic internationalization, as in the specific case the motion is that strategy is the strongest drive for this internationalization move abroad (Wellner, 2016, p.179).

According to a McKinsey report, medical-technology companies rely on M&A for market and profit growth and are dependent on this approach. Analyzing the 30 largest medical technology companies for that period McKinsey identified a direct correlation between success and M&A activity. These companies' activities represented 70% of the total deals of M&A in the medical-technology sector and out of them the 20% that used the 'organic' method (Jacob, 2020), only 2 of them reached \$2 billion annual revenue by 2016 (Copp et al., 2018). These results support the previous notion that very often Medical device leaders need to rely on M&As in order to keep their market dominance (Cha, Copp and Pellumi, 2014).

5.4 Value added by M&A transactions in the medical industry

A study by Nazarova analysed the effectiveness of healthcare M&A transactions in the USA and European countries in detail, identifying how to assess the additional value for purchasers and all M&A deal participants in the healthcare industry (Nazarova, 2018, p.375). There are many theories suggesting a positive impact on excess returns for purchasers, such as Moeller, Schlingemann, and Stulz (2004), as well as a study conducted by Martynova and Renneboog (2009), further supporting this theory (Boston Consulting Group, 2017). The study by Nazarova also supported the thesis of

positive excess returns for purchasers and further proved that the multi-directional impact of deal value, the method of payment and the size of the companies ensure a higher quality financial jurisdiction for the formation of an optimal business portfolio for medical companies. These findings support the notion of the effectiveness of these deals and identify key factors for efficient acquisitions in the medical industry (Nazarova, 2018, p.393).

Furthermore, the M&A transactions in the medical industry are not only defined by innovation level increase, revenue growth, or value-added. They also contribute to the general healthcare standards and breakthroughs. Therefore, adding new capabilities to their portfolio is a new strive for many companies. In fact, there has been an increase in the top 250 largest transactions aiming to add new capabilities from 11% in 2017 to 18% in 2021 (Haxer et al., 2022), showing an increase in the importance of this performance indicator.

All these success indicators described in the literature will present what to look for in the success rates of the Siemens Healthineers AG and Varian Medical Systems Inc. Merger in the long run.

6. Research Methodology

In this study the main research methodology used for data collection and analysis is qualitative descriptive desk research, due to the high availability of multiple company press releases and articles on the acquisition deal background and future prognoses. For the purpose of describing the overall Medtech segment development, there is also the methodology of desk research being executed in order to provide a clearly structured overview of how the medical device and technology industry is expected to develop in the upcoming years. Furthermore, using various companies' financial statements, a competitor analysis is executed in order to provide a better understanding of the global medical device market. When analysing the two companies' descriptions and merger deal details, the research mainly focuses on the newly joined company's cyber presence, where they revealed their future strategies and company models, as well as a full disclosure of the strategies they are planning to follow in order to achieve set goals, whether technical or financial. The two companies are analysed using the Business Canvas Model as a theoretical framework.

7. Results and Findings

7.1 Global Overview of the medical device and instruments' market

Global Overview

Before diving into the in-depth analysis of the two companies and the merger deal details, a highly essential part to be considered is the environment that these companies and the newly formed joined company operate in.

Starting with general market information, the medical device market is seen as one of the fastest developing markets worldwide and is expected to continue growing steadily. With an estimated market size of \$63423.6 Million by the year 2027, the medical device market is forecasted to continue increasing at a CAGR of 23.20%. This steady growth is influenced by many factors, such as the increased elderly population, rising life expectancy and the introduction of many healthcare challenges, which Covid-19 is an example. Furthermore, a crucial factor in the growth of the medical technology market is the increasing demand for medical equipment for the detection and treatment of various diseases (Market Research Future, 2021).

Generally, the healthcare market is divided into five main regions – Americas, Europe, Asia-Pacific and the Middle East and Africa. During the last years, the Americas and Europe have had the biggest impact and highest market share of the medical device market (Market Research Future, 2021). As the two strongest regions in the field, though, there lies a strategic benefit from the German and the American companies' merger deal, which will be explained below more in-depth.

The U.S.- the largest medical device market

Firstly, for the Americas region and for the whole globe, the U.S. is the largest medical device market, comprising over 40% of the global medical technology market. During the period 1980 – 2017, the medical device market has had an enormous impact on people in the U.S., more specifically by adding 5 years to the average citizen’s life expectancy and reducing the number of patient-days spent in hospitals by 58% due to medical technologies. Moreover, the MedTech industry is responsible for an increase in job creation and higher employment rates – the industry directly accounts for approximately 519,000 U.S. jobs (Advanced Medical Technology Association, n.d.). This improvement of the medical device industry and the healthcare system in the USA specifically during these decades can be reflected in future forecasts, further estimating an increase in standards of healthcare and subsequently life in the long term.

Competitive environment

When discussing the competitive overview of the medical technology sector worldwide, there are representatives of many sizes, despite similar strategies. Companies usually use various internationalisation methods to extend their footprints across the globe, while keeping collaboration as the main tactic for expanding the client base abroad and still successfully maintaining their brand identity (Market Research Future, 2021).

Some of the key players are presented in the following Competitor analysis (Table 1) for major worldwide players. The ranking is based on revenue achieved and growth realized in the period 2019-2020. The criteria shown in the columns of the table include the country of origin of the respective companies, the revenue achieved, and the workforce of the company.

Table 1: Top 10 medtech competitors: Revenues for the period 2019/2020

Company Name	Country of origin	Revenue (in \$ Billion)	Workforce
1. Medtronic	USA	28.9	90,000
2. Johnson and Johnson	USA	26	144,000
3. Thermo Fisher Scientific	USA	25.5	13,000
4. Abbott	USA	20	107,000
5. GE Healthcare	USA	19.9	54,000
6. Philips	The Netherlands	19	81,500
7. Fresenius Medical care	Germany	19	30,000
8. Siemens Healthineers	Germany	17.6	54,300
9. Beckton Dickinson and Company.	USA	17.3	50,000
10. Cardinal Health	USA	15.4	50,000

Source: Own compilation, Based on QTC recruitment, 2020; Own research

Most of the above-mentioned companies operate on a global scale and use various internationalisation strategies, from subsidiaries, organic investments and partnerships to acquisitions, such as for example the German key players’ methods for international expansion.

As it can be seen from the table above (Table 1), the dominant players are the USA and Europe, but despite their dominance in sales, emerging markets are also observed as promising with prompting growth opportunities and growth rates two to five times those of already developed markets. What makes them highly attractive are the changes in demographics, relating to the aging population, driving higher disease prevalence, rising income, availability of various insurances and increasing consumer demand, with more emerging-market consumers seeking a higher quality of care and greater financial possibility to afford it (Donoghoe et al., 2012).

7.2 Germany’s share in the Global Healthcare Market

Having gained insights into the global MedTech industry characteristics, the next step is to realise that the environment these companies operate in is highly influenced by the German share of the industry

since Siemens Healthineers is a German medical company, founded in Berlin and having today's headquarters in Erlangen, Germany. Therefore, after the global overview, an analysis of the German medical technology cluster and its perspectives are further benefits for the understanding of the future estimations of the joined company.

The medical device industry in Germany is highly developed in many instances, such as quality standards, known worldwide, as well as the high reliability for end consumers. Germany is also popular for its automotive and technology industries, boosting the economy further successfully and providing many job opportunities in the technology sector. According to the Germany Trade and Invest Agency (GTAI) Germany is Europe's biggest healthcare market with EUR 30 billion in sales generated in 2018 solely by the German medical technology industry. However, out of these sales generated, in 2018 almost 2/3 were exported to international markets, dominantly in the European Union, followed by North America and Asia. This contributes to Germany's reputation as the world's largest manufacturing nation, enjoying almost a 10% share of global medical technology production, after the USA (GTAI, 2020).

The German medical technology industry is also well developed in the aspect of the density of companies and clusters. The industry is home to over 1,300 medical device manufacturers and their 140,000 employees, gathered into around 30 clusters for the year 2018. Most of the companies are small and medium-sized enterprises, allowing tighter collaboration with nearby academic and scientific partners, increasing innovation possibilities (GTAI, 2020).

In general, there is a broad variety of clusters in Germany, differentiating by size and location mainly. The biggest ones with above 40 companies belong to cities Tübingen, Berlin and Düsseldorf, while the smaller clusters between 20-40 companies can be found in Nürnberg + Erlangen, München, Stuttgart, Frankfurt, Hamburg and many other German cities (GTAI, 2020).

By combining in such clusters, the companies can benefit greatly from many advantages. The closeness to higher education institutions does provide them not only with scientific breakthroughs first-hand, but it also provides great opportunity to ensure well-trained employees after graduation by keeping tight relations to the universities and offering dual study programmes or internship placements, for example. Furthermore, the proximity to manufacturing companies is also advantageous, due to quick accessibility and availability to parts and less resources demanded in order to obtain the needed parts.

Another important part of the German economy are the Hidden champions, representing small and medium-sized companies, focusing on niche markets very often and becoming global leaders. The Hidden champions benefits also highly from the forming of clusters and the proximity to universities, due to higher investments in R&D as a resource (GTAI, 2020).

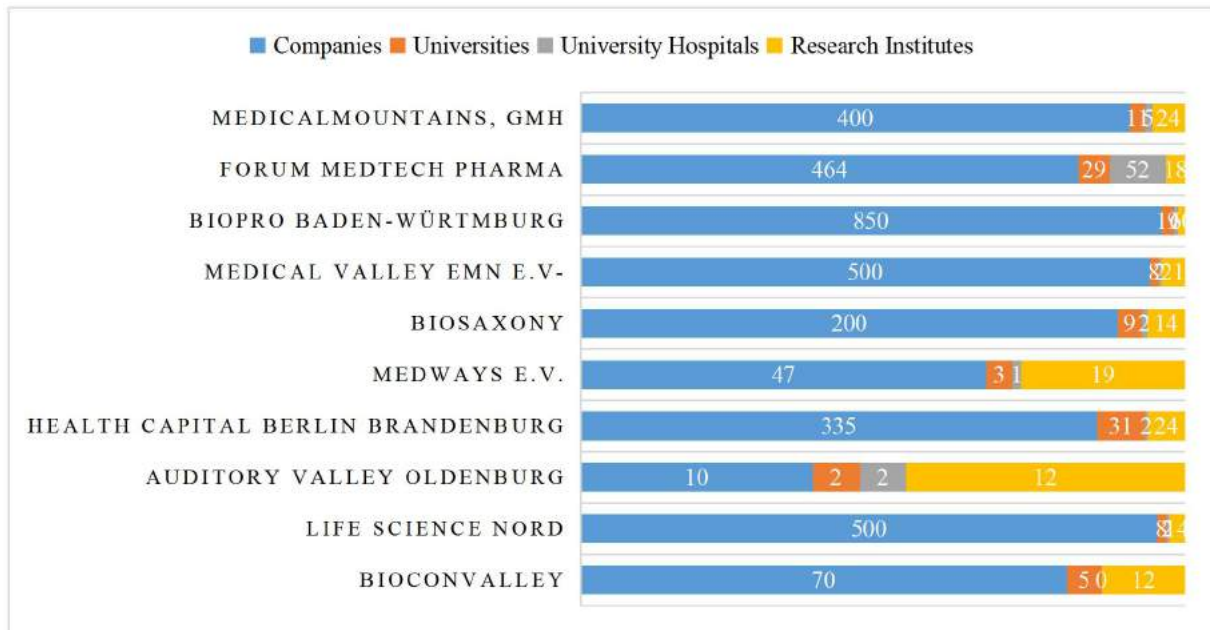


Figure 1: German Medical Industry Clusters by count of companies, universities or research institutes
 Source: Own compilation, Adapted from GTAI, 2020

As it can be seen from Figure 1, there is great variety on the consistency of the biggest clusters on the count of companies, count of resources or universities. Siemens Healthineers is among the most influential medical technology companies in the European Metropolitan region Nürnberg and Erlangen. It is one of the biggest German clusters with above 500 companies, 2 partnering universities, as well as access to 21 Research institutes. The cluster focuses mainly on Medical devices production, diagnostic imaging, telemedicine, Healthcare IT (GTAI, 2020).

The analysed clusters are influential and could pose as many success opportunities, as failure possibilities due to various external factors. Nevertheless, the German medical technology industry currently has promising future expectations for expanding, if standards are kept high.

Furthermore, Germany is increasingly becoming more attractive for foreign investors to pursue internationalisation expansion in the medical sector, but also in other industries. For example, Germany has become the most sought destination for M&A deals in the European Union (Wellner, 2019b), leading to a more in-depth evaluation of the first company, starting with Siemens Healthineers, headquartered in Germany.

7.3 Company Profiles according to the Business Canvas Model

7.3.1 Siemens Healthineers

Starting with the company Siemens Healthineers AG, which is a German-founded global medical device company, having achieved approximately 18 million EUR revenues for the fiscal year 2021 (Siemens Healthineers, 2021a). The company has sustained a significant growth of employees recently mainly due to the acquisition of Varian Medical Systems - from 54,300 to about 66,000 employees all over the world (Siemens Healthineers AG, 2021b). The company will be evaluated, using the Business Canvas Model as a theoretical framework and the major characteristics will be briefly discussed below in Figure 2:

Key Partners <ul style="list-style-type: none"> - Admiral De Ruyter Ziekenhuis, Netherlands - Cartagena and Mar Menor Hospitals, Spain - Barts Hospital NHS Trust, United Kingdom - Kantonsspital Baden (KSB), Switzerland - Medical University of South Caroline (MUSC), United States - >90% of global top 100 providers partnering 	Key Activities <ul style="list-style-type: none"> - Research and development - Customer meetings - Sales and marketing - External environment analysis 	Value Propositions <ul style="list-style-type: none"> - High quality after-sales service - High quality products and services - More efficient workflows - Personalized care - Add new capabilities and scale up existing ones to transform care delivery 	Customer Relationship <ul style="list-style-type: none"> - Long-term relationship with strong personal contact - Partnership with custom-made solutions 	Customer Segments <ul style="list-style-type: none"> - Public Sector - Private Sector
	Key Resources <ul style="list-style-type: none"> - Employees - Engineering know-how - Internal programs for employees 		Channels <ul style="list-style-type: none"> - Salesmen - Digital marketing - Referrals - Exhibitions and conferences 	
Costs <ul style="list-style-type: none"> - R&D - Employees - Marketing - Education through internal programs 			Revenues <ul style="list-style-type: none"> - Contracts for maintenance - Contracts for education - One-time payments - Revenue streams categorized by 	

Figure 2: Business Canvas Model of Siemens Healthineers
Source: Own compilation, Adapted from Osterwalder, 2004

Revenue streams and Cost structure

Further describing the characteristics of Siemens Healthineers, a more in-depth observation is being done, based on the framework of the Business Canvas Model, shown in the framework above. Starting with the Revenue streams and cost structure, an important remark for the company is the division of Siemens Healthineers into operational segments and respective regions. The company is divided into three main segments - Imaging, Diagnostics, and Advanced Therapies. Ever since the Merger deal with Varian, there is a fourth category added to the operations segment's division - Varian. It represents the full scope of products and services Varian works in, which is described in the following structure.

Table 2: Revenue of Siemens Healthineers by segment for the fiscal years 2020 and 2021

(in millions of €)	2020	2021
Siemens Healthineers	17,997	14,460
Therein:		
Imaging	9,821	9,090
Diagnostics	5,418	3,924
Varian	1,300	-
Advanced Therapies	1,716	1,628

Source: Siemens Healthineers, 2021a, p.12

From the Table 2 seen above, the various segments' share of the company revenues is described. As it can be seen, the Imaging sector accounts for roughly 55% of Siemens Healthineers' revenues, followed by Diagnostics with 30%, the new category Varian, accounting for more than 7%, and the Advanced therapies section, covering roughly 9.5%. It is of high importance to be mentioned that Siemens Healthineers is a leading global provider in its three main operating segments so far – Imaging, Diagnostics and Advanced Therapies. It is important also to highlight the portion of recurring revenue that the company generates is quite significant. Fifty-five percent of total revenue is recurring revenue, owing to Healthineers' new highly customized business models and value partnerships (Siemens Healthineers, 2021a).

From a geographical perspective, Siemens Healthineers has businesses all over the world (Figure 3) with fair distribution of sales, which indicates a solid customer base, due to the fact that their sales are not solely dependent on a few countries with a possibility of conflicts (politics, economic and other possible external aspects), but in broader regions all across the globe. The total sales are fairly distributed in the geographical regions, with 35% sales from the Americas, then 38% from Europe, the Middle East and Africa (EMEA) and 27% from the Asia-Australian region. The United States is the biggest single customer of Siemens Healthineers, same as already mentioned worldwide, accounting for 30% of total revenue, followed by China and Germany (13% and 10% of total revenue) (Siemens Healthineers, 2021a, p.12).

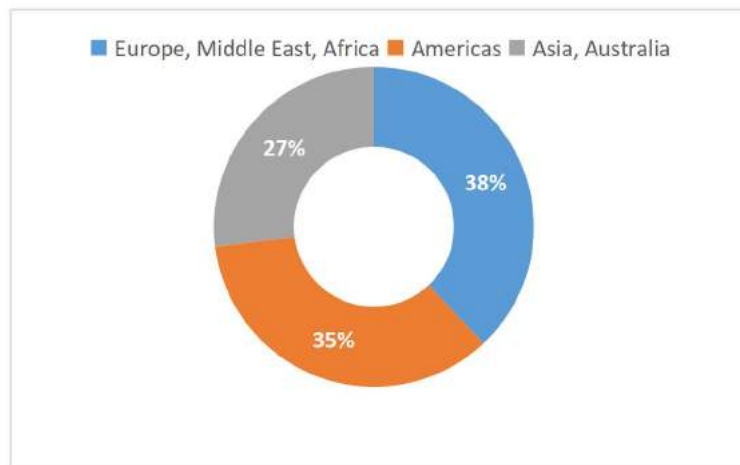


Figure 3: Revenue of Siemens Healthineers by region for the fiscal year 2021
 Source: Own compilation, Adapted from Siemens Healthineers, 2021a, p.12.

Value proposition and key activities

Continuing with the next step of the Business Canvas Model, Siemens Healthineers' focus on engineering resulted in a value proposition that offered high-quality products, in compliance with already discussed German standards, that attained high status on the market. In the current era of digitalisation, technological advancement results in a modified value proposition, providing the customer with better high-tech medical equipment that is more integrated with AI and cloud technology. Due to a transformation in the medical technology industry, Siemens Healthineers is forced to adapt to high demands for better outcomes at lower costs. According to Siemens' annual report from 2017, drivers of this transformation include increasing societal resistance to healthcare costs, payers becoming more professional, a shift to value-based reimbursement, chronic disease burdens, and rapid scientific progress. As a result, healthcare providers are consolidating into networked structures, resulting in larger clinic and laboratory chains, often internationally, which act as large enterprises. Applying this industrial logic to the healthcare market can lead to systematic improvements in quality, while at the same time reducing costs (Siemens Healthineers, 2021e).

As a further attempt to adapt to the industry, Siemens Healthineers does not stop with the innovation of their business model. They have come up with more innovative and customised solutions for

healthcare financing, such as the unitary payment model, where customers can allocate the heavy up-front capital investments to other more important initiatives, such as expanding clinical capabilities, hiring new talent, etc. by bundling the expenses of equipment, maintenance, operation and consulting service expenses in a single fixed payment over a regular interval. Another highly innovative solution from Siemens Healthineers is a pay-per-use model, where a healthcare provider pays a given fee per usage of medical technology assets. A hybrid of both unitary and pay-per-use models is also available in the subscription model. Providers seeking to combine flexibility and stability pay a fixed payment for specified volume and variable payments for overage fees (Siemens Healthcare GmbH, 2019).

Customer segments, relationships and partnerships

Moving to the next point based on the Business Canvas Model, Siemens Healthineers has a wide range of customers from the private sector as well as the public sector. Some examples of Healthineers' partners or customers are hospitals, healthcare providers, medical universities, etc. In terms of partnership and customer relationship, Siemens Healthineers has successfully secured long-term relationships with their customers due to 10 years plus contracts or partnerships. Admiral De Ruyter Ziekenhuis (ADRZ), a hospital and healthcare company based in the Netherlands, is a Siemens Healthineers' 10-year strategic partner for providing medical equipment, construction, financing, and management services. Another example is where Healthineers procures, installs, and delivers management services for 20.000 medical devices for Cartagena and Mar Menor Hospitals in a 15-year partnership. The last example of the partnership is Barts Hospital NHS Trust, the UK's largest hospital. The 35-year partnership, worth £370 million, for which Siemens Healthineers was trusted to supply imaging, radiotherapy equipment, and ultrasound systems (Siemens Healthineers, 2021d).

Siemens Healthineers offers value partnerships, where customers are getting help in optimising operations and processes, expanding, or adding new capabilities and advancing the degree of innovation in quality and precision of care delivery. In the next point below, value partnership and its innovative business model can offer as a value proposition for the company will be discussed. Additionally, Siemens Healthineers provides a package of service plans, such as equipment maintenance service, technical and clinical support, education and training for workforce know-how, consulting and optimisation for equipment and workflows, program updates and upgrades for cybersecurity (Siemens Healthineers, 2021d).

Strategic priorities

Since the main objective of this paper is to discuss the strategic background of the deal, let's start with the first company's strategy description. As part of its strategy to capture short-term potential and maintain leadership beyond 2025, Siemens Healthineers has defined strategic priorities in Phases. In the Siemens Healthineers Strategy 2025, the first phase, "Reinforcing Phase," was completed by the end of the fiscal year 2019. The goal of this phase was to introduce new products and platforms to the market and implement a cost-saving program that included productivity enhancements (Siemens AG, 2020).

Siemens Healthineers has defined clear priorities for its segments for the second phase of its strategy 2025, which began in the fiscal year 2020. It was planned for the "Upgrading phase" to continue until the end of the fiscal year 2022.

Siemens Healthineers has stated three cross-segment priorities: Gain market share in geographic growth markets; Gain market share with leading healthcare providers and Drive forward digital transformation. However, as of November 17th, 2021, Siemens Healthineers has entered the third phase – the "Upgrading" phase of the strategy 2025, the "New Ambition" phase and has managed to complete it one year in advance of original planning (Siemens Healthineers, 2021c). In the current stage, Siemens Healthineers will be focusing on their unique capabilities: Patent Twinning, Precision Therapy, Digital, Data and AI, all of which are major future focus consequences of the Merger deal with Varian, which will be explained in the following pages. And then the last phase of the "Strategy 2025" will follow, which is Market leadership as a joined company.

7.3.2 Varian Medical Systems

Having evaluated Siemens Healthineers' Business Canvas Model and strategic inputs, the second company follows - Varian Medical Systems Inc. Business Canvas Model is presented in Figure 4 below. Varian is the world's leading manufacturer of medical devices and software for treating cancer and other medical conditions with radiotherapy, stereotactic radiosurgery, stereotactic body radiotherapy, brachytherapy, and proton therapy. Having started its journey of helping patients in California in 1948 as Varian Associates, Inc, Varian now has over 10,000 employees worldwide (United States Securities and Exchange Commission, 2020a).

Key Partners <ul style="list-style-type: none"> - Siemens AG - McKesson Corp. - Google Cloud AI - Vantage Oncology - Icon group, South Africa - China Medical University Hospital - Penn Medicine Lancaster General Health's Ann B. Barshinger Cancer Institute 	Key Activities <ul style="list-style-type: none"> - R&D - Manufacturing and supplies - Government regulation 	Value Propositions <ul style="list-style-type: none"> - Leveraging AI and cloud-based solutions - Highly versatile, interoperable, and automated systems - Greater precision, short treatment times and cost effective 	Customer Relationship <ul style="list-style-type: none"> - Customer service representative - Long-term relationship with technical, operation, and maintenance support 	Customer Segments <ul style="list-style-type: none"> - University research - Community hospitals - Private and governmental institutions - Healthcare agencies - Cancer care clinics
	Key Resources <ul style="list-style-type: none"> - Human capital - IT Infrastructure - Cloud technologies - Over 120 active clinical collaborations at Varian 		Channels <ul style="list-style-type: none"> - Direct sales force - Network of distributors - Resellers 	
Cost Structures <ul style="list-style-type: none"> - R&D - Employees - Raw materials and manufacturing costs - Shipping and handling 			Revenues <ul style="list-style-type: none"> - Hardware products - Software products - Service revenues - Contract revenues 	

Figure 4: Business Canvas Model of Varian Medical Systems

Source: Own compilation, Adapted from Siemens Healthineers, 2020

Following the Business Canvas Model, shown below in Figure 4, Varian's main areas of operation are in oncology systems and proton solutions.

Table 3: Revenue of Varian by segment for the fiscal years 2019 and 2020

(in millions of \$)	2019	2020
Varian Medical Systems Inc.	3,225.1	3,168.2
Therein:		
Oncology Systems	3,061.8	2,997.8
Proton Solutions	143.9	121.1
Others	19.4	49.3

Source: Varian, 2020c, p.56

Revenue streams and cost structure

For Varian oncology systems remains the primary source of revenue and comprises about 95% of the total revenues. Of that 95%, of oncology systems are sold in the form of products (49% sales) and services (51% sales). The oncology system product revenues in the fiscal year 2020 decreased over the fiscal year 2019, resulting in a decline in hardware product revenues as a consequence of COVID-19-related delays, including site access restrictions and delays to customer installation readiness in the second half of the fiscal year 2020. The oncology systems service revenues, including performance obligations for installation, training, and warranty, increased in the fiscal year 2020 over the fiscal year 2019. This increase is possible, due to the ongoing customer adoption of service contracts as the warranty periods on their systems expire, and the number of customers as the installed base of our products continues to grow (Varian, 2020b; United States Securities and Exchange Commission, 2020b).

Focusing on the company’s biggest strengths, one of the most innovative aspects of the oncology segment is Proton therapy, which is a preferred way to treat cancer, because of its inherent physical properties, particularly in tumors near critical structures, such as the base of the skull, spine, optic nerve and most pediatric cancers. Even though proton therapy has been used in clinical settings for over four decades, it has not been widely adopted, because of its high capital cost. It is difficult and time-consuming to construct proton therapy facilities on a large scale, involves significant customer investment, as well as complicated financing structures. The decision-making process for patients is complex and slow and orders involve many variables (Varian, 2020b; United States Securities and Exchange Commission, 2020b).

The funding environment for large capital projects, such as proton therapy remains challenging and volatile nowadays (Kunze-Szikszay, Euler and Perl, 2021). In order to get proton therapy to be more widely accepted and deployed, Varian is focused on reducing the total cost of ownership and applying its knowledge in traditional radiation therapy to this treatment method, thus enhancing its clinical utility and reducing its cost of treatment per patient. From the financial perspective, the Proton solutions segment accounted for about 4 to 5% of total revenue and this business has not been profitable historically (\$65.5 million loss in the fiscal year 2020). The sales dropped 15% from the fiscal year 2019 to the fiscal year 2020 and the overall decline indicates a downtrend in this segment for the last four years due to various aspects mentioned earlier (Varian, 2020b; United States Securities and Exchange Commission, 2020b).

As per following the Business Canvas framework further, in terms of geographical revenue segment (Figure 5), the revenue predominantly comes from America, followed by EMEA (Europe, Middle East and Africa) and APAC (Asia-Pacific region), which is 48%, 32%, and 20% respectively. North America accounted for about 94% of the sales in America. International sales contributed to 54% of the total revenues of Varian (Varian, 2020b); (United States Securities and Exchange Commission, 2020b).

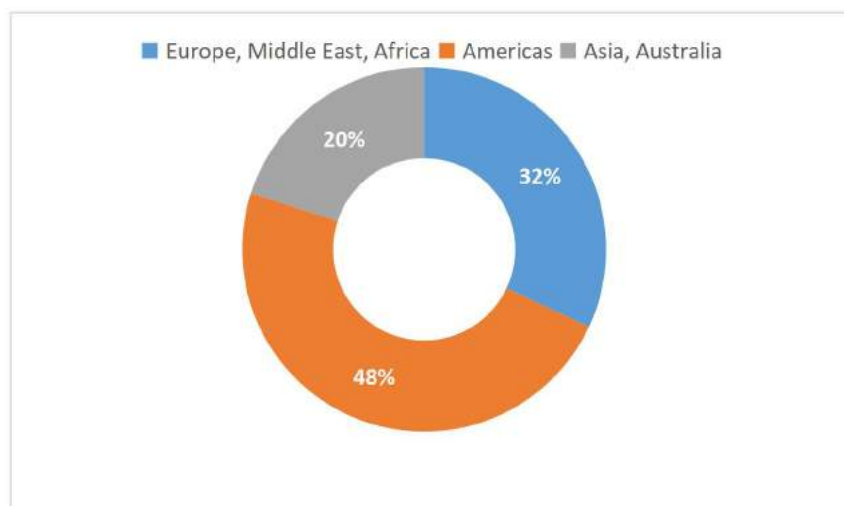


Figure 5: Revenue of Varian Medical Systems Inc. by region for the fiscal year 2020

Source: Own compilation, Adapted from Varian, 2020

After the spin off its imaging business in the fiscal year 2017, Varian has developed a new oncology focus strategy for the company, called ‘Intelligent Cancer Care’. Since the prognosis show that by the year 2030, the global cancer cases will grow to 25 million new cases every year, Varian remains committed to developing and delivering more efficient and advanced technologies with a multidisciplinary approach leveraging artificial intelligence to build a comprehensive oncology ecosystem with data-driven insights that help simplify workflows. Better personalised and accelerated care are the benefits that can be received by patients. With all the technology mentioned above, Varian works to innovate next-generation solutions to bring efficient and evidence-based care to all people around the globe (Varian, 2021c).

Customer Segments, Customer Relationship and Key Partners

When considering the customer segments graph from the Business Canvas Model, Varian provides cancer care products to university research and community hospitals, private and governmental institutions, healthcare agencies, physicians’ offices, medical oncology practices, radiotherapy centers and cancer care clinics worldwide. Varian offers superior services, such as field service personnel, oncology systems education, a network of service engineers and a network of regional distributors worldwide for their customer support. Varian generates service revenues and maintains long-term customer relationships by providing the customers with time-and-materials services, replacement part sales, post-warranty equipment service contracts, and software support contracts (Varian, 2020c; United States Securities and Exchange Commission, 2020b).

Another important factor of the Business Canvas Model is Key Partners. Varian has numerous crucial partnerships with leaders in certain segments of the radiation therapy and radiosurgery market. The strategic agreement with McKesson Corporation to supply its US oncology network and to collaborate and establish interoperability between Varian’s ARIA product and McKesson IT solutions. Varian has a partnership with Siemens AG, through which Varian represents Siemens’ diagnostic imaging products to radiation oncology clinics in the United States and agreed-upon countries, and Siemens represents Varian’s equipment and software products for radiotherapy and radiosurgery to its healthcare customers in agreed-upon countries (United States Securities and Exchange Commission, 2020b). The last example of Varian’s key partner is the partnership with Google Cloud AI Platform to create Artificial Intelligence (AI) models for organ segmentation. The segmented images are then used to create radiotherapy treatment plans that describe where and how much radiation needs to be exposed during the treatment. This is a labor-intensive process that can take a clinician hours per patient. This partnership enables innovation in cancer care using Google Cloud AI’s state-of-the-art technology (Varian, 2021b).

Strategic Priorities of Varian

Varian’s commitment to developing more advanced technology and their unique multidisciplinary approach put them in a good position to overcome the challenges, associated with cancer treatment. “Intelligent Cancer Care” framework, which Varian has developed harnessed the power of advanced technologies, like artificial intelligence, machine learning, and data analytics to ensure coordination and connectivity at every point of care. With the goal of becoming a global leader in multidisciplinary cancer care, Varian has four strategic enablers, part of its long-term development strategy, as follows (Varian, 2019):

1) Innovating in radiation therapy

Varian maintains their market leadership with over 50% market share in global radiation therapy market. Both of their new products Eclipse™ treatment planning system, for fast and precise advanced cancer care planning, and TrueBeam, Varian’s key radiotherapy solutions, were recognised as part of their innovation effort.

2) Leveraging artificial intelligence, machine learning, and cloud-based solutions
Ethos therapy, an innovative solution for adaptive therapy, is powered by artificial intelligence. This AI adoption enables the healthcare providers to use multimodality images and they can now better visualize changes to anatomy. Another substantial progress has also been made in the deployment of Noona, their software application for capturing patient-reported outcomes. Noona provides the data that allow clinicians to manage their cancer patients' symptoms.

3) Growing emerging businesses and technologies
In the fiscal year 2019, Varian accomplished the acquisition of CTSI and CyberHeart to address the growing global cancer burden and bridge the human capital skills gap. The acquisition of CTSI has made a significant contribution toward building a broad global data lake to power new technology-enabled services. Furthermore, Varian entered the VT (ventricular tachycardia) market space with the acquisition of CyberHeart. This acquisition gives Varian the capability to innovate in the area of cardiac diseases. The acquisitions of Austin, Texas-based Endocare and Hangzhou, China-based, Aicon, as well as the acquisition of Boston Scientific beads portfolio, are the first steps in creating a comprehensive interventional solutions platform leveraging Varian's unique software expertise. As a result of these acquisitions, Varian is now the first and only provider that offers an end-to-end solution, including both hardware and software, for the fast-growing interventional oncology market.

4) Improving operational, financial, and capital efficiency
Varian aims for a balance of growth, profitability and liquidity to ensure long-term growth and value creation. Investing in innovation will continue to be a core part of the growth strategy. Varian continues to make investment decisions based on the internal rate of return for the investment being greater than the cost of capital for the shareholders (Varian, 2019; Varian, 2021c).

7.4 The merger and acquisition deal details between Siemens Healthineers and Varian

When analysing such influential deals, many factors and aspects can be taken into consideration. For example, critical success factors, serving as objectives, could include deal characteristics, strategy development, future prognosis, post-merger integration, etc. (Wellner, 2019 a, p.67). In the following paragraphs, the aspects that will be discussed include the initial partnership, leading to the deal, the main objectives of the deal, divided into various categories and a SWOT analysis of the M&A. These aspects lead to making reliable future estimations of how the joined company is expected to develop.

The 'EnVision' Partnership and Its Development

As one of the greatest healthcare challenges nowadays, Covid-19 has presented 'a humanitarian crisis', creating unprecedented challenges for everyone around the globe. Not only have frontline healthcare workers been greatly affected, but also the MedTech industry has been a center of attention with growing demand for diagnostic tests, protective equipment and ventilators (Chadha et al., 2020). This increasing demand has affected decisions by MedTech companies to seek solutions for gaining a competitive advantage. History has shown that one of the most successful strategies is a merger and acquisition investment strategy, helping companies to grow during challenging times and emerge stronger together (Anoshchenko, 2021). This leads to one of the biggest M&A deals in the industry - between Siemens Healthineers and Varian Medical Systems and what led to it, which is the main objective which follows below.

From the beginning, this collaboration did not suddenly emerge as the announcement of the Merger deal on August 2, 2020, from Siemens' side. The mutual cooperation already started in 2012 as a partnership, called 'EnVision', aiming to streamline processes from stimulation to planning and treatment delivery in radiation oncology. This partnership represented the combination of the "Energy" of Varian's powerful delivery systems and treatment planning tools with the "Vision" of Siemens Healthineers' advanced imaging capabilities, resulting in energy and vision to help healthcare professionals detect, diagnose and treat cancer while paving the way for 'the future of cancer care'. What this partnership contributed to was realising connectivity to Varian's IT networks in order to integrate Siemens' discontinued linear accelerators, providing both companies with enhanced sales opportunities and a greater competitive advantage (Varian, 2021).

Following the timeline of the two companies' background stories, the next important milestone is on August 2, 2020. It represents the date when the partnership 'EnVision' eventually grew into an Acquisition announcement by Siemens Healthineers Holding I GmbH, a wholly owned subsidiary of Siemens Healthineers AG, presented by a merger agreement and a letter of support. According to the merger agreement, Falcon Sub Inc, which is an entity formed by Siemens Healthineers Holding for the sole purpose of effecting the acquisition, will be merged into Varian and Varian will become a wholly owned subsidiary of Siemens Healthineers. On the side of Siemens' part of the deal, the 'Guarantor' is Siemens Medical Solutions USA Inc., a Delaware company - a US operating subsidiary of Siemens Healthineers (United States Securities and Exchange Commission, 2020a).

On the other side, Siemens Healthineers, an 85% owned and fully consolidated subsidiary of Siemens AG, benefits further from the deal by reducing Siemens AG's effective control to 72% after the deal (Fitch Ratings, 2020).

After various regulatory clearances, confirmation and approval of all parties, including the European Commission and the resulting vote from Varian's holders of a majority of outstanding shares' Special meeting, the merger deal was closed on April 15, 2021, as an all-cash transaction, valued at 16.4 US \$, letting Siemens Healthineers acquire the shares of Varian for \$177.50 per share in cash. This represented a premium of approximately 42% to the 30-day volume-weighted average closing price of Varian's common stock as of July 31, 2020, the last trading day prior to the announcement of the transaction (Varian, 2020a).

Main Strategic Objectives of the Merger Deal

Having discussed the details around the Merger earlier in the text, an important question arises. 'Why?'. It leads to the strategic reasons behind that deal, the objectives that the two companies have set, or an answer to the equation 'How does one plus one add to three?'.

Starting with the factual background of the suggested deal from August 2, 2020, in Siemens Healthineers' official presentation, sent to Varian as the Merger plans, Siemens Healthineers have described the potential benefits not only for the two participants but on a global level. It follows the mutual strategy derivatives and the joined power synergies after the completion of the deal. The main strategies and compatibilities behind the deal are shown in Figure 6.



Figure 6: Deal potential synergies and major reasons for Merger
Source: Own compilation, Adapted from Siemens Healthineers AG, 2020

Cultural Fit and Shared values

Starting with the cultural fit aspect, both companies have essential shared values in common. These include not only common aspiration to help people live longer and healthier lives, but longevity in the industry - above 70 years for Varian and more than 120 years in Siemens' history. This mutual aspiration also contributes to their further shared purpose of driving innovation and helping healthcare personnel improve quality and provide broader access to needed care (Siemens Healthineers AG, 2020).

Combining Scales

Moving clockwise in Figure 6, the next important aspect for collaboration between the two companies is ‘Scale synergies’ or otherwise called - combining scales. As there is an expected high demand for cancer patients needing ongoing therapy all over the world, it is certainly beneficial for the companies to expand in the geographical sense. Together they leave a footprint in around 75 countries and they are realising an impactful combination of Varian’s 11,000 employees + 55,000 employees of Siemens Healthineers, resulting in 66,000 people sharing a joined purpose for the overall wellbeing. This makes an enormous impact since both companies have a strong positioning in their fields. More than 4 million patients are annually touched by Varian products and since Siemens Healthineers is a global leader in the medical devices industry, there are approximately 240,000 patients examined per hour using their products all over the world (Siemens Healthineers AG, 2020).

Innovation Synergies

Probably one of the most important factors that the companies took into consideration was Innovation synergies. Firstly, it would be beneficial to show the growth of the medical device technology industry, which is the main field of innovations and investments, especially for cancer and cardiovascular diagnosis and treatment. The medical technology industry has high growth estimations, proven by the growth of +6.3% between 2019 and 2020 in total revenues for the industry, resulting in 446 billion USD positive growth for the fourth consecutive year. Moreover, despite the disruption of COVID-19, the medical technology industry in the EU and the U.S. show a 4.6% growth in the number of employees from 2019 to 2020, resulting in overall 878,900 employees (EY, 2021). These positive industry trends contribute highly to the innovation investments synergy factor of the Merger deal, along with these facts:

- 1) There has been around 1.5 billion USD totally invested over the last 4 years in innovation, leading to the highest rates of Research and development (R&D) intensity in the industry. As both companies are strong in the innovation aspect of healthcare developments, the joined power brings over 1,000 Varian R&D engineers to over 9,000 Siemens Healthineers R&D employees. This has the potential to achieve some of the great technological ambitions, that the companies have set in their Strategy plans.
- 2) Another very important aspect of the joined innovation power of the Merger is the combining of more than 120 active clinical collaborations at Varian with the partnerships of Siemens Healthineers, including more than 90% of global top providers, mentioned in the Business Canvas Models of the two companies. This expansion of resources, and operational and sales networks gives them the opportunity to create a unique value creation (Siemens Healthineers AG, 2020).

Revenue Synergies

A further aspect of the reasons for this Merger deal is the Revenue synergies. Forecasts of Siemens Healthineers estimate steep growth over the next few years since there is high demand for their products and services and the overall healthcare industry is in a constant increase. However, the combination with Varian provides both vendors with stronger positioning in these high-growth markets. Entering another attractive market creates an unprecedented highly integrated portfolio for the global fight against cancer and is therefore expecting an increase in their revenue growth profile of more than 5% annually above Siemens Healthineers’ forecasts, effective immediately after closing the deal.

The deal is estimated to generate at least € 300 million of EBIT synergies per annum in the fiscal year 2025 and a further significant increase after, despite the disruption of the Covid-19 pandemic (Siemens Healthineers AG, 2020).

One step - Two Leaps Strategy

As can be seen from the equation ‘1+1=3’, the Merger also has another strategic motive behind it. But first of all, the placement of Varian into Siemens Healthineers’ Strategy, described in detail above, is very intriguing and ambitious. The first phase of its ‘Strategy 2025’, called ‘Reinforcing Phase’, Siemens Healthineers already completed at the end of the fiscal year 2020 by successfully implementing its IPO and launching important innovations, such as AI-Rad Companions - AI-powered augmented workflow solutions, helping reduce the burden of repetitive tasks. Siemens

Healthineers then entered their second phase towards the Market leadership 2025 Plan, which is called the 'Upgrading phase', providing the company with profitable growth. During this phase, Siemens Healthineers acquired the companies Corindus and ECG Management Consulting and with the perfectly aligned to the phase Merger and acquisition process with Varian, they are strengthening their position as 'a holistic partner in healthcare', growing in existing markets, increasing in familiar fields and making new markets (Siemens Healthineers, 2021c).

Having finished the second phase of their progress follows the third 'New Ambition Phase'. In this phase, Varian is integrated as a very important part to create unique capabilities in the overall medical industry development - to be 'pioneering breakthrough' by making 'One Step in Two Leaps'. This is evaluated as the biggest motivation behind this deal and it represents the '+ 1' of our equation. It highlights the combination of the two companies by benefitting from each other's greatest strengths. On the one side, the two companies realize an advancement in the cancer care field by Varian cooperating with Siemens Healthineers, expanding their portfolio and bringing cancer care to the next level with cutting-edge intelligent therapy and a comprehensive digital ecosystem. On the other side, Siemens Healthineers realizes a 'jump' in impact, defined by shaping the future of healthcare together with Varian, as merging their synergies and realizing strong positioning and market growth. More specifically, with Varian, Siemens Healthineers will leverage AI-assisted analytics to advance the development and delivery of data-driven precision care and redefine cancer diagnosis, care delivery, and post-treatment survivorship overall (Stephens, 2021; Siemens Healthineers AG, 2020).

From the analysis of the 'One Step. Two Leaps' motivation and potential strategic impacts on the companies follow their involvement into the already mentioned 'New Ambition Phase'.

In the heart of this phase lay potential unique capabilities, which are digitally very innovative for the industry and would have an exponential impact on healthcare in general. These capabilities include 'Patient Twinning', 'Precision therapy', and 'Digital data and artificial intelligence (AI)' concepts, set up as the main goals for the next period (Siemens Healthineers, 2021c).

Hosting the Siemens Healthineers Shape 22 Keynote, Dr. Bernd Montag (a chief executive officer of Siemens Healthineers since 2015) presented in detail the results and joined purposes of the accomplished Merger and acquisition process with Varian as a perspective on the year 2022. He highlighted the biggest and most important goal of the joint companies. 'Pioneer breakthrough, For everyone, Everywhere'. Therefore, to achieve this aim, the three aspects of the 'New Ambition Phase' come in handy and are the foundation of the new company.

Starting with the first competence required for fulfilling future objectives - The Patient twinning, it is the first pillar, driving ambitious innovations. It is envisioned by building a Patient Twin, representing each patient's full digital copy, based on overall history, health data, molecular diagnostics, tests, lab results, targeted scans and it supports clinical decision making, as well as helps predict outcomes of procedures and success respectively in recovery times. It is refining imaging and diagnostics and combining the two for personalisation of diagnosis and treatment, therapy selection, guidance, recovery and managing health overall. Since it is a highly digitalized technology, it would be possible to remotely follow up on patients' conditions and keep in constant touch with them.

The second competency is Precision therapy, which is presented as the key to fighting the most prevalent diseases in today's world including cancer, cardiovascular and neurovascular diseases. This highly innovative technology is designed to make therapies and treatments more accurate and precise - for example when considering cancer cases, thanks to this technology it would be possible to exactly target tumors only and spare the surrounding healthy tissue in minimally invasive procedures, leading to easier and faster recovery of the patients. Such interventions are still risky nowadays and robotics can highly influence the field and be out of unimaginable importance for the precise realisation of interventions.

The third critical competence is digitalisation or digital data and Artificial intelligence (AI). This aspect connects the two competencies before and in practice, realize them, since the future of innovations, especially in the medical field, lies in fully embracing technological capabilities and successful digitalization. This factor brings to the forefront the linkage between diagnosis and treatment and guiding treatment. The usage of AI would provide increased efficiency, and fewer errors and it could have a major role in making the patients’ care better and more fulfilled (Siemens Healthineers Shape 22 Keynote, 2021).

Hence, after the Merger between the two companies (now the newly joined company) is able to take full advantage of their capabilities and fulfill the ‘New Ambition Phase’ together. Using Varian’s software, technological expertise, software development capabilities, and Siemens Healthineers’ medical devices technologies, such as advanced screening devices, opens the door for a new era, combining talent and capabilities on a high level, thriving innovations. Furthermore, a SWOT analysis was executed of the deal below (Figure 7):

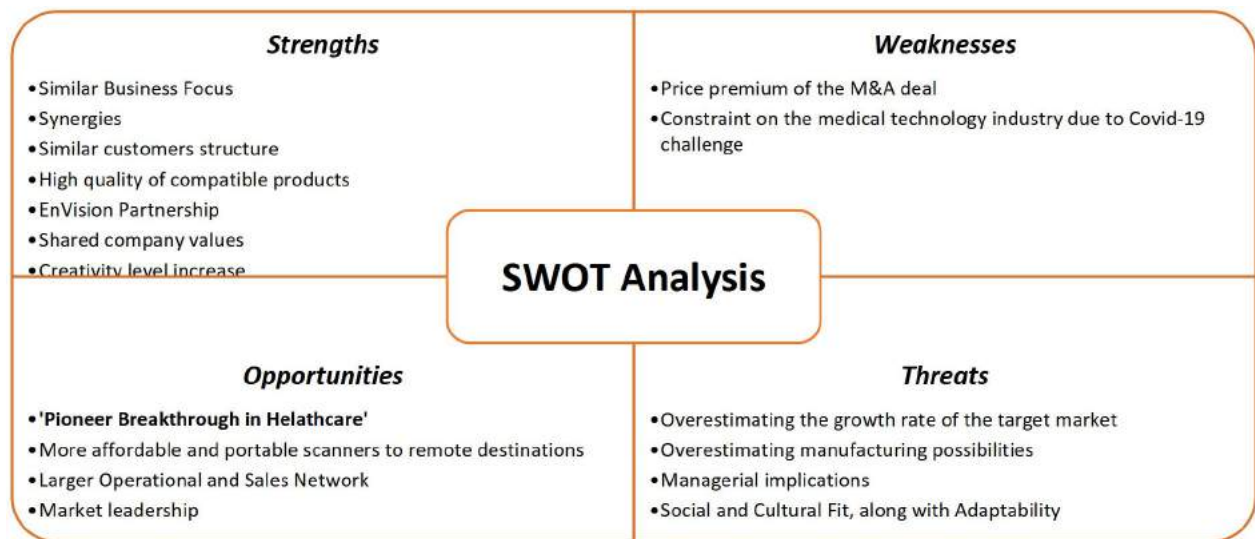


Figure 7: Deal potential synergies and major reasons for Merger; own compilation

Based on Leigh’s SWOT analysis (2009), the merger deal has been analysed with the main bullet points emphasizing possibilities regarding the future of the two companies, with regard to opportunities and threats of the merger, as well as strengths and weaknesses at the time of signing. As it can be seen from the Figure, the strengths in the substance outweigh the weaknesses when entering the deal, with the biggest opportunity of improving healthcare and making it available to people with no access. But neither factor should be excluded. For example, from the SWOT analysis, made by Wellner, we can see how important adaptability is, especially at the beginning of such a collaboration (Okl and Wellner, 2019). Despite this particular deal is a special case, due to the fact that Varian remains with its existing operations characteristics and there is less cultural adaptability, due to different not overlapping locations. That decreases the need for very often high threats, along with expenses, considering different circumstances (Wellner and Intelmann, 2017).

7.5 Future estimations and Long-term vision of the Joined company

Having analyzed the strategic background of the Merger and Acquisition between Siemens Healthineers and Varian in detail , the newly joined team has also set up not only potential strategies for realizing the combination but also has set up a plan for future actions in order to continue with the ‘New Ambition Phase’, conclude it and gain Market leadership in the year 2025 as one.

Chris Toth, CEO of Varian, now a Siemens Healthineers company also contributed to the Siemens Healthineers Shape 22 Keynote by highlighting these future perspectives and how via successful mutual collaboration between the two companies they can achieve their respective objectives.

As previously mentioned, the main objective is to provide pioneering breakthrough in healthcare - for everyone, everywhere. That also includes Intelligent Cancer care as a major perspective effect of the Merger, combining Imaging, laboratory and robotics of Siemens Healthineers, Digital data and AI and Cancer care of Varian, the joint team can achieve better care and outcomes for patients and more lightness on physicians. In order to realize this motive, the company has differentiated four main focus areas to deliver (Siemens Healthineers Shape 22 Keynote, 2021):

1) Accelerating the path to treatment

One Goal or a Challenge that the company set themselves is reducing the time from diagnosis to treatment from 2 weeks to 2 hours, by reducing manual process steps and introducing more authorized solutions. Early detection in most cases is incredibly crucial for the effectiveness of the treatment so accelerating this process can be of very high importance.

2) Development of an ecosystem based on data-driven insights

In order to provide a better more effective workflow, now after the deal it is possible to seamlessly connect Siemens Healthineers' imaging solutions to Varian's ecosystem. Using the AI system could deliver more precision in the scanning using different contours of various anatomical structures and this could be beneficial for localizing organs at risk and guiding treatment plans.

3) Focus on more personalized care

By developing the Patient Twinning, this integration of data and using data from various sources brings individualization of the consultations, diagnosis, treatment, and overall care of the patient. By making use of Artificial Intelligence software and professional expertise, patients receive more detailed individual current and future health status.

4) Improve access to advanced care

Today there are roughly 3 to 4 billion people without sufficient access to healthcare and treatment. Using AI, data analytics software from Varian, and already automatized testing devices from Siemens Healthineers, the joined efforts can expand into further areas, starting with Magnetom Free Star, which is a cost-effective magnetic resonance imaging scanner, that can be used by untrained personnel or Atellica CI1900 System, which makes testing possible for mid-to-lower volumes processing laboratories, providing accessibility to patients all over the world.

In order to achieve these goals as fast as possible, the new company is expecting to increase its Research and development by investing roughly 2.2 billion USD over the next 5 years, keeping in mind the Final Goal → of offering patients the highest level of care at reduced costs, in a less time-consuming manner and more accessibility to enable better final outcomes for people's overall wellbeing (Siemens Healthineers Shape 22 Keynote, 2021).

Furthermore, as Siemens Healthineers has now entered the third phase of its Strategy 2025 – the Upgrading phase, the company has set its cultural, strategic, and financial goals. It predicts growth in revenues of 6 to 8% annually for the period 2023-2025. Siemens Healthineers is going to focus on the three capabilities within the New Ambition goals, including 'patient twinning', 'precision therapy', and 'digital and artificial intelligence'. These goals would enable people to fight the most threatening diseases so far, make usage and operations of most devices more effective, and provide access to affordable healthcare to people with no access to it currently (Siemens Healthineers, 2021f).

Apart from the set up medical innovations' goals, Siemens Healthineers has also set up clear frameworks and guidelines for this period with the regard to ESC compliance. The company has broad targets to support sustainability, strengthen activities for decarbonization along the value chain and promote equality, diversity and inclusion.

Considering the financial future perspectives of the company, Siemens Healthineers in combination with Varian has changed its initial synergy targets to EUR 350 million by 2025. Furthermore, the company is estimating an increase in innovation via investing 8 to 9% of revenues in Research and

development, as well as fostering profitability and strengthening its financial ‘soundness’, focusing on recurring revenue streams, which are about 55% of total revenue (Siemens Healthineers, 2021f).

8. Managerial Implications

This study offers insights into market developments and merger deal strategy mainly, which contributions to managerial practice. When trying to analyse a similar M&A based on strategic motivations, assessing the risks can be challenging. Therefore, an analysis, presented in the form of a case study can present insightful input into what is important to be considered as a key performance indicator and how to find the suitability of the market operate in. The acquiring firms in the medical technology industry can integrate these findings into criteria for future use and the strategic insights of the deal can be useful in order to assess the return of the deal in the long term for the acquiring firm in terms of innovation breakthroughs mainly.

9. Conclusion

Following the framework during the length of this paper, first an analysis was made of the two participant companies of the Merger - Siemens Healthineers and Varian Medical Systems, using the Business Canvas Model, focusing each on several main aspects of the model and evaluating them in-depth. The Business Canvas Model further contributed to the main objective of this paper - a strategic analysis describing the way the companies operate, create, deliver and capture value (Osterwalder, 2004).

A very important factor in the analysis of the companies was the Strategies of both Siemens Healthineers and Varian since they both had visions for their individual companies in terms of impact, but the realization of what they could achieve together led to something bigger - the combination of the two companies adding an added-value as strategical impact in their future goals and importance for the global healthcare industry. Despite the companies being in a partnership since 2012 in EnVision, they saw the opportunity for further impacts and growth. This leads to the meaning behind the equation ‘one plus one equals three’, which is the heart of this report and of the deal. It emphasizes the difference that the two companies can make not only in their own development but for the whole world and healthcare industry.

Siemens Healthineers is indeed interested in increasing its portfolio of imaging, laboratory diagnostics, artificial intelligence, and treatment and Varian has the opportunity to accelerate its mission to reduce uncertainty for cancer patients and increase the level of survivorship. But together they have the possibility of radically changing the world in many aspects. Cloning people into their own digital twin, constant monitoring of patients’ health and realizing precision therapy are incredibly advanced innovations, and achieving them would be the ‘+1’, the added value to the world, saving more lives, to offering people a higher level of care (Siemens Healthineers Shape 2022 Keynote, 2021).

Moreover, all factors considered have major perspectives on the deal since the times we live in have drastically changed healthcare and the combination these two companies provide is very intriguing and promising for the future of healthcare. In their report on healthcare industry change, Deloitte systemizes major global issues of healthcare, starting with digital transformation and interoperable data (Deloitte, 2021); (Schivone and Ferretti, 2021). Indeed, this challenge nowadays can be overcome with the Goals that the joined forces plan to fulfill. The fact that the industries that the joined company is operating in and dominating, brings forward also possibilities of profits gains and potential for unique value creation, along with numerous further opportunities for market and portfolio expansions, as well as technological innovation and advancement.

Based on the hypothesis of the success of this merger, there are promising facts as to why it has been a success and an exception from the original statistics of 70% failure in the medical device industry M&As (Early, 2004). For the first quarter of 2022, revenues for Siemens Healthineers rose 31% to almost 5.1 billion euros, which are benefiting from the Varian segment contributions. The new integrated segment into the Siemens Healthineers company has a promising profitable start with revenue of EUR 750 million only for the first quarter of the fiscal year 2022, half of which was

obtained from the Americas region (Siemens Healthineers, 2022). Therefore, based on the good results so far, Siemens Healthineers has defined clearer goals for the Varian segment. That includes an increase in their synergies to an expected EUR 350 million by 2025, as well as an expected revenue increase in the Imaging, Diagnostics, and Advanced therapies segments between 5 to 8 percent, and Varian's fully synergized plan to show a revenue growth between 9 and 12 percent by the fiscal year 2025 (Siemens Healthineers, 2021f).

This implies promising expectations for the predicted future of the joined company, implying the success of this merger transaction. But even though profits are estimated to a relatively reliable level, the innovation levels increase is still to come with the company having ambitious goals set up for their next phase towards market leadership.

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Cultural Barriers Limiting Professional African Women Leadership in South African Higher Education

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Keywords

Africa; cultural barriers; detrimental cultural practices; gender inequality; higher education; black African women leaders

Abstract

Black African professional women in leadership positions often experience barriers that hinder their optimal organisational participation and career growth. This paper surfaces some of the hidden cultural barriers that are still experienced by African professional women in higher education leadership, the systems that perpetuate it, and how these limiting cultural practices can be managed. Data were gathered using a qualitative approach; interviews (face-to-face) were carried out with 10 purposively selected African women holding senior leadership positions in higher education, and the data were inductively organised into themes. Participant narratives gave insight into what constitutes deeply rooted cultural practices that work against women's career progress in leadership positions, which are mainly: cultural upbringing, patriarchy, gender discrimination, and lack of support from family. This study highlights prevailing practices that continue to act as retrogressive forces in the advancement of black African women into leadership positions in higher education. Women are capable of positively transforming and adding value to organisations and society. Ending cultural practices that inhibit women will not only affect women as individuals positively, it will also enhance the overall wellbeing of societies. The solution to cultural inhibition relies on multiple levels, from government to institutional governance and management, and requires creating awareness and taking positive action in co-operation with societal leaders.

1. Introduction

Researchers and policymakers have noted that the actualisation of women's aspirations to positions of leadership worldwide continue to be challenged by notions anchored in a patriarchal philosophy. Some powerful cultural and social norms that present women as unequal to men are severely restricting the ability of women to optimally engage both economically and socially (Unilever, 2017). The Advocates for Human Rights (2018) paints a deeply disturbing picture of the status accorded the girl child by society:

“Historically, the girl child has been disadvantaged. Daily, girls are traded, bought, and sold across national borders as commodities to be put to use as prostitutes or slaves, or merely to be sold again at a profit. Many girls are even victimized before birth, as technology and greater access to medicine have given rise to prenatal sex selection and selective abortion based on sex. Girls continue to face the threat of sexual harassment and abuse in workplaces and schools. Violence against the girl child is perpetrated on every continent, wielded by every social and economic class, and sanctioned to varying degrees by every form of government, every major religion, and every kind of communal or familial structure. There is no place of complete refuge for the girl child,

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only promises of stronger legal regimes and more robust non-governmental assistance.”

Detrimental cultural practices against women and girls, according to The Advocates for Human Rights (2018), continue to be defended, with proponents citing tradition and culture, male supremacy, and norms that are accepted as religion and supported by men who hold patriarchal biases. Such practices give rise to gender inequality, skewed power relations between women and men, and rigid gender roles that place women on a lower status in society, thereby minimising their potential opportunities in social, economic, and political life (The International Planned Parenthood Federation [IPPF], 2015). While these detrimental practices differ from culture to culture, one thing remains common: they keep women in subordinate roles.

In many countries, gender discrimination is still woven through legal and social norms (United Nations [UN], 2016). Half the workforce of nearly every country around the world is made up of women (Fetterolf, 2017), but without sufficient representativity at the highest levels. In addition, the increased participation of women at all levels of organisational hierarchy is needed if the issue of labour shortages is to be addressed (Ledbetter, 2014). It is indeed time to change the status quo and appoint more women to positions of influence and leadership (Ledbetter, 2014).

The values and beliefs held by members of a community are enacted through their traditional and cultural practices. Every social group in the world has specific traditional and cultural practices and beliefs, some of which are beneficial and some are harmful (Maluleke, 2012; Office of the UN High Commissioner for Human Rights [OHCHR], 1979). Some harmful practices prevent women and girls from reaching their maximum potential and contributing to their country's economic development (Banda & Atansah, 2016). These traditional practices, upheld across generations, come about as a product of social norms upholding cultural ideas about gender roles and social relations (Wadesango, Rembe, & Chabaya, 2011). Despite their detrimental nature and consistent violation of both national and international human rights laws, such practices continue to be upheld because they are neither questioned nor challenged. They are often condoned as being part of established tradition and social norms and, as such, have reached a level of acceptability (Maluleke, 2012; OHCHR, 1995). These practices are often the manifestation of hidden or unconscious biases, which only come to the fore when questioned (Bohnet, 2016).

Ledbetter (2014), in her global review of women in the workforce and leadership, highlighted several practices of a discriminatory nature, amongst which cultural factors stand out as the strongest barriers that hinder women from participating in leadership positions (Nyamweya, Ogwora, & Nyamwange, 2018). It is declared that neither culture nor tradition should be used to justify detrimental practices that militate against the leadership of women. Women's attitude to such barriers further complicates the issue. Women and girls have come to accept these detrimental practices as their lot, believing that it is acceptable that such practices be perpetrated against them. It is vital that organisations respond to and facilitate women's determination to succeed if organisations want to benefit from the widely acknowledged contribution of women's energy and capabilities (Jaffe, 2018).

In this regard, the work of the UN is commendable. Within the framework of the UN Sustainable Development Goals (SDGs), adopted in September 2015, the international agenda took a twist from its predecessor, the Millennium Development Goals, by having a separate goal that seeks to achieve gender equality and to empower all women and girls — SDG 5, which targets, among other issues, putting an end to all forms of discrimination against women and girls everywhere, and to eliminate all detrimental practices. The purpose of this study was therefore to identify and interrogate prevalent beliefs that are detrimental to the social standing and career advancement of women, with a focus on women in higher education.

1.1. Problem Statement

In the media and scientific socio-cultural literature, there is evidently an assumption, and indeed even a celebration, that women have succeeded in achieving equity in the workplace, when, in reality, that

is not the case (Froehlicher, Knuckles Griek, Nematzadeh, Hall, & Stovall, 2021). Societal expectations of women and girls are still limiting their opportunities in social, economic, and political life (Unilever, 2017), and women are still underrepresented, particularly in the top echelons of most organisations (Hackston, 2020). Around the world and in many cultures, it is rare for a woman to be in a leadership position, because there are stereotypes that need to be overcome along the way, most of which concern the woman's gender (Moriarty, 2019). The problem that the present study addressed was: While the world is rapidly changing, seeing an increasingly globalised economy, which has achieved significant advances in legislation, technology, and communication, the ideal of gender equity remains out of reach for most women and girls. Institutions of higher learning are no exception. Many detrimental cultural and traditional practices, as well as mindsets, still exist as barriers that continue to influence the ability of women to actively participate in and advance up the organisational ladder (Unilever, 2017), even in faculty ranks. Many of these practices fail to make headlines and policy memorandums of governments, because the practices are localised; their occurrence seldom transcends district- or country borders (Banda & Atansah, 2016). Although specialised agencies of both the UN and other human rights bodies, as early as the 1950s, began to focus on detrimental traditional and cultural practices affecting women (OHCHR, 1979), such practices have still not been given due recognition. Rather, whatever action, if any, to try and bring about any substantial change has been very slow and rather superficial. Blind adherence to these cultural practices, coupled with the apparent inaction of several governments in as far as these traditions and customs are concerned, has perpetuated large-scale discrimination against women.

The silence that shrouds these detrimental cultural practices, together with prevailing beliefs that the customs are in women's best interests, has made the playing field uneven. Of the many barriers that exist that prevent women from reaching top positions in organisations, this paper examines the cultural issues (notable beliefs, stereotypes, and values) that have created — and continue to feed — biased perceptions regarding women's ability to be effective leaders. Women leaders, particularly those in institutions of higher learning, can accomplish and exert much influence, given that universities are economic engines and are considered hubs of innovation and entrepreneurship (Addie, 2017). Blocking women's career path to leadership in these critical areas does not benefit society. Therefore, it is critical to unearth detrimental cultural practices, name them, and advocate for the development of a research agenda that places such barriers to women leadership at the centre of policy and action in universities.

1.2. Research Questions (RQs) and Research Objectives (ROs)

Against this background, this study addressed the following research questions:

RQ1: What are the cultural practices that militate against women assuming top leadership positions in institutions of higher education, despite the enforcement of employment equity?

RQ2: How can these hindering cultural practices be addressed while, at the same time, respecting the cultural identities of the perpetrator communities?

The ROs linked to the RQs were:

RO1: To explore the existing cultural practices that militate against women assuming top leadership positions in institutions of higher education, despite the enforcement of employment equity; and

RO2: To suggest possible ways of addressing these hindrances to women's progression to top leadership positions.

The next sections present the methodology, method of data collection and analysis, the findings, and, finally, the conclusion, and managerial implications and recommendations.

1.3. Methodology

The present study was qualitative, and an interpretivist paradigm was followed, which assumes that social reality is not singular or objective but, instead, is shaped by human experiences and social contexts (INTgrty, 2016). The researchers therefore had to interpret and make sense of the experiences of the participants. The target population for this research was black African professional women in leadership positions at a selected South African higher education institution. A sample of ten women

in positions of leadership, who originated from different African countries, were purposively selected, i.e. using a non-probability sampling strategy.

1.3.1. Data Collection

The data for the study were obtained in 2020, before COVID-19 lockdowns were implemented; therefore, it was possible to conduct face-to-face interviews. Data were collected using open-ended questions to allow the women to freely discuss inhibiting cultural practices in their societies that they considered detrimental to their career progress, particularly towards leadership positions. The duration of the interviews was approximately 30 minutes each. Consent to conduct and audio-record the interview was obtained in writing from each participant (*cf.* Creswell, 2007). The inclusion criteria were as follows: participants had to be black African women occupying a middle- or senior management position in higher education. The researcher purposively selected women from different cultural backgrounds. African countries whose cultures were represented in this study were: South Africa, Lesotho, Zambia, Nigeria, Malawi, and Zimbabwe, but the participants were resident in South Africa. The participants' biographical information remains confidential, in compliance with the South African Protection of Personal Information (POPI) Act (SA Government Gazette, 2013). Personal identifiers of the participants were removed in the reporting, to ensure participants' anonymity (*cf.* Myers, 2009).

The interview questions focused on gaining insights in order to answer the research questions, specifically the cultural barriers and systems that prevent women from participating in positions of leadership; the origins of these barriers, from birth to adulthood; and, finally, possible ways in which these barriers can be addressed to enable black African women to fully participate in leadership.

The same interview schedule was used for all participants, ensuring that all would be exposed to the same set of questions, i.e., as mentioned by Seakamela (2011), "so that their views and perceptions can be measured against the same instrument" (p. 250). The sample size was limited at 10, as data saturation had been reached (*cf.* Saunders, Sim, Kingstone, Baker, Waterfield, Bartlam, Burroughs, & Jinks, 2017).

1.3.2. Data Analysis

Analysis commenced with the researchers personally transcribing each of the recorded interviews verbatim, in order to become deeply immersed in the data. The researchers then repeatedly and closely read the texts, creating familiarity with the contents (*cf.* Thomas, 2003). Qualitative data analysis was employed, whereby coding was used to identify themes in the transcribed interview texts, as recommended by Strauss and Corbin (1990) and Miles and Huberman (1994).

The main themes that emerged were: cultural upbringing, patriarchy, gender discrimination, and lack of support from family. These findings are discussed with supporting verbatim quotes and related extant literature.

The next section provides an overview of the literature in this domain.

2. Literature Review

The review highlights extant literature on women in leadership, followed by a description of role congruity theory, in which this study is embedded, and definitions of culture.

2.1. Women in organisational leadership

More women in organisational leadership means that more diversified skills and experiences presented at the decision-making table, which enables groups or divisions to be more capable of weathering problems and issues in a better way, as well as to quickly identify innovative solutions (Deloitte, 2017; Williamson & Wilkie, n.d.). Having more women in leadership leads to a wider lens on strategic thinking. Women have ideas, information, and opinions that can provide constructive ways to improve tasks and organisations. They provide diverse business perspectives when making decisions, and they approach risk in a different manner to their male counterparts, which, in turn, leads to improved performance and greater competitive advantage (McKinsey & Company, 2010).

Women create an economic engine when they work and lead (Organisation for Economic Co-operation and Development [OECD], 2008), and their contribution has significantly raised the GDP of several countries around the globe (Anon, 2014; Aguirre, Hoteit, Rupp, & Sabbagh, 2012). Women are critical agents for enabling meaningful change in workplaces, and by excluding them from the top echelons of organisational hierarchy, organisations are losing out on profits and competitive advantage (Taneja, Pryor, & Oyler, 2012). The governance of organisations, communities, and nations would be more efficient (Mizrahi & Fraser-Moleketi, 2015), yet despite the social and economic advantages of involving women, they are still largely excluded from the most powerful corporate positions (Miller & Vagins, 2018), mostly due to inhibiting ethnical cultural reasons, and these remain as barriers that prevent women from navigating in their career lives and taking up leadership positions.

2.2. The role congruity theory

Role congruity theory originates from social role theory, which describes the dissimilar social positions of men and women and how these create differing gender roles (Eagly, Wood, & Diekmann, 2000). Role congruity theory, developed by Eagly and Karau (2002), proposes that the perceived incongruity between the female gender role and leadership roles leads to two forms of prejudice: (1) perceiving women less favourably than men as potential occupants of leadership roles and (2) evaluating behaviour that fulfils the prescriptions of a leader role less favourably when it is enacted by a woman. The theory provides a theoretical foundation for understanding the dynamics and diverse assessments of women and men in managerial positions. It explains the reason for the low number of women in top-level management, considering a perceived incongruity between the attributes of a strong leader and attributes assigned to women's gender roles (IGI Global, n.d.). As a result, attitudes are less positive towards female leaders and potential leaders than those who are male. Other consequences are that it is more difficult for women to become leaders and to achieve success in leadership roles. Evidence from varied research paradigms substantiates these consequences, especially in situations that heighten perceptions of incongruity between the female gender role and leadership roles (Eagly & Karau, 2002).

2.3 Ethnic culture

An ethnic culture is what is generally accepted as a way of life for a particular group of people, and includes their behaviours, beliefs, values, and the symbols they accept, usually without question. Every social grouping in the world has specific traditional cultural practices and beliefs (Ntuli, 2019). The culture and its norms and beliefs are passed along by communication and imitation from one generation to the next (Idang, 2015). While cultures safeguard the identities of black Africans (Birch-Jeffrey, 2019), some cultural practices may hamper advancement of the continent by weighing down women and girls (Banda & Atansah, 2016). Cultural expectations influence the beliefs, behaviours, and experiences of people, in both society and organisations, regarding the expectations they have of women (Longman, Daniels, Bray, & Liddell, 2018).

2.4 Cultural practices militating against the advancement of women to leadership

Previous research has identified several cultural barriers that may contribute to the gender gap in leadership. Amongst the most prominent cultural barriers are socialisation of gender norms (Enaifoghe, 2018), discriminatory treatment of the girl child by society (Okunola, 2020), boy-child preference (Rossi & Rouanet, 2015), patriarchy (Wood, 2019), the role of family in the socialisation of women (Eagle, 1988), and embedded traditional cultural beliefs (Ssenyonjo, 2007).

Certain cultural beliefs stand as barriers that make it near impossible for women to advance to positions of leadership in political, social, and religious spheres (Lwanga, 2008; O'Neil & Domingo, 2016). These beliefs obstruct women from participation in any area in the public domain, as they are seen as a challenge to the established traditional order. Across Africa, beliefs regarding domestic roles and women not being suited to top leadership positions are deeply entrenched. The cultural domestic burdens that women are expected bear further reinforce perceptions that women cannot perform effectively in leadership (Oteino, 2012; Pew Research Centre, 2015). Ndungo, as far back as 2006, concluded:

“Cultural perceptions undermine women’s abilities, and portray women as ineffective, irresponsible and incompetent, and people who lack ambition, never to be taken seriously”. Such perceptions, which are mere creations of traditional norms and customs, act against women, and because of their socialisation, women simply accept or become resigned to the notion that they are incapable of operating in the so-called ‘male territories’.

Some women internalise the notion that they are less capable of taking on leadership roles, and they then cease to identify with potential leadership positions, which ultimately deflates their motivation and lowers their performance (Fogliati & Bussey, 2013). Women themselves may fuel barriers to their advancement by responding in unhelpful or destructive ways, such as avoiding the career altogether (Schwanke, 2013). Furthermore, women fear being associated with stereotypes of women in leadership, a phenomenon known as ‘stereotype threat’ (Steele, 1997; Schmader & Hall, 2014).

Smith (1984) noted that: “many women have to a certain degree internalized the attitudes and role expectations about women, to the extent that they have learnt to fit neatly into the stereotypes” (p. 58). This can be a serious handicap in the development of their individual personalities, their abilities, and their career potential. Sebakwane (1994), Chabaya, Rembe, and Wadesango (2009), and Mapuranga and Chikumbu (2015) note that gender socialisation should be practised in such a way as not to teach prejudice against the opposite sex, but to allow the child to grow ‘naturally’ and fit into her assigned role and to make her look forward to her allotted task with pleasure. It should occur in such a way that both men and women freely accept it. The existent problematic beliefs and perceptions are even held by some women. In a study carried out in the Southern African Development Community (SADC), it was found that women find it difficult to change their mindset for fear of ostracization (Sadie, 2005; Bernstein, Kattau, & Ndinda, 2009).

2.4.1 Socialisation according to gendered norms

Socialisation according to gendered norms across the world bears some of the blame for the way women are viewed socially. According to Rosen (2000), it is the society that assigns to its members gender roles that are socially constructed, as well as their activities, behaviours, and other attributes. Gender stereotyping is underestimated as a factor contributing to the slow advancement of women to high-level management positions (Jonsen, Maznevski, & Schneider, 2010). Due to stereotyping, women and men tend to develop their skill sets and occupational skills based on what is culturally considered appropriate for each gender. These ascribed gender roles, while limiting for both sexes (IPPF, 2015), ultimately lead to more discrimination being perpetrated against women. They are expected to conform to the way they were socialised, and when they deviate, they invite the ire of society, as they are regarded as defying their assigned gender role. This particular socialisation seems prevalent across the globe (Blackstone, 2003).

In several communities across Africa, women are expected to take on a variety of specific roles for which they are not paid, such as being wives, mothers, caretakers, as well as other — sometimes very onerous — duties (Mbalcogu, in Nyamweya, Ogwora, & Nyamwange, 2018; Hoh, 2009). Girls are socialised from childhood regarding the importance of such roles, starting from an early age, when they are indoctrinated to believe that men and women have different gender roles to play in society. These children will then go on to perpetuate these damaging and restrictive roles in adulthood (UN Office on Drugs and Crime, 2018).

This socialisation is evident in the toys assigned to genders — boys get toy vehicles, action figures, and construction equipment, and girls get dolls and toy kitchen sets. The society thus constructs ‘the ideal woman’, which becomes ingrained in the woman, to her great disadvantage later in life (Saurombe & Du Plessis, 2018), particularly evident in her lack of participation in leadership. The burden of care work placed upon women further impinges on her opportunities in the field of work, and prevents her from realising her maximum potential (IPPF, 2015).

2.4.1.1 Discriminatory treatment of the girl child

Deeply entrenched at the core of detrimental cultural practices is a mind-set that discriminates and devalues girls, beginning from the day the girl is born and continuing to manifest strongly in her socialisation at the household level — ultimately justifying underinvestment in the girl child (Banda & Atansah, 2016). According to an Asian proverb (OHCHR, 1979):

"Bringing up girls is like watering the neighbour's garden."

Girls are taught to believe that women are inferior to men, that their rightful place is in the home, and that they are only to be seen and have to remain silent (Dorsey, 1996). It is instilled in them that their wellbeing and ultimate success is dependent upon acting in certain stereotypical ways, such as being timid, soft-spoken, and compliant — behaviours utterly unfit for the boardroom — and relation-oriented. The expectation of these behaviours is further reinforced through the media, family, and social messages. Women do not deliberately act in ways that tend to sabotage themselves, they simply act in consistence with their childhood learning experiences (Frankel, 2004). The resultant effect of all this is society's internalisation of the low value attributed to the girl child. The socialisation of the girl child puts her on the wrong footing, and it is to blame for her perceived inability to successfully fulfil leadership roles in later life.

2.4.1.2 Boy-child preference

The preference for a boy child is prevalent around the world, which means that a girl child is at a disadvantage from birth. The preference determines the quantity as well as quality of parental care and of investment in the child's development and wellbeing (OHCHR, 1979). The preference for a son is a cultural practice that is embedded in the value systems of most societies, and it guides the behaviour of family members. This preference plays a pivotal role in the resultant low valuation and neglect of female children. Giving birth to a son is welcomed with celebration in many cultures, as he is considered an asset, whereas a girl is seen as a liability, an impending economic drain.

Through the World Health Organization (WHO, 2011), the OHCHR, the UN Population Fund (UNFPA), UNICEF, UN Women, and the WHO issued an interagency statement in which they denounced the preference for a son, stating that sex selection in favour of boys is a symptom of pervasive social, cultural, political, and economic injustices against women, and that it is a violation of women's human rights. While many domestic, regional, and international measures have been put in place to address the detrimental practice of differentiating the treatment of the sexes from infancy, the efficacy of such mechanisms has been seriously compromised because many of these practices and beliefs are grounded in widely accepted cultural and religious norms (The Advocates for Human Rights, 2018).

A firmly rooted cultural practice among many nations is son preference, which is a manifestation of gender discrimination that is deeply entrenched, as well as a symptom of a pervasive social, cultural, political and economic injustice system against women. It has, for a long time, avoided international and national scrutiny because it is considered a cultural practice that is worthy of tolerance and respect. In essence, from birth to adulthood, society has already defined the girl child: 'she is a nobody' (Saurombe & Du Plessis, 2018).

2.5 Patriarchy

A traditional patriarchal value system in many African societies typically favours power over women allows men to establish "male control and dominance", not only in relationships, but also in the beliefs and structures of society (Andt, 2002), which tend to impede the advancement, progress, and participation of women in society. A patriarchal culture obstructs women's intention to take on leadership roles, as it tends to place them 'at home', and therefore far from public leadership (Kadaga, 2013).

In masculine societies, the portrayal of the African woman is determined by the socio-cultural and patriarchal ideologies that present her as docile, modest, and tender — one who does not question

male authority (Ebila, 2015), while the men are presented as assertive and tough. These perceptions, coupled with persistent assertions that women have no rights, no value, and are not equal to their male counterparts, eventually force women to submit and conform to the socially sanctioned and acceptable norms in their society. Such detrimental cultural beliefs are normally prevalent in an environment where the society places a low value on women and girls (Ebila, 2015).

Impediments to women's progression to leadership roles are, to a large extent, due to negative perceptions of women's ability to lead. A deduction was made that many men believe that women cannot lead, and that they are better suited to supportive roles, in which they must be given guidance, direction, and even protection (Chesania, in Nyamweya, Ogwora, & Nyamwange, 2018). Men are convinced that, by making decisions *for* women, they are protecting them; they see it as an act of beneficence, yet many women view such protection as a means of limiting their autonomy (Princewill, Jegede, Nordström, Lanre-Abass, & Elger, 2017). Adjusting these beliefs will require a cultural change over the long term (Sanders, Hrdlicka, Hellicar, & Cottrell, 2011).

Women are often reminded that they are unreliable and unpredictable, and, hence, the suitable place for them is the kitchen (Kasily & Onkware, in Nyamweya, Ogwora, & Nyamwange, 2018). Such a role, which has been culturally carved out for women, denies them access to information, exposure, and experience (Gouw, in Nyamweya, Ogwora, & Nyamwange, 2018). Japan is a case in point. Due to cultural and role expectations, of the approximately 70% of women who exited the workforce in 2012 to look after their children and to take care of their families, most did not return to employment. Research by Daimon (2013) concluded that Japan's economy was negatively affected during this period.

Cultural beliefs and traditions shape personality (Mbalcogu, in Nyamweya, Ogwora, & Nyamwange, 2018) and social behaviours, with patriarchy requiring of women to be submissive and quiet. Any behaviour that is contrary to this expected personality is considered an embarrassment to the family (Moodly & Toni, 2017). As a result, women feel they are socially obliged to not only be submissive, but to keep the peace at home.

In patriarchal societies, negative perceptions of women are used as strong tools for group control. The detrimental patriarchal myths that are upheld include that certain jobs, especially those that involve decision-making and leadership, should be reserved for men (Tabassum & Nayak, 2021).. As a result, few women have been able to prove their ability in top leadership positions in institutions, organisations, and politics, evidenced by the fact that Africa has had only two female presidents to date

2.6 Role of family in women's socialisation

The family should be the centre of civic education. Most detrimental cultural practices take place in secrecy within the confines of the home, forcing the creation of a conspiracy of silence between young girls and the female community leaders who safeguard and uphold harmful traditions (Banda & Atansah, 2016). Many girls do not receive the familial support they needed to start, continue with, or complete their education (Segobye, 2016; Addaney, 2016), as they are not accorded the same value as boys.

The socialisation of children is such that, from the start, girls are taught to participate in household duties, while the boys are nurtured and groomed for leadership roles. The grooming of girl children is focused on marital roles — a good wife, mother, and housekeeper. They are conditioned to believe and accept that a woman is inferior to a man in the business context; he wields the upper hand, while her place is in the home, far from areas of power. Girls are taught that they are 'away children', and thus they do not assume leadership positions in the home. Research findings show that the few women who have assumed top leadership positions had been groomed for such a role by a family member who had also previously taken on some form of leadership position. The lived experience of one female leader, Joyce Banda (Banda & Antasah, 2016), former president of Malawi, is a case in point:

“As a young child, my parents protected me from traditions they believed detrimental. At home, my father raised me and my sisters as he would raise sons—engaging and valuing our potential in a way deemed unusual in those times. I ended up in the State House.”

The effectiveness of the family unit in the socialisation of women is notable. In research by Madsen (2010) on women leaders in the United Arab Emirates and the influences believed to have been most critical in preparing them for leadership, it was found that the presence of, and interaction with, male siblings during their formative years and ‘more open-minded’ fathers were the most decisive factors in the later development of the women’s leadership capabilities. Conversely, lack of support from family members has been cited as one of the many causes of women’s under-representation (Bismark, Morris, Thomas, Loh, Phelps, & Dickinson, 2015). The Department for International Development (DFID, 2014) notes that the absence of parental and community support can hinder the effective delivery of girls’ leadership programmes, as it limits girls’ participation. As these girls develop into women, this background will continue to haunt them and hamper their progress towards leadership positions. It is thus clear that there is a need to counter the damage caused by harmful cultural practices and norms, starting with the household unit.

The next section reports the findings of the study, substantiated by verbatim quotes from the interview transcripts.

3. Findings

The themes that emerged from the data are reported according to the interview questions.

Interview Question 1: *According to you, what is an inhibiting cultural practice?*

P3: “An inhibiting cultural practice is a form of violence which is committed primarily against women and girls in their communities or societies because they are considered by the perpetrators to be part of accepted cultural practices.”

P6: “... those practices that are known to have bad effects on people’s well-being, or which tend to obstruct one’s path to equality or equal treatment, but are still practised.”

P7: “...forms of violations which are perpetrated against some individuals and are accepted as part of the traditional cultural practice in specific countries and in specific contexts.”

Interview Question 2: *What are the detrimental cultural factors that impede women from taking on leadership positions?*

Discriminatory socialisation of girls:

The responses of the participants indicated that, culturally, women are not supposed to be heard. The man is the head of the house; he rules, and they have no voice. If a woman talks too much, she is labelled a woman of loose morals, a cultural deviant. A strong, powerful woman is rejected by society. As a result of this upbringing, women not only evade responsibility, they shun it. Almost all the participants pointed out the cultural upbringing of the girl child as discriminatory.

P1: “As a girl, you are raised being told that you are a woman; your role is in the kitchen, raising children. You do not tread in the men’s domain.”

P3: “Societal upbringing is a problem. As a woman, you are supposed to assume the back seat and let the men lead. You do not count for anything; you are a nonentity.”

P7: “Even dating back to the time when Jesus was on Earth. You find that, according to the Jewish culture and tradition, women and children were not counted; it was only the males. When the Bible says Jesus fed 5 000 people, this statistic excluded women; they were bundled up with their children. Today, this is deeply engrained in society. Even if you fight to be an equal, society will reject you. They will question your authority.”

P4: “You remain silent as a woman. ‘If you think you have important things to say, tell your husband’. If it’s a good idea, he is the one who will put it across, and credit will go to him.

That is how the chiefs of old ruled; it was through their wives, but the women remained in the background. Today, girls are still being taught to follow suit.”

P9: “Cultural upbringing... Today, as women, we are limited in terms of what we are capable of giving to society.”

P10: “We were taught that men are superior, and, as such, you do not challenge them.”

Patriarchy:

Participants indicated that patriarchy is a detrimental cultural practice that is holding women back from assuming leadership positions.

P6: “Patriarchy... Most of the African countries are under patriarchy ... this needs to be deconstructed, to be transformed. It starts in the home...”

P8: “For women born in the 60s or 70s ... the cultural practice of patriarchy really pulled them down. They were taught men are superior; you do not challenge them, and, to this day, this has not changed. Women are failing to fight this.”

Male superiority:

Participants pointed out that the notion of male superiority is a causative factor in women failing to take up leadership positions. This practice begins from the moment the gender of the child is known. Universally, son preference is a cultural practice that plays a crucial role in the low valuation and neglect of the girl child. The boy child is nurtured and groomed for leadership roles, while the girl is neglected in many areas.

P6: “Culturally, the boy has power over the girl child. The girl does not have a say, for example, in the usual sibling rivalries. I have a twin brother, and this brother of mine has rights over me. Even brothers that are younger than me. I was taught to mellow down, told not to talk back at them. I cannot challenge them, because they are boys!”

P7: “Right from a young age, society teaches boys about role differences. I have to battle to get my six-year-old son to go and wash his plate, as he argues that his sister should instead do it. As a boy, he cannot. Where did he learn that from? Society has dictated that is how it should be.”

P9: “There are underlying cultural forces that exist, which pin the girl child down and presents an uneven ground. As a grown woman, she cannot shirk off these forces. Son preference exists, and it is widely accepted as normal by most cultures around the world. It has to be addressed in order to change it. Because of its wide acceptance as normal, its role in the slow progress of women assuming leadership positions has been brushed aside and underestimated.”

Unsupportive family unit

Participants’ views were aligned with that of Hartmann (2010), who notes that, in reality, the household unit still has a traditional structure that makes males the dominant gender. In black African families, “parents view their daughters as little more than a drain on limited family resources. They do not invest money in a daughter’s education and skills acquisition, preferring to marry her off at an early age. The dowry received reduces the perceived ‘burden’ on a girl’s family” (Segobye, 2016).

P2: “In the family setting, young girls are groomed for marriage. They are taught how to assume wifely duties in the family they are going to get married into, while the son is groomed to be a leader, head of the house. No wonder then that, when it comes to assuming leadership positions in the workplace, the boy already has an upper hand; the ground is not level. The norms in many

P5: “Girls are raised and socialised as ‘away children’. They cannot be groomed for leadership; it is a waste of time. They will get married and go to another family.”

Interview Question 3: *In what ways are women responding to these detrimental cultural practices?*

Take action and change the way:

The participants noted that women have become aware that they need to act against the detrimental cultural practices that hamper their progress in assuming leadership roles. To a great extent, it is incumbent upon themselves to change the status quo. Participants noted that women have realised that trying to change grown men and women is difficult, and may even be in vain, are that they are attempting to change the belief system at the midway point, instead of addressing it at the root. Older people do not easily change their beliefs; hence the call to take action and instil the correct values while they still have the future society under their guidance.

P4: “ ‘Women, be the change that you want to see.’ Change begins at individual level ... we are the ones to initiate this; we need to change our mind-sets. We raise the children, so we can instil in them the right values that we wish to see.”

P9: “We need to teach the children to be sensitive to the right culture that we want to propagate. We have a societal problem, but [we], as women, in our small corners, can do something to change the way society thinks and behaves.”

Unite in action for equity:

Participants indicated the need for a united front in addressing detrimental cultural practices.

P2: “We need to speak with one voice, speak out against the gender imbalance.”

P4: “No-one will come to the woman’s rescue. She must get up and fight, begin to see herself as an equal.”

P9: “Let’s continue fighting. We are not trying to push the men down under; no, we still respect them. All we are saying is: when it comes to our professions, let there be equity.”

Dissolve patriarchy:

A number of participants suggested that, in order to establish equality, patriarchy has to end. This view is aligned with literature, with the Commission on the Status of Women (2018) stating that removing patriarchal laws and forming strong partnerships across all sectors of society are important steps in removing barriers to progress in gender equality. However, Wood (2019) notes that the roots of patriarchy run deep in the fabric of society, and that it is so deeply entrenched in the societal principles of control, male dominance, identification, and centeredness that it is difficult to change.

P7: “Deconstruct [sic] patriarchy, advocate for its transformation. Introduce it in early primary school, right from the grassroots level”

P8: “Teach children that there are no ascribed gender roles. If this is taught at school and reinforced at home and in the community they live in, society may change its way of thinking and relating to the different genders.”

One participant, who had witnessed generations of women in her family suffering discrimination, noted having called on God for ***supernatural intervention***, as, according to her, everything else had failed to bring about equality.

P1: “Rely on the supernatural for support. As women, we have been advocating for change for quite some now, but we still do not see the change. Women simply talk; nothing changes. Why engage in battles of a lifetime? May God Himself intervene. If not, the situation will remain as it is.”

Interview Question 4: *How can these detrimental cultural issues be addressed, while at the same time respecting the cultural identities of the perpetrator communities?*

To realise the aspirations of the global SDGs by 2030, Africa must learn to value her womenfolk and free them from the cultural practices that continue to block their progress towards leadership. Participants noted that preserving African cultures and traditions is important, but that certain practices need to be revisited. They suggested initiating cultural change through processes of education, communication, and training. Bringing about change is indeed difficult, as it requires shifting existent underlying beliefs and behaviours (Sanders, Hrdlicka, Hellicar, Cottrell, & Knox, 2011). Participants reiterated the need for education of adults and children and regardless of gender.

P3: “People need to become educated...”

P8: “Education, education...”

School is considered one of the primary socialising agents. Schools have a duty, as one of its main roles, to teach learners societal norms and values (Haralambos, 1995). The school should therefore be active in offering a curriculum that assists boys and girls to develop new orientations about the roles and capabilities of both men and women. Existent literature posits that such a curriculum should be introduced quite early in the school years, as behavioural and attitudinal approaches are best introduced in early childhood (Kar, Choudhury, & Singh, 2015). With the right orientation, children would realise at an early age that they are equal, and that no sex group should feel superior or inferior to the other.

However, the OHCHR (1979) has noted that access to education in itself is not enough to eliminate negative values held by society, as, in most countries, such values are transmitted through educational curricula in which women are depicted as passive and domestically oriented, while men are depicted as dominant and the breadwinners. A lot more needs to be done to challenge the status quo and norms in order to give women access from an early age to orientations that point towards leadership. Female children need to be raised as equal to male children.

P1: “There is a need to change the societal mentality that women in leadership cannot achieve much. In fact, we want to be known for more than having assumed positions of leadership; we want to be known for our achievements in those positions. Once that is done, we will feel emboldened to ask for inclusivity with our male counterparts.”

In this regard, Onyango, Simatwa, and Ondigi (2011) pointed out that societal attitudes towards women are heavily biased, and that the language used in referring to women in children’s socialisation is indeed negative. In many African cultures, children sit around the fire with an elderly person telling them character-building stories and folktales. These stories almost always portray women as ineffective, stupid, passive, invisible, and inferior, while men are portrayed as intelligent, curious, brave, inventive, and powerful (Onyango, Simatwa & Ondigi, 2011). To assume leadership positions, one needs high abilities and ambition, which are considered lacking in women. Due to these notions of inferiority, women are denied access to leadership. Participants noted a need to advocate for changes to such attitudes, beliefs, practices, and discriminatory social norms.

Address gender stereotyping:

P3: “Appropriately address gender stereotyping issues. Within the family, and right from an early age, teach the girl child to be assertive. Socialise girls to form strong personalities and mould their characters towards leadership by encouraging specific beliefs and attitudes.”

Stereotypes can be defined as widely held beliefs about the characteristics, behaviours, and roles of men and women (Endendijk, Groeneveld, Van Berkel, Hallers-Haalboom, Mesman & Bakermans-Kranenburg, 2013). Gender stereotypes are passed from one generation to the next, with one

generation cultivating the notion held onto by the next that women are born into an inferior status (Wood, 2019). This demeans women, which then holds them back from realising their full potential. Such stereotyping also leads to women being marginalised and discriminated against, ultimately bringing about unfair and unequal treatment.

We live in a dynamic world, and there is a need to shift mindsets and behaviours, especially at household level, where young girls are most devalued, leading to society's negative understanding of women's capabilities. While discriminatory mindsets are hard to change, progress can be made by investing in methods that have been proven effective in bringing about long-lasting changes in both parental and community behaviour (Banda & Atansah, 2016). A changed mindset will assist women to think and see themselves as capable of participating in leadership positions.

P4: "Mentoring and nurturing women's attitudes and characteristics ... this helps women to share and gather valuable information from others, to remould their beliefs and psych them to rise above these negative cultural obstacles. With time, women will build self-esteem and confidence."

P10: "Eradicating patriarchal laws and lifting off the heavy physical, psychological, and social burdens imposed by traditions."

Rural and traditional leaders need to garner the requisite skills to allow them to change negative mindsets pertaining to perceptions of women. Doing away with patriarchal laws and creating strong partnerships across all sectors of society are critical if barriers blocking progress in gender equality are to be removed (Commission on the Status of Women, 2018). Co-operation with societal elders who are gatekeepers of culture and tradition is critical in addressing patriarchy (Segobye, 2016).

P5: "Gender sensitivity needs to become part of government policy. There is still a lot of work to be done to change the concept and thinking of society; that mentality whereby 'to be a woman in our society means to be a nobody' needs to be combatted."

Gender differences need to be understood. Therefore, courses in gender awareness need to be introduced at every level, including the workplace, and made mandatory for all, to effect change right up to the top echelons. Governments need to adopt legislation prohibiting detrimental traditional practices, review existing and proposed laws and make the necessary amendments to discriminatory statutes and enforce gender equity, and formulate innovative methods of challenging and shifting detrimental socially shared cultural practices.

In this regard, P4 noted: "Sexist remarks should be criminalised and even banned in society... Governments should be seen to be more involved in workplaces, at home, in schools ... in fact, in the communities that we live in."

Women are devalued for the mere fact that they are women. Criminalising sexist remarks and attitudes could offer women greater protection against exploitation, discouragement, and devaluation and, instead, create a positive and more honourable position for women in their societies. If they enjoy legal protection, vulnerable women could feel more comfortable and confident in speaking out against societal abuse and discrimination. This could have a ripple effect in the form of women's positive attitudes, in turn leading the society to greater confidence in and respect for women and placing faith in them as capable leaders. Interventions from the highest levels will signify a commitment to addressing the detrimental cultural practices that militate against women's advancement to leadership positions.

Education of both sexes:

Participants noted an urgent need for education of both sexes regarding equality.

P2: "Educate both males and females, right from grassroots level [about equality of the sexes]."

P5: “Educating the women themselves not to pull each other down, to begin to trust in the capability of the other woman, to work together, to get rid of the ‘pull down’ syndrome and be supportive of each other.”

P8: “Let the woman herself be educated. Some of these detrimental but culturally imposed behaviours will tend to fall off as one becomes enlightened.”

Government intervention:

Banda and Atansah (2016), on government intervention, mention that in order to challenge detrimental practices and norms against young girls while still respecting cultural identities, African governments, in co-operation with development partners, need to throw their weight behind interventions to address inhibiting cultural practices. This needs to include bringing the various forms of detrimental traditional practices to light, as these do not make news headlines or become the subject of policy memorandums, due to the fact that they are extremely localised, rarely going beyond district- or country borders (Banda & Atansah, 2016). There is a silence surrounding detrimental cultural practices, because of beliefs that these customs are in women’s best interests.

P6: “In government, the ministries responsible for culture should be proactive. They should garner the support of experts for help in propagating positive cultural practices and habits that do not undervalue and degrade women. I am looking at traditional chiefs and other traditional legislatures who are in a position to exert positive influences.”

Banda and Atansah (2016) emphasise the need to embark on a nationwide study of detrimental cultural practices within different countries, and that this be done with the co-operation of both traditional and religious leaders. Such an exercise will enable the development of country-specific provisions to react to these practices. Having gathered evidence, both descriptive and of a quantitative nature, educational institutions will be in a position to examine the motivation behind certain practices and implement education to address them (Banda & Atansah, 2016). Collecting women’s stories of their experiences of detrimental cultural practices will add credible data to such studies, and will assist in determining best practice for changing a particular behaviour. Effective interventions will assist in creating greater alignment between cultural practices and human rights as enshrined in Constitutions.

4. Conclusion

Detrimental cultural practices as part of a patriarchal societal approach are directly linked to women’s subordination to take action and lead willingly. Women find it difficult to liberate themselves from this subordination and make great strides in their careers and valuable contributions to societal wellbeing through leadership. If cultural practices are inhibiting women from being equal, they need to be done away with, regardless of why they were instituted in the first place. It is time to highlight and address the negative cultural practices that continue to be perpetrated against women through targeted and informed interventions. Ending inhibiting cultural practices will benefit not only women, but society as a whole.

5. Managerial Implications

Managerial implications brought forth by this paper are that, if the harmful cultural practices inhibiting the rise of women to positions of leadership in institutions of higher education in South Africa are done away with, the institutions would benefit from having more women in managerial positions, the benefits of which are well-documented. Addressing cultural inhibition of women leadership, including in higher education, requires action on multiple levels, including government, institutional governance, and management.

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Entrepreneurial Orientation among Academics in Nigeria's Universities

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Keywords:

Entrepreneurial Orientation, academic entrepreneurship, entrepreneurial university, innovation

Abstract

Academic entrepreneurship has received greater attention today than in the past decades, particularly in developing countries. Universities in these countries are now conscious of the need to engage in demand-driven research and foster industry collaboration in a bid to address societal challenges and translate research outputs into products, processes, and services. To encourage this development, university administrators and stakeholders have supported the establishment of technology transfer offices, technology incubators/hubs, and entrepreneurship development centres. Despite similar efforts in Nigeria, the existing weak linkage with industry and poor technology commercialisation persist. These challenges may be connected to a lack of entrepreneurial passion/mindset among the faculties. This article, therefore, maps the entrepreneurial orientation of faculty members in Nigeria to quantify their level of preparedness/readiness to incorporate market and societal needs in their research endeavours. Understanding the EO of faculties will further help university administrators and stakeholders devise robust incentives/interventions required to spur innovations among them. Data were collected from two hundred and twenty-nine (229) academic members across the fields of Science, Technology, and Engineering in thirteen selected universities. The universities were mainly from South-West Nigeria. Data were analysed using exploratory factor analysis. The results show that competitiveness, autonomy, innovativeness, and proactiveness explained 54.3% of the variance among the factors that constitute EO while risk-taking and opportunity recognition explained 4.6% and 4.5% variances respectively. The results further show that Bartlett's Test of Sphericity was statistically significant (2391.7. $df = 300$, $p < 0.01$), and the Kaiser-Meyer-Olkin index of 0.883 was 'meritorious', suggesting that the six EO components should be retained. The study concludes that for the universities to capitalise on the high EO among the academics, improving university's entrepreneurial ecosystems by providing robust incentives and infrastructure is germane.

1. Introduction

The global economy and competitiveness of nations are driven by knowledge, innovation, and creativity. Nations at the frontiers of technological progress and economic development today emerged as a result of deliberate investment in knowledge production and commercialisation (Siyanbola, 2019; Adelowo et al., 2019). Therefore, investment in new knowledge production and the commercialisation thereof have become the main strategy for firms and nations to stay competitive. Contributing to industry growth and development, higher education institutions (HEIs), and especially

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universities, are urged by governments and other stakeholders to contribute more than mere teaching and research (Clark, 1998; Etzkowitz et al., 2000; Slaughter and Rhoades, 2009; OECD, 2012; Rubin and Callaghan, 2019; Adelowo and Surujlal, 2020). In fact, universities are now seen as strategic partners to industry and government (Jones et al., 2021). There is also intense pressure on the universities to fulfil the third mission or follow the mode II³ knowledge production which requires a shift in the mindset of academics and re-configuration of the university system (Siyanbola, 2019). Achieving the third mission or mode II knowledge production implies that universities are able to successfully engage in a series of activities such as technology transfer, industry collaborations, and commercialisation of research outputs without negative consequences on traditional activities (Foss and Gibson, 2015). Universities that have been able to master and demonstrate a sufficient level of confidence in technology commercialisation and industry collaborations have been referred to as entrepreneurial universities. Similarly, faculty members in these universities with vast knowledge and engagements in technology transfer and commercialisation are academic entrepreneurs. The main argument that support entrepreneurial university or academic entrepreneur is the need for the university to justify public investment in research and development (R&D) and provide solutions that address societal challenges (Guerrero et al., 2016; Etzkowitz and Zhou, 2017; Adelowo, 2018). Also, it has been argued that knowledge accumulation in the universities is a strategic resource that provides entrepreneurial ideas and opportunities capable of providing solutions to industry and societal challenges, through knowledge spill-over (Audretsch, 2014). Universities may also leverage on their knowledge production and commercialisation potential to improve industry collaboration, thereby attracting industry funding for further research (De Silva 2015; Adelowo, 2018).

Moreover, several initiatives have been advanced to entrench the culture of entrepreneurship in the universities, particularly the creation of technology transfer offices, start-up incubators, innovation hubs, key interdisciplinary research units, directorate of research and innovation, and designated centres of entrepreneurship among others (OECD, 2012; Doh, 2018; Adelowo, 2021). These initiatives are to provide necessary guidance and infrastructure to students and faculty with commercialisable research ideas on how they could be nurtured for venture creation. In developing countries, particularly on the African continent where many of these initiatives have been adopted to unleash entrepreneurial passion among the academics in the universities, there appear to be limited progress towards technology commercialisation and industry collaboration (Adelowo, 2020; Ruba et al., 2021; Adelowo, 2021). Recent studies have shown that universities with high entrepreneurial orientation (EO) tend to do better in fostering innovation and entrepreneurship among its community than those with weak EO (Torodovic et al., 2005; 2011; Van Doorn et al. 2013; Balasubramanian et al., 2020). Here, entrepreneurial orientation (EO) addresses the mindset of firms or individuals in the pursuits of new ventures and provides a useful framework for researching entrepreneurial activities, even among the academics (Lumpkin and Dess, 2014). EO generally represents a configuration of policies, practices, and processes that provide insights into the basis of entrepreneurial decisions and actions. Gauging entrepreneurial orientation (EO) of academics is therefore important for policy and practice. It allows the university administrators/stakeholders to quantify the perception and disposition of academics to technology transfer and commercialisation, thereby enabling them to propose possible interventions required to strengthen university's entrepreneurial ecosystems. The higher education institutions are also caught in the web of competition where universities' rankings play important roles in attracting student and talents and sustained industry patronage for research uptakes. The EO of academics signals the level of readiness of universities in developing countries to embrace the third mission, thereby allowing government, administrators and university managers to design appropriate policy incentives required to catalyse innovation among them. It should also be noted that EO have been established to impact positively on performance, be it at meso or micro levels (Torodovic et al., 2011; Hormiga et al., 2017; Balasubramanian et al., 2020; Ruba et al., 2021). Building on existing streams of literature on EO, particularly the work of Miller (1983), Lumpkin and Dess (1996), Covin and Lumpkin (2011) and Torodovic et al. (2011), this article maps and summarises the entrepreneurial orientation of academics from thirteen universities across South-West Nigeria. This is with a view to

³ The mode II knowledge production relates to the multidisciplinary and transdisciplinary nature of research where the focus is on creating practical solution to industry and societal needs, coupled with the drive to commercialise them.

providing rich information that university administrators, policy makers and economic planners could leverage to improve technology transfer and commercialisation in the universities. The objective of this study is achieved through empirical exploratory analysis of the entrepreneurial orientation of faculty members in thirteen selected universities in Nigeria. The rest of the article is organised thus: literature review and empirical foundation of EO and how it connects to universities are presented in the section 2; methodology is presented in section three and sections four and five present results and discussion and policy recommendations respectively.

2. Literature Review

2.1 Entrepreneurial Orientation: Theoretical Perspectives

Entrepreneurial Orientation (EO) have been viewed as a strategy-making process used by decision makers to enact and sustain organisational purpose, mission, vision and competition (Rauch et al., 2009; Lumpkin and Dess, 2015; Akinwale et al. 2022). EO defines firms' capability to garner and deploy resources effectively to attain business objectives or strategic move to capture values in the highly competitive market. It has been argued that the concept of EO does not only apply to for-profit ventures alone, as public institutions and non-profit institutions are now devising strategies to improve their relevance, performance and resource utilisations. In fact, Doetsch and Lindberg (2013) have argued that thinking and behaving in entrepreneurial manner impact on career, as enterprising individuals can successfully navigate through the environment of their operation to identify and seize opportunities for maximizing career goals. Institutions, regardless of their depth and breadth, are known risk takers (be it socio or economic) gather resources to exploit identified opportunities that benefit society. In the process of marshalling the scarce resources to create values, diverse strategies present themselves to entrepreneurs, and choice or course of action taken could be determined by the depth of entrepreneurial orientation (EO) (Doetsch and Lindberg, 2013). Mintzberg (1973) sees EO as the entrepreneurial strategy-making mode in which entrepreneurs actively search for new opportunities in the context of uncertain environments. The decision making in an uncertain condition is a fundamental component of EO that links it more appropriately to entrepreneurship, making it more relevant to all institutions and in all context. Broadly described, EO are practices, philosophies, and strategic behaviours in decision making process that are entrepreneurial in nature (Anderson et al., 2015).

EO have been broken down into different constructs which could either be unidimensional or multidimensional. For instance, the work of Miller (1983) recognised unidimensional constructs of EO, that is, the three dimensions of risk-taking, innovativeness and proactiveness could be unified. Over time, other constructs such as decision making, autonomy, competitive aggressiveness and proactiveness have also been identified as germane to EO (Fredrickson, 1986; Lumpkin and Dess, 1996; 2001; 2014). EO have also brought the relevance of Schumpeterian 'innovation and creative destruction' approach to entrepreneurship to the fore. Global experiences have equally shown the relevance of innovation to firms and institutional survivals. The global pandemic occasioned by the Covid-19 has changed the way workplaces are organised, including how higher educational institutions offer their services and the depth of collaboration with industry to come up with relevant solutions. In this case, the innovativeness component of EO becomes relevant for institutions or firms to continuously introduce new products, processes or services that significantly displaces existing ones in the market, thereby creating new equilibrium or setting new pace in the market (UNCTAD, 2021). In today's globally connected world, innovation is central to business survival and competitive advantage, particularly that knowledge production and commercialization remain intense and product life cycle are fast shortening. The main means of survival therefore remains the propensity of firm to generate new ideas, gain new markets and exploit them profitably.

Within the confine of EO, innovativeness is defined as the predisposition of an entity or individual to engage in creative experimentation by introducing new product or services to the market, as well as the development of new technological leadership (Miller, 1983). Risk-taking is the ability to take bold actions by venturing into the unknown and or committing significant resources to ventures in uncertain environments. Proactiveness is an opportunity-seeking, forward-looking perspectives characterised by the introduction of products or service ahead of competition in anticipation of future

demands. Other essential components of EO construct include autonomy and competitive aggressiveness as advanced in Lumpkin and Dess (1996 and 2014). Competitive aggressiveness is the intensity of effort to outperform rivals and is characterised by a strong offensive posture or aggressive response to the actions of competitors. Finally, autonomy is the independent action undertaken by entrepreneurial leaders or team directed at bringing about a new venture and seeing it to fruition. Moreover, EO has been linked to high productivity and improved performance at firms' and individual levels. For instance, Riviezzo et al. (2019) and Da Cruz et al. (2021) have linked positive impact of launching spin-offs and registration of patents on the EO of the Higher Education Institutions. These further show the relevance of EO within the academic settings.

2.2 Entrepreneurial Orientation in Universities

Covin and Wales (2019) have argued that EO is present in all organisation at varying degrees, depending on the focus or nature of business being undertaken. In addition, Lumpkin and Dess (2014) have equally stressed that EO could be applied to individuals or organisations. For the university to act entrepreneurially and achieve the third mission objective, the management and administrators have to engage different perspectives or approaches when conducting university businesses or routines. The changes have to reflect in the mission and vision statements, articulation of strategies, the configuration and the injection of new mindset into the university. The need for universities to compete for research funds, either from the public agencies or private sectors compels them to learn and deploy entrepreneurial skills that could guarantee competitive advantage or success. For continuous survival therefore, teaching and research engagements are to be approached entrepreneurially. Within the university for instance, Todorovic et al. (2011) have examined and mapped EO among academic department in Canadian universities through a survey. Their results, using confirmatory factor analysis, showed four dimensions of EO in the universities, including research mobilisation, unconventionality, industry collaboration and perceptions on university policies. These four dimensions tend to predict academic department's involvement in the third mission activities. Interestingly, the construct used for the EO in their study was adapted from existing studies such as Covin and Slevin (1989), Flynn and Percy (2001), Stratman and Roth (2002), Wilklund and Shepherd (2003) and Lumpkin and Dess (1996) among others. Balasubramanian et al. (2020) also examined the influence of EO on the performance of a university in the United States, using the unidimensional constructs of EO as advanced in Miller (1983). The unidimensional construct of EO hinges on the believe that EO is the intersection of, or shared variance among the trio of innovativeness, proactiveness and risk-taking, as earlier discussed. It should be noted that while some organisation or individual may exhibit all the dimensions of EO, others may not (Lumpkin and Dess, 1996; Dal-Soto et al., 2021).

Moreover, universities represent a bundle resources that may be strategically positioned to attain competitive advantage at regional and national levels (Penrose, 1989). Therefore, developing appropriate entrepreneurial competences among the elements within the universities presents greater opportunities for innovation and competitiveness. EO becomes more relevant to the academic context as university makes efforts to transition from traditional activities to entrepreneurial endeavours, making them more relevant to industry and society. The shift to entrepreneurial universities comes with some challenges and opportunities, particularly considering the strength, weaknesses, opportunities and threats associated with the transition process. While some universities can easily adapt to entrepreneurial requirements, others may take longer depending on their degree of EO and internal/external constraints. For instance, entrepreneurial universities adopt new structure, mindset, incentives policies and strategy to promote behavioural and managerial changes in the academic community (Tijssen, 2006; Etzkowitz, 2013; Siyanbola, 2019; Dal-Soto et al., 2021). The amount of resources available to the universities and the context are very significant to the transitioning process (Clark, 2001; OECD, 2012).

What is more, universities with high level of EO have the propensity to engage with industry and exploit entrepreneurial opportunities or develop her internal routines to support technology transfer and commercialisation among the faculty members. Thus, EO serves to integrate and focus resources, potentially resulting in a competitive advantage (Torodovic et al., 2005). Prior studies have also

established links between EO and performance of firms, including knowledge-based firms (Wiklund and Shepherd, 2003; Zahra and Garvis, 2000; Rauch et al., 2009). In this study, the level of EO among the academics in Nigerian universities was assessed using complete constructs from Miller (1983)-innovativeness, risk taking, proactiveness, and opportunity recognition and Lumpkin and Dess (1996; 2014)-autonomy and competitiveness. In this wise, EO have been studied at the university-wide level, taking university as the unit of analysis, others have examined EO at individual academic level (Torodovic et al., 2011, Dal-Soto et al., 2021; Ruba et. al., 2021; Hassan et al., 2021; Perkmann et al., 2021 and Atta-Owusu, 2021). The work of Kalar and Antoncic (2015) examined EO and academic involvement using quantitative analysis and their results showed that faculties' perception of EO of their department have significant impacts on both traditional and entrepreneurial involvement. For Akram et al. (2017), they found that EO of the faculty members have significant impact on their potential to commercialise research outputs, although trust mediates the relationship. Given that little is known about how EO is configured among faculties in African universities, this article builds on existing literature to examine the EO of academics within Science, Technology and Engineering (STE) fields from thirteen selected universities in Nigeria. The next section details the methodology, research instrument and variables and measurement.

3. Methodology

3.1 Research Design

This paper uses a cross-sectional research design where primary data were collected from two hundred and twenty-nine academics from science, technology and engineering (STE) departments in Nigeria (Adelowo, 2017; 2018; Adelowo and Surujlal, 2020; 2021). The focus on the STE departments was borne out of the argument that they conduct R&D which have potential for commercialisation or capable of being transferred to the industry (Prodan and Drnovsek, 2010; Pries and Guild, 2011; Siegel and Wright, 2015). The universities and research institutions have been charged to pursue the commercialisation of research outputs to support industrial growth in Nigeria, with clear articulation in the National Science, Technology and Innovation (STI) Policy of 2012. The Tertiary Education Trust Fund (TETFund) and the recent push by the National Universities Commission for all universities to embrace innovation and entrepreneurship as an important way of showing relevance and impacts in the society. To further promote innovation and entrepreneurship in the universities, all universities were mandated to establish a directorate of research and innovation, in addition to some existing structures such as technology transfer offices, business incubators and science parks (Adelowo, 2021). Nigeria boasts of two hundred and two universities but with fewer lecturers and researchers to cater for large population of undergraduate and postgraduate students (Okebukola, 2015; NUC, 2021; 2022).

Due to unavailability of database containing the list and number of academics in the Nigerian universities and those in the specific fields of interest, a multi-stage sampling technique was adopted. Here, universities were first selected based on research intensity, presence of technology transfer and entrepreneurship infrastructure (Adelowo and Surujlal, 2020). Given that the study focused essentially on the South-West geopolitical zone of the country, thirteen universities made the sample. All the STE departments were targeted in these universities. However, only interested academic members who were available during the survey visit participated in the survey (Adelowo, 2018). The basic criteria for academic member's participation is that they must possess at least a master degree, with potentials to undertake doctoral degree. The minimum academic qualification for lecturing in Nigerian universities is PhD, but those with masters and on doctoral programmes are also recognised. This criterion is important because they might have gained some level of research experience and be able to recognise potential application of the research outputs. In terms of position in the university, a minimum of Lecturer II who fit perfectly into the criterion were surveyed. A total number of three hundred and fifty (350) academics participated in the survey which took over four months to complete. After repeated reminders and visits, two hundred and twenty-nine (229) academics returned the completed survey instruments.

3.2 Variables and Measurement

Diverse metrics have been advanced in the literature to capture EO among firms or universities and among individual academic entrepreneurs (Miller, 1983; Lumpkin and Dess, 1996; Stull and Sigh, 2005; Todorovic et al., 2011; De Silva et al., 2015; Ruba et al., 2021; Dal-Soto, 2021). The theoretical basis for the indicators used is traceable to the earlier work of Miller (1983) and Lumpkin and Dess (1996), regardless of research paradigms. For instance, Da-Soto et al. (2021) adopted a multiple case study, using qualitative data collected from the head of research groups across Sweden, and Brazil. The recurring EO metrics they found in the universities across these countries include pro-activeness, risk-taking and innovativeness (Da-Soto et al., 2021). Ruba et al. (2021) adopted quantitative technique to estimate the influence of EO on the university performance in Congo. The authors adapted EO constructs from Lumpkin and Dess (1996; 2001) and Covin and Slevin (1989) to demonstrate that innovativeness, proactiveness and competitive aggressiveness significantly influence performance in the university. The work of Torodovic et al. (2011) constitute a significant progress towards developing relevant metrics for EO within the knowledge institutions, particularly universities. Although their work is also empirical, following quantitative paradigm but the unit of analysis were departments. For the purpose of this study therefore, a number of metrics were adapted from Lumpkin and Dess (1996), Campos, Nuno, and Parellada, F. S. (2012), and Todorovic et al. (2011).

In all, a total of twenty-five items were developed to capture the EO of academics in the study areas. The items cut across all the established EO in literature, including innovativeness, opportunity recognition, risk-taking, proactiveness, competitive aggressiveness and autonomy. All items were measured on a five point likert scale from 1 'strongly disagree' to '5 'strongly agree'. Data collected were analysed using principal component analysis (PCA), a data reduction strategy, and it produced six core elements of EO.

4. Results and Findings

The entrepreneurial orientation of faculty members was captured by their level of innovativeness, risk taking, proactiveness, competitiveness, autonomy and opportunity recognition potential as advanced by various authors (Miller, 1983; Lumpkin and Dess, 1996; Torodovic *et al.*, 2005; 2011; Lumpkin and Dess, 2014) with slight modifications to take care of the context of the study.

The entire twenty-five items that captured the entrepreneurial orientation of faculty members were subjected to exploratory factor analysis (EFA) to summarise and categorise them into fewer manageable variables. This transformation prepares the reduced variables for robust statistical tests and analysis. The EFA was conducted using Principal Component Analysis (PCA) extraction with Kaiser Normalisation as suggested by Costello and Osborne (2005) which produced an oblique rotation and allows factors to share variance. The results showed that the Barlett's Test of Sphericity was statistically significant (2391.7. $df = 300$, $p < 0.01$), and the Keiser-Meyer-Olkin index of 0.883 was 'meritorious' (using the thresholds proposed by Kaiser, 1974). The analysis identified seven factors with Eigenvalues greater than 1 accounting for 67.4% of the variance. However, it was determined that six factors be retained as they explained sufficiently the entrepreneurial orientation of the faculty members (63.4% of the variance in the data). The 'elbow' in the scree plot and 'principle of parsimony' (Handfield and Melnyk, 1998) suggested retaining those six variables.

The first factor dimension is dominant, accounting for 35.5% of the variance, while others accounted for 8.4%, 5.3%, 5.1%, 4.6% and 4.5% respectively. In addition, these factors followed sound theoretical arguments in literature that acting entrepreneurial required a threshold level of industry orientation (Lumpkin and Dess, 1996; 2014; Todorovic et al., 2011; Akinwale, Adelowo, Surujal, 2022).

Therefore, these factors represent entrepreneurial orientation of faculty members in the study area. The structure matrix, as presented in Table 1, shows the correlations between the items and the factors. The coefficients reflect all paths from items to a factor, since the factors are themselves correlated. In

naming the variables, the paths from items to factors were considered (structure matrix) as suggested in Henson and Roberts (2006) and Williams, Brown and Onsmann (2010).

Factor one, with seven strong items correlations, relates to ‘*competitiveness*’ aspect of the entrepreneurial orientation of faculty members. The seven items are: (a) *Interested in supplying research results to companies and facilitate rapid development of marketable products*; (b) *Obligated to transfer my knowledge to industry for the purpose of commercialisation*; (c) *positioning my activities relative to industry requirement*; (d) *measuring my quality and results against industry practices*; (e) *responding to new discoveries in industry with my research*; (f) *I anticipate future market needs in my research*; (g) *I am interested in pursuing spin off creation*. These factors were pooled together and named ‘**competitiveness**’.

Five items load strongly on the second and they tend to describe the perception of the faculty members on the degree of freedom they have to pursue industry-relevant research. These items are: (a) *I am free to pursue innovative research with industry focus*; (b) *I am free to address industry specific needs in my research*; (c) *I am free to apply for joint industry research grants*; (d) *I am free to adjust my industry focused research, if required*; (e) *I am free to integrate business partners in my research projects*. The factor two is named **autonomy**.

Four items load on the third factor and the items relate to the ‘**innovativeness**’ component of the entrepreneurial orientation of the academics. These items are: (a) *I have achieved successful industry relevant innovation*; (b) *I incorporate industry specific ideas into my research projects*; (c) *I placed great emphasis on innovation in my research*; (d) *I am motivated to pursue new research to create radical innovation*.

The fourth factor is named ‘**proactiveness**’ based on the components of the three items that load firmly on it. These items are: (a) *I pursue ideas that may materialise into profitable enterprises*; (b) *I share my results with investors*; (c) *I discuss my research result with industry and ask for feedback*. Item (a) was reversed coded before the analysis was performed.

The fifth factor has four items loading on it and they represent risk-taking propensity of the faculties. Therefore, it is named ‘**risk-taking**’. The items are: (a) *Willingness to accept the risks needed to initiate a spin-off*; (b) *eagerness to exploit new research opportunities with an industry, though they might be risky*; (c) *I dedicated a significant resource to risky industry-focused projects*; (d) *I can accept the risks of lower academic credential in favour of entrepreneurial activities*.

The last factor has just two item loading and they relate to **opportunity recognition** ability of the faculties. These items are: (a) *I generate ideas that can be converted into new product or services (even though I may not pursue)*; and (b) *I identify opportunities to start up new businesses (even though I may not pursue them)*.

Table 1: Factor Loadings from Exploratory Factor Analysis

Structure Matrix	Components					
	1	2	3	4	5	6
COMP1: interested in supplying research results to companies and facilitate rapid development of marketable products	.785					
COMP2: Obligated to transfer my knowledge to industry for the purpose of commercialisation	.766					
COMP3: positioning my activities relative to industry requirement	.756					
COMP4: measuring my quality and results against industry practices	.728					
COMP5: responding to new discoveries in industry with my research	.708					

COMP6: I anticipate future market needs in my research	.683					
COMP7: I am interested in pursuing spin off creation	.585					
AUT1: I am free to pursue innovative research with industry focus		.842				
AUT2: I am free to address industry specific needs in my research		.798				
AUT3: I am free to apply for joint industry research grants		.745				
AUT4: I am free to adjust my industry focused research, if required		.729				
AUT5: I am free to integrate business partners in my research projects		.681				
INNOV1: I have achieved successful industry relevant innovation			.792			
INNOV2: I incorporate industry specific ideas into my research projects			.742			
INNOV3: I placed great emphasis on innovation in my research			.657			
INNOV4: I am motivated to pursue new research to create radical innovation			.596			
PROACT1: I pursue idea that may materialise into profitable enterprises				.786		
PROACT2: I share my results with investors				.660		
PROACT3: I discuss my research result with industry and ask for feedback				.659		
RISKT1: Willingness to accept the risks needed to initiate a spin-off					.874	
RISKT2: Eagerness to exploit new research opportunities with an industry, though they might be risky					.681	
RISKT3: I dedicated a significant resources to risky industry-focused projects					.660	
RISKT4: I can accept the risks of lower academics credential in favour of entrepreneurial activities					.583	
OPPREG1: I generate ideas that can be converted into new product or services (even though I may not pursue)						.849
OPPREG2: I identify opportunities to start up new businesses (even though I may not pursue them)						.831
Variance Explained (%)	35.5	8.4	5.3	5.1	4.6	4.5

Extraction Method: Principal Component Analysis.

Rotation Method: Promax with Kaiser Normalization

Key: Factor 1- competitiveness, Factor 2-Autonomy, Factor 3-innovativeness, Factor 4-proactiveness, Factor 5-risk taking, Factor 6-opportunity recognition

The inter-correlation matrix among the six factors, as presented in Table 2, shows strong significant correlations among the entrepreneurial orientation factors which signified that these factors are fit and could be useful for regression analysis. Comparing the correlation coefficients of EO with COMP, it was observed that relationships with AUT ($r=0.58$), OPPREG ($r=0.48$), INNOV ($r=0.47$)

and RISKT ($r=0.38$) produces high correlations. The least correlation is observed in the relationship with PROACT ($r=0.27$).

Table 2: Component's Correlation Matrix

EO Variables	COMP	AUT	INNOV	PROACT	RISKT	OPPREG
COMP	1					
AUT	0.583**	1				
INNOV	0.476**	0.372**	1			
PROACT	0.265**	0.113	0.296**	1		
RISKT	0.380**	0.253**	0.296**	0.279**	1	
OPPREG	0.482**	0.468**	0.398**	0.192**	0.236**	1

** $p<0.01$

Key: COMP= competitiveness, AUT=Autonomy, INNOV=innovativeness, PROACT= proactiveness, RISKT=risk taking, OPPREG= Opportunity recognition.

Moreover, construct reliability (CR) test was performed on the items that load highly on each of the EO components. The result, presented in Table 3, shows a good overall construct reliability with Cronbach Alfa of 0.92, mean of 3.79 and significant relationship among the items ($F=34.94$, $p<0.01$). For each of the EO construct therefore, ANOVA was constructed to provide further information on the construct reliability, relationships among the items and indicate the mean values. Competitiveness produces a mean of 3.89, Cronbach Alpha of 85% with highly significant relationships among its seven items ($F=10.6$, $p<0.001$). The Autonomy (AUT) component of EO produced the least F-ratio although still significant with good Cronbach Alpha (84%) depicting strong internal consistencies among its five variables. The mean value for AUT is observed to be greater than the computed mean value of other EO items. The proactiveness (PROACT) have the least Cronbach Alpha (0.67), which is within the acceptable level and the strong significant F-ratio. In general, it is observed from the results of the analysis that the overall internal consistency of the scale is very good, given high Cronbach Alphas, means and the F-ratios.

Table 3: Summary Statistics of the EO components among the Academics

Components of EO	N	Number of items	Mean	ANOVA	Cronbach Alpha
COMP	213	7	3.89	10.60**	0.85
AUT	214	5	4.03	6.42**	0.84
INNOV	229	4	3.89	35.69**	0.72
PROACT	213	3	3.27	34.63**	0.67
RISKT	229	4	3.53	51.55**	0.73
OPPREG	218	2	3.83	11.56**	0.71
Overall	229	25	3.79	34.94**	0.92

** $p<0.001$

5. Conclusion

This article sets to examine the pattern and structure of entrepreneurial orientation among the academics in selected Nigerian universities, with specific focus on faculty members in Science, Technology and Engineering fields. Acs et al. (2014) have argued that knowledge institutions are repository of knowledge capital and intellectual assets with great potential for industrial and societal applications. By this proposition, universities as an element of knowledge institutions have been perceived differently by stakeholders, thereby expecting them to contribute to national competitiveness through technology transfer and commercialisation. For the universities to play active roles in technology transfer and commercialisation, it is evidently clear that knowledge production approaches have to shift from Mode I to Mode II, that is, moving beyond mere publication to

patenting and commercialisation (Adelowo and Surujal, 2020; Adelowo and Surujal, 2021). Attitudinal change and institutional reconfiguration are required in the universities to play the new roles more effectively, hence the need for the introduction of entrepreneurship programmes and infrastructure (Olofinyehun, et al., 2018; Adelowo et al., 2021). Despite the introduction of entrepreneurship infrastructure in the universities, Adelowo et al (forthcoming) observes weak technology transfer, industry collaboration and commercialisation among universities in Nigeria. This could be traced to the entrepreneurial attitude or weak perception of the phenomenon in the universities. This study therefore provides detailed information on the entrepreneurial orientation (EO) of academics in the STE fields. The study builds on Entrepreneurial Orientation frameworks advanced in Lumpkin and Dess (1996), Rauch et al. (2009), Covin and Lumpkin (2011), Torodovic et al. (2011), Hormiga et al. (2017), Balasubramanian et al. (2020) and Ruba et al. (2021). EO becomes applicable to universities as they tend to position themselves strategically and attract funding from industry, compete to attract talented students and faculty members as well as striving to improve teaching and innovation performance (Torodovic et al., 2011; Balasubramanian et al., 2020; Ruba et al., 2021).

The study requires data and information on the entrepreneurial orientation of academics in the universities but such data is non-existence in Nigeria. Therefore, a questionnaire was designed based on the aforementioned frameworks to obtain relevant information from the academics, the instrument was pre-tested before the main survey was conducted (Adelowo, 2018). The ethical issues were properly taken care of, as the participant gave informed consent to participate in the survey.

The key findings indicate that the greater the readiness of academics to anticipate or target industry-relevant solutions, the higher their level of competitiveness. Also, competitiveness accounts for the highest number of items and variance observed from the elements of EO in the datasets. This suggest that majority of the academics within science, technology and engineering fields are already taking initiatives to tailor their research to suite industry needs. The realities could be that they may not have the wherewithal and experience required to create spin-off or transfer the inventions to the industry. In this case, the existing intellectual property and technology transfer offices need to intensify their efforts towards the training and awareness creation programme that can empower academics in the pursuit of commercialisation and industry linkage. There is also greater autonomy among the academics to tailor their research towards addressing practical industry and societal needs. In this case, university stakeholders and administrators could create event such as entrepreneurship-spark to showcase some of the innovative projects, allow innovators to address academic colleagues, and where possible, provide initial grant to further refine the invention or technology for commercialisation. Other constructs of EO, such as innovativeness, proactiveness, risk-taking and opportunity recognition ability are high among the academics in the study areas. This further suggests that there are high entrepreneurial tendencies among the academics, a vital sign of readiness for university to become entrepreneurial. In fact, Ismail et al. (2015) have argued that in addition to strong entrepreneurial intention, strong EO is important to propel technology commercialisation and industry linkage among the academia.

To promote the transition of universities to entrepreneurial ones, the study concludes that to sustain and improve the entrepreneurial orientation among the academics, university administrators should provide relevant support and strive to create entrepreneurial champions within the ecosystem. This can be done by strengthening existing technology transfer infrastructures in the universities and scale up the entrepreneurship education programmes to develop competencies among the academics as well.

6. Managerial Implications

The study has important implications for policy and practice. First, academic administrators and stakeholders have the opportunity to leverage high entrepreneurial orientation of academics in the study areas by creating appropriate mechanisms such as innovation hub, innovation exhibition lab and entrepreneurship ignition and counselling unit for them to try out their ideas in the form of business concepts development. In the process of creating these entrepreneurial infrastructures, all faculties and department should be in the known such that anyone with viable ideas could access units to visit in the university. To the academics who have already demonstrated sound entrepreneurial orientation,

there is a need to further encourage them to create ‘entrepreneurial academic club’ where they can share ideas, co-create solutions that will help them realise full scale commercialisation of their inventions. Secondly, government and policymakers need to wake up to robust funding mechanisms for R&D and innovation in the universities, more than ever. There is the need to create Innovation Chair across all universities to further strengthen existing directorates of research and innovation. The Innovation Chair should be coordinated by renown innovators and professors with considerable experience in technology transfer and commercialisation, and strong capacity to provide mentorship to young scholars and innovators in the universities. On the innovation fund that could be mobilised for improved funding mechanisms in the universities, existing arrays of funding such as national research and innovation fund, TETFund-Innovation Foundation and TETFund could be leveraged. Key innovation awards such as Presidential Initiative for Inventors and Innovators and National Technology Exposition Programme which brings inventors and innovators from all walks of life together once a year could be expanded to motivate more academics in the universities.

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The Influence of Demographics on Manager Perceptions Regarding Shared Value In The South African Mining Industry

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Keywords

Perceptions; Shared Value (SV); Demographics; Mining industry

Abstract

Shared Value (SV) has become a management concept and a strategy among corporations for gaining competitiveness and sustainability while solving societal problems. The purpose of this study is to establish whether demographics influence perceptions regarding SV and selected SV antecedents within the South African mining industry. After conducting a literature overview of SV, and by considering relevant variables that were validated in a previous mining study, a hypothesised model was formulated for this study. This study used a quantitative research methodology. A survey with a structured questionnaire was used to collect data. Non-probability sampling was used and 340 respondents participated in the study. Analysis of Variance (ANOVA) tests and resultant post-hoc tests, where applicable, identified the influence of demographics on SV and its antecedents. The study's results revealed that respondents' gender, work experience and occupational level as well as the corporations' size significantly influenced mining managers' SV perceptions. This study expands on SV literature by explaining the connection between mines' SV and managers' demographics. Recommendations could better inform mining managers about SV and encourage its implementation.

1. Introduction

Mining is central to South Africa's social and economic narrative, serving not only as a foundation for other industries but also as a driver of investment, employment, government revenue and infrastructure development (Lane, Guzek & Van Antwerpen 2015; MCSA 2021). Due to the abundance of local mineral resources, the country has established itself as Africa's economic gateway into the global economy (PwC 2021). South Africa is the world's leading producer and exporter of chromium and vanadium, as well as gold, gem diamonds, ferrochromium, platinum, and manganese (Department of Mineral Resources and Energy 2019). Furthermore, the country is the world's third-largest coal exporter and a major producer of cobalt and copper, both of which are essential in the energy industry (MCSA 2021).

However, despite the country's abundance of the world's most sought-after mineral deposits, South Africa's mining industry is unique in that it has not catalysed shared prosperity (World Bank 2019). Regardless the potential to distribute benefits to various stakeholders, mining corporations have mostly failed to create inclusive growth, creating a difficult policy nexus between encouraging mining investments while ensuring that benefits and costs are shared equitably (Cooper & Harvey 2018; Khubana 2021).

Despite building the economy, in a variety of ways, the mining industry has also facilitated social and environmental problems, such as wealth accumulation while at the same time increasing migrant workers, widening wage disparities, community displacements, and causing diseases as a result of the

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industry occupations that have left many families child headed (Khubana, Rootman & Smith 2022; Leonard 2018). The persistence of societal issues and climate change in South Africa are two indicators that mining has not translated into inclusive growth (McKinsey 2019; PwC 2021). For example, the slow action to address climate change and other environmental degradation endangers the most vulnerable citizens (Mpanza, Adam & Moolla 2020; Stewart 2020). Climate change effects include devastating floods and widespread droughts, which not only cripple agriculture and water supply, but also endanger food security (OCED 2019). Furthermore, the mining value chain in South Africa is heavily reliant on foreign capital, skills or expertise, and technology, which sometimes inhibits citizens from getting the maximum benefits of natural resource abundance (Fine & Rustonjce 2018).

Accordingly, to remain competitive, mining corporations have to internalise the costs imposed by their activities and adopt strategies that pivot the potential to create suitability (Deloitte 2018). In this regard, some researchers argue that the discovery of mineral resources and the revenue generated from these helped countries address important socioeconomic issues like poverty and unemployment as well as issues relating to health, infrastructure and education (Du Plessis 2013; Elbra 2013; Poncian 2019). Therefore, mining corporations should develop business strategies that balance community value creation with increased profitability. The failure of Corporate Social Responsibility (CSR) initiatives and Black Economic Empowerment (BEE) policies to create inclusive growth (Diale 2014; Mosala, Venter & Bain 2017; Strydom 2019), which can bring about real socioeconomic transformation, provide the foundation for this study. Research studies in diverse industries such as Food, Beverages, Agriculture, Pharmaceutical, Healthcare, Financial services, Extractives and Natural resources advocate that corporations can enhance their competitiveness by embracing the Shared Value (SV) concept in their business strategy (Hills, Russell, Borgonovi, Doty & Iyer 2012).

Porter and Kramer (2011) define SV as the implementation of organisational policies and practices that establish and sustain a corporation's competitive advantage over current and potential industry rivals while simultaneously advancing social and economic conditions in the communities in which it operates. Since SV means that mining corporations use their capital, access to resources, and unique influence to implement competitive strategies that balance the creation of value for communities with increased profitability for the mines, it is important to identify what influences perceptions on SV and its antecedents, as this could influence its effective implementation. Abrahamsson, Segerstedt, Nygren, Johansson, Johansson, Edman and Akerlund (2014) further postulate that the existing body of knowledge is scanty and insufficiently deals with the interactions between the mining industry and social life in and around the mines. The social dimension encompassing aspects such as gender, diversity and working conditions is relatively underdeveloped in studies of sustainable development in general and the mining industry in particular. Hence the focus of this study to assess the influence of demographics on managerial perceptions regarding SV in the mining industry of South Africa.

2. Problem Investigated

Corporations across various industries, geographies, and sizes are facing increasing demands and expectations from stakeholders to move beyond a profit-making mindset and to act in a responsible manner while attempting to solve societal problems, regardless of their connection to the challenges (McGahan 2020). The focus on and incorporation of SV represents a paradigm shift from the profit-first ideology. However, Awale and Rowlinson (2014) reported that corporations from various industries expanded their business prospects through product or service innovation, re-engineered value chains, and local cluster development, which shows that SV can positively impact corporations. South Africa, as a developing country, offers SV opportunities for inclusive growth (meaning for both communities and corporations) due to its wide range of economic inequalities, social imbalances, and a large population living below the poverty line (Khubana 2022). The unique impact that mining has in South Africa's economy presents corporations with numerous opportunities to ensure lasting value for all stakeholders, in other words, to implement SV.

However, despite South African corporations' opportunity to implement SV, limited studies exist on SV and only a few studies or reports examined aspects relating to SV, such as sustainability, the

environment, innovation, value chains and regulatory conditions (AngloAmerican.org. 2022; Koen 2018; Wachira, Barnard, Lutseke & Ger 2020). There is also no study specifically considering the influence of demographic variables on perceptions regarding SV (Holtbrügge & Oberhauser 2019; Nicolson 2017) and its antecedents. Anecdotal evidence is also limited, with the exception of corporations that adopted SV early on, possibly as a result of the Porter Force (Menghwar & Dawood 2021). In South Africa, the Shared Value Africa Initiative lists only a few. Nicholson (2017) studies SV in a case study assessing the SV that a company is creating through a protected area and its unique relationship with local communities. Another study was undertaken by Mughogho (2020) to understand how organisations create SV from a business model perspective. This study attempts to explore whether respondents' and corporation characteristics (thus demographic variables) impact mining managers' perceptions on SV and selected SV antecedents. Therefore, the question guiding this study is:

Which demographic variables influence SV perceptions among managers within the South African mining industry?

3. Research Objectives

This study's primary objective is to evaluate whether demographics influence perceptions regarding SV and selected SV antecedents within the South African mining industry. The study's secondary objectives are:

- To critically review literature pertaining to SV and its antecedents, and the role of demographics on these concepts.
- To empirically assess SV perceptions in the mining industry, with specific reference to the role of demographics.
- To provide relevant recommendations to the mining industry regarding the role of demographics in SV.

The study assists SV practitioners, policy makers and mining corporations to strategise towards creating and focusing on SV.

4. Literature Review

This study demystifies SV by providing an overview of SV and its antecedents, as well as demographic variables possibly influencing these.

4.1. Shared Value conceptualisation

SV, according to Ollivier de Leth and Ros-Tonen (2022), is about "business" rethinking corporate strategy or competitive strategies, and it can help businesses reduce their long-term societal impact while also addressing all aspects of inclusivity and maintaining a competitive advantage. Blowfield and Dolan (2014) also state that SV is based on the premise of expanding economic benefits for corporations through the creation of societal value, which leads to social change within coexistence communities. Freeman (2017) defines SV as a strategic process, strategy required to bring a corporate strategic plan to completion and implemented through the reconfiguration of a corporation's value chain, which involves a series of activities such as creating, reconfiguring, or sustaining its products or services. Thus, SV is not a single pursuit of short-term economic gains at the expense of communities and the environment advocated for by classical capitalism (Gupta & Pouw 2017), the SV concept rather focuses on creating greater value for all stakeholders. SV is creating a potential win-win outcome situation (De los Reyes, Scholz & Smith 2017). In essence, corporations must solve societal issues at the strategic level that are related to the core value chain (business model), and must generate profits (Rachmawati 2019; Porter & Kramer 2011).

Some critics argue that while the concept changes mindsets, in practice it modifies existing policies and ideas to bring about significant transformation (Corazza, Scagnelli & Mio 2017; Crane, Palazzo, Spence & Matten 2014). SV, in contrast to CSR, aims to reinvent capitalism by commercialising

social and environmental issues and turning them into new profit-maximising frontiers (Voltan, Hervieux & Mills 2017). Porter and Kramer (2011:17) assert that SV “unleashes a wave of innovation and growth” by reinventing capitalism and shifting the paradigm on the relationship between corporations and society. In other words, SV views social issues through the lens of market opportunities, production processes, and profitable products or services. Porter and Kramer (2011) also assert that SV represents a major step towards reconnecting organisations with communities and the environment. As a result, SV constitutes a significant step forward in CSR as it aligns both the performance of corporations and social concerns from the value creation perspective.

The primary distinction between SV and CSR is that the former is the core of the business, founded on the premise that “both economic and social progress are interwoven” (Khubana 2021). SV emerged as a response to CSR’s failure to address societal issues and the effects of climate change caused by traditional “business” approaches (Corazza et al. 2017). SV, supported by stakeholder theory, focus on the development of integrated business approaches (models) that generate both positive economic and societal effects (Crane et al. 2014). SV means a corporation has a better understanding of the competitive environment and creates economic value by addressing social issues (Porter & Kramer 2011).

SV strategy has three approaches, according to Porter and Kramer (2011:7): “reconceiving products, services, and markets, redefining productivity in the value chain, and enabling local cluster development”. Only if a corporation’s social project meets the three criteria listed above, which are interdependent and complementary to one another, and are critical in distinguishing SV from related concepts, can it be classified as SV. To this end, Pfitzer, Bockstette and Stamp (2013) proposes a five-step process for corporations to adopt SV: embedding a social mission; rigorously identifying the social need; measuring the business and social value; creating the optimal innovation structure; and co-creating with external stakeholders.

A few examples of anecdotal evidence of SV’s successful model include Nestlé’s Model (2020) and Anglo American (2017)’s water reticulation project focusing on value chain innovation. Despite the fact that the existing literature on effective SV strategic interventions focuses on large multinational corporations (Odia 2018), the impact of demographics on SV and its antecedents have yet to be empirically established.

4.2. Shared Value antecedents

Although SV is interpreted differently by different corporations, some see it as a competitive strategy, while others see it as a simple sustainability strategy (Corazza et al. 2017), there are some consensus on the variables that can lead to SV. The rationale for the selection of the antecedents stems from various studies or models (see for example Nestlé Creating Shared Value Report, 2020; Network for Business Sustainability, 2016 and Porter & Kramer, 2011). A recent study by Khubana (2021) investigated six antecedents (environmental impact; employment conditions; value chain considerations; automation and innovation; infrastructure development as well as regulatory and legislative conditions) and found after conducting an exploratory factor analysis that *Automation and innovation*, *Mineral resource governance* as well as *Employment conditions* could influence SV in South Africa’s mining corporations.

The concept of innovation and automation has been widely applied across several dimensions, encompassing business model innovation, research and development, digitalisation (artificial intelligence), and product redesign (solution) (Schwab 2017). While automation is defined as the intelligent control of systems utilising appropriate technologies to operate without human intervention, innovation is concerned with the creation of new solutions that fulfil unmet requirements and have a long-term impact (Ralston, Hargrave & Dunn, 2017). According to Hoerlsberger (2019), digital transformation is the use of digital technologies to modify a business model and develop new income and value-creating opportunities. As a result, the connections between automation and innovation could create SV and sustainability. Accordingly, Wachira et al. (2020) assert that mining corporations can develop SV by rethinking new goods and services, markets, mining processes, supply of energy

and water in addition to traditional mining products. This study defines innovation and automation as “the development of technological ingenuity that enables corporations to redesign the processes and products to competitively meet the requirements of stakeholders with sustainable solutions which require minimal human intervention” (Khubana 2021).

Governance necessitates a successful, verifiable execution as well as the commitment of all stakeholders with an interest in a certain project or activity to this framework (Christmann 2021). PwC (2021) defines mineral resource governance as government policy interventions that promote economic and social advancement, including building resilience to climate change. While mining corporations should comply with industry governance frameworks, they should also recognise the need to address societal and environmental concerns profitably (Dufwa & Meconnen 2016). Hence Deloitte (2019) argues that mining corporations have the unique potential to lead the way in bringing the industry, government, and society closer together and creating SV beyond legal compliance. In other words, mining corporations have the opportunity to explore profit-maximizing opportunities that are linked with local community progress because mining has influence over different industries and a value chain with various stakeholders (Khubana 2022). Given the growing consensus that too much regulation and/or regulatory uncertainty can lead to negative outcomes (Hayes & Cloete 2019), mining corporations should lead efforts to develop policies and strategies that create solutions that are unique to each society's needs beyond the minimum legal requirements (OECD 2019). This study defines mineral resource governance as system of laws, rules, voluntary initiatives, standards, norms, practices, and institutions used by industry stakeholders aimed at stimulating inclusive growth.

Mustafa and Ali (2019) described employment conditions as operational procedures whereby the workplace develops specific attributes that result in individuals performing better at work and utilising their potential to meet stakeholder needs while creating long-term competitive advantage. Strikes for higher salaries and improvement of other working conditions have frequently hindered production at numerous mines, while communities have also expressed unhappiness with the appointment of expatriates in the face of rising local unemployment (Wegenast, Krauser, Strüver & Giesen, 2019). This study defines employment conditions as aspects of a person's working environment that influence his or her quality of life, and these factors include contract terms, compensation and benefits, health and safety at work, inclusion and diversity, career progression and how tasks are assigned, as well as management of human resources (Khubana 2021). This study posits that by focusing efforts on improving employment conditions, the mining corporations will be able to increase productivity and profitability while addressing the needs of the communities. The Responsible Mining Index (2018) argued in favour of this observation by claiming that mining corporations that attempt to improve employment conditions are more likely to increase their profitability and competitive advantage while promoting sustainable development, thus SV.

The perceptions of managers regarding mining corporations' focus on and implementation of SV, and its antecedents, might differ based on managers' demographics.

4.3. Demographics' influence on Shared Value perceptions

The competitiveness and sustainability performance, which are known SV outcomes as found by Khubana (2021), as well as other business performance parameters, can be influenced by various factors such as the complexity of the business, market conditions, geographical settings and other internal or external factors (Awale & Rowlinson 2014). Thus, demographic variables relating to corporations' employees (including managers) and the corporations' characteristics might influence SV perceptions. A limited number of studies have examined the impact of demographics on perceptions regarding SV and aspects relating to or part of SV, for example sustainability, innovation, automation and environment (Masood, Alam & Alam 2021; Wang, Fan, Wu & Liang 2019; Moradhaseli, Ataei & Norouzi 2017). However, some demographic variables have been found to influence perceptions, and gender, age as well as education level, to mention a few, are some of the demographics.

Gender, as a demographic variable, has yielded mixed results in terms of perceptions; however, females have frequently been found to be sensitive to issues of sustainability (Fisher, Bashyal & Bachman 2012; Koehler 2016; Swim, Gillis, & Hamaty 2020). Recent studies have also shown positive correlations between environmental consciousness and age as well as level of education, with the youth and higher-educated people being more sensitive to environmental aspects (Kuppusamy & Mari 2017; Nahar, Hossain & Mahiuddin 2022; Wang, Niu, Gan & Cai 2022). In terms of population group, environmental factors can condition the expectations, thus perceptions, and behaviour of a specific population group (Ugolini, Massetti, Galaza-Martinez, Carinanos, Dobbs, Osoic, Marin, Pearlmutter, Saaroni, Sauliene, Simoneti, Verlic, Vuletic & Sanesi 2020).

SV is related to long-term strategic planning aligned to a corporation's core competencies, experience, knowledge and expertise (Masood et al. 2021). In explaining SV, Kramer and Pfitzer (2016) claimed that solving many of the world's problems, from income inequality to climate change, requires the expertise and scalable business models developed by corporations with management and employees who are experienced and involved in significant SV initiatives. This shows that experience and occupational level might be relevant to SV perceptions. Wachira et al. (2020) also found that SV is a strategy or policy that should be driven by experienced leadership of corporations. The employees' work experience and levels of occupation in a corporation influence the adoption SV as a strategy for competitiveness and sustainability (Masood et al. 2021). SV initiatives often begin with the top executives' strategic intent, employing a top-down approach in which their inspiring vision propel the corporation towards a specific mission. According to Odia (2018), SV is driven by top management with a top-down approach across corporations. The cascading effects have an impact on the entire corporation (Bockstette & Stamp 2011; Porter & Kramer 2011). This supports the argument that level of occupation influence SV perceptions. In a study by Wachira et al. (2020), 92% of the respondents acknowledged that SV has to be directed from top management, especially from Chief Executive Officers or Directors. Odia (2018) also confirmed the association between occupational level and SV by supporting the top-down management driven and leadership approach when SV is a key strategy.

Research on SV practices revealed several initiatives that while generating economic value, enabled consequential and sustained market-based solutions for social issues; and these were displayed by conglomerates as well as small social businesses (Borgonovi, Meier, Sharda & Vaidyanathan 2011). Accordingly, SV is used not only by large corporations as a competitive or sustainability performance strategy, but also used by smaller social enterprises (Masood et al. 2021). Porter and Kramer (2011) show that larger organisations like Coca-Cola and Nestlé have resolved the problems of communities as the early adopters of SV. Wachira et al. (2020:17) also argue that in Africa, although small organisations create SV, their impact is yet to be reflected in literature the same way as the impact of large organisations which implement SV as a strategy. Amah and Nwuche (2013) also state that both small and large organisations have their unique characteristics, enabling them to expand market share and revenue jointly while transforming communities. These discussions suggest that the size of corporations might lead to specific SV perceptions.

Based on the above discussions, which shows how demographics may influence people's perceptions regarding aspects relating to SV, for example sustainability, environmental consciousness, SV leadership and strategy, and SV outcomes such as competitiveness, it is worthwhile to evaluate whether demographics influence perceptions regarding SV and selected SV antecedents within the South African mining industry.

5. Hypotheses

The following hypotheses were formulated for the study:

- H¹: Demographic variables influence mining managers' perceptions on the Shared Value antecedent *Automation and innovation*.
- H²: Demographic variables influence mining managers' perceptions on the Shared Value antecedent *Mineral resource governance*.

- H³: Demographic variables influence mining managers' perceptions on the Shared Value antecedent *Employment conditions*.
- H⁴: Demographic variables influence mining managers' perceptions on *Shared Value*.

Figure 1 presents the hypothesised model of the study.

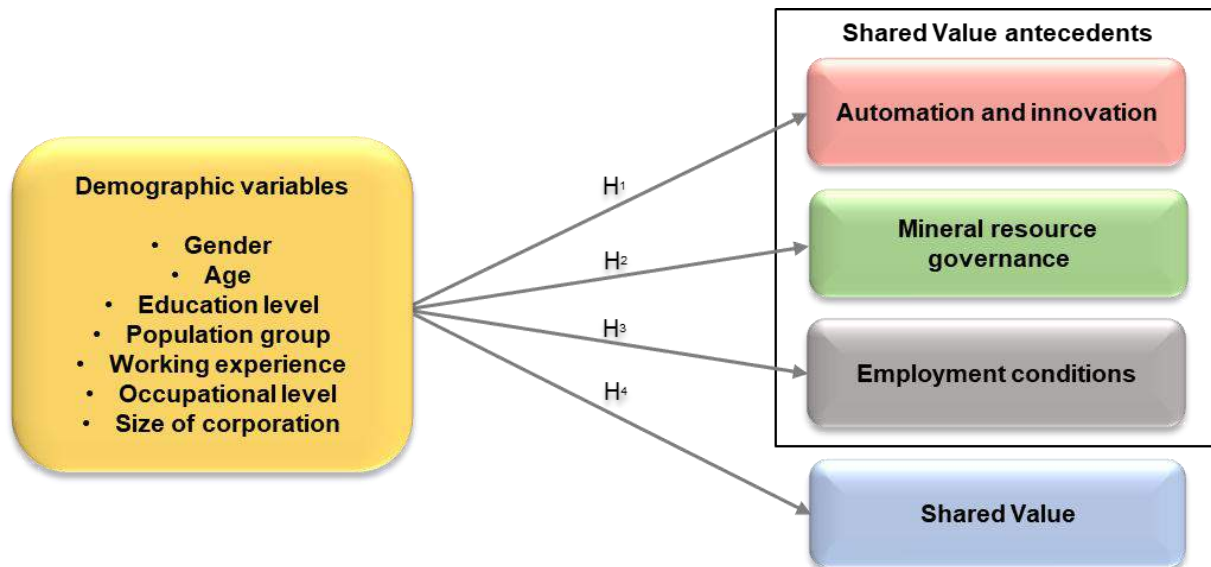


Figure 1: Hypothetical Model of the Study

6. Research Methodology

The study aims to establish whether perceptions regarding SV and selected SV antecedents are influenced by demographic variables, including manager characteristics and characteristics of these corporations. Therefore, in addition to data on respondents' SV perceptions, the aim was to collect data on respondents' gender, age, population group, education level, work experience and occupational level as well as the corporation's size. Since these variables could be easily measured statistically, the study adopted a positivistic research design with quantitative research during the empirical investigation. The study was descriptive and exploratory in nature.

The variables of this study, hypotheses and items in the questionnaire were supported by secondary data gathered from the literature review. In addition, previous studies' validity results supported the four SV-related variables (Khubana 2021) used in this study. The survey questionnaire was constructed accordingly and before the main data collection, consultation with academic experts and a pilot study were conducted to confirm face and content validity respectively. Section A of the questionnaire collected respondents' biographic and demographic data. The instrument also used a seven-point Likert-type scale ranging from 'strongly disagree' (1) to 'strongly agree' (7) for the subsequent sections. Sections B and C comprised of 45 items measuring SV and its antecedents.

The population and sample of the study was made up of managers of mining corporations listed with the Mineral Council of South Africa. The selection of the sample was done through non-probability purposive sampling and therefore respondents from 21 of the 78 mines were selected. The self-administered survey was distributed to potential respondents on corporate professional social media platforms and by means of direct emails. The institutional ethics clearance was received before the commencement of the survey, and respondents were informed of the study's purpose and that their participation was voluntary and anonymous, as well as that all data was confidential. A total of 450 professionals were targeted through the survey and 340 usable questionnaires were obtained and considered for this study's quantitative data analysis steps to evaluate the set hypotheses (Lochmiller & Lester 2017). The rate of return of questionnaires was 76%.

To test the hypotheses of the study, the t-test and Analysis of Variance (ANOVA) techniques were used to determine the influence of demographics on perceptions regarding SV and its antecedents. Following the t-test and ANOVA tests, if significance were evident, resultant post-hoc Tukey HSD tests were performed to differences in the means of different groups. A t-test compares means of two different groups. According to Cooper and Schindler (2011), ANOVA is a statistical procedure used to compare means of several samples, while a post-hoc test is a procedure utilised to determine significant differences between the mean scores of the various categories within each demographic variable. In both the ANOVA the post-hoc tests, scores were considered to reveal significant difference when $p < 0.05$ within the extant means (Gravetter & Wallnau 2012). Practical significance was also measured by calculating Cohen's D where a result < 0.35 showed small practical significance, a result between 0.35 and 0.65 showed moderate practical significance and a result above 0.65 showed large practical significance (Goulet-Pelletier & Cousineau 2018).

7. Empirical Results

The results of the study's empirical investigation are detailed through the sample description as well as the t-test, ANOVA and resultant post-hoc results, where applicable. Finally, the decisions regarding the hypotheses' acceptance are provided.

7.1. Sample Description

Table 1 shows the demographic profile of the respondents. The table summarises the descriptive statistics about the respondents' characteristics including their gender, age, population group, education level, working experience and occupational level as well as the corporations' size.

Table 1: Demographic profile of the sample

Demographic variable	Categories	Frequency	Percent
Gender	Male	203	59.7
	Female	134	39.4
	Not willing to say	3	0.9
Age	20 – 29 years	66	19.4
	30 – 39 years	136	40.0
	40 – 49 years	74	21.8
	50 – 59 years	61	17.9
	60+ years	3	0.9

Demographic variable	Categories	Frequency	Percent
Population group	Asian	4	1.2
	Black	230	67.6
	Coloured	11	3.2
	Indian	14	4.1
	White	81	23.8
Education level	Senior certificate	9	2.7
	Undergraduate	121	35.6
	Postgraduate	210	61.7
Working experience	1 – 5 years	134	39.4
	6 – 10 years	111	32.6
	11 – 15 years	56	16.5
	16 – 20 years	19	5.6
	20+ years	20	5.9
Occupational level	Director	14	4.1
	Executive level	65	19.1
	Middle level	168	49.4
	Lower level	93	27.4
Size of corporation	1 – 50 employees	21	6.2
	51 – 199 employees	19	5.6
	200+ employees	300	88.2

Source: Own compilation

Table 1 shows that the majority of the respondents were males (59.7%), between the age of 30 and 39 years (40%), Black (nearly 68%), middle level (nearly 50%) managers with 10 years or less' working experience (72%). Most of the corporations were large (88% with 200+ employees).

7.2. T-test and Analysis of Variance Results

Tables 2 to 5 display the t-test, ANOVA and post hoc tests' results that reveal the influence of demographics on SV and its antecedents. Within the South African mining industry, the validity of *Automation and Innovation*, *Mineral resource governance* and *Employment conditions* as SV antecedents as well as SV itself, were established in a previous study (Khubana 2021). Therefore, in this study, the influence of demographics on these four variables were tested.

Influence of gender on Shared Value and its antecedents

Table 2 presents the results pertaining to gender.

Table 2: Gender – ANOVA results and significant mean differences from post-hoc tests

Demographic variable	Categories	Mean	Standard deviation	F-Statistic	p-value
PERCEPTIONS REGARDING AUTOMATION AND INNOVATION					
Gender	Male	4.610	1.540	10.104	0.000
	Female	3.844	1.539		
PERCEPTIONS REGARDING MINERAL RESOURCE GOVERNANCE					
Gender	Male	5.250	1.350	10.567	0.000
	Female	4.537	1.451		
PERCEPTIONS REGARDING EMPLOYMENT CONDITIONS					
Gender	Male	5.631	1.091	4.242	0.015
	Female	5.295	0.959		
PERCEPTIONS REGARDING SHARED VALUE					
Gender	Male	4.813	1.399	12.525	0.000
	Female	4.157	1.270		

Source: Own compilation

The t-test result revealed that the gender of respondents has a significant ($p < 0.05$) influence on perceptions regarding SV and all three selected SV antecedents within the South African mining industry. The post-hoc Tukey HSD tests showed that females had significantly lower mean scores for *Automation and innovation* ($M = 3.844$), *Mineral resource governance* ($M = 4.37$), *Employment conditions* ($M = 5.295$) and SV ($M = 4.157$) than their male counterparts. This shows that male managers are more inclined to focus on SV ($M = 4.813$) in the mining industry and perceive automation and innovation ($M = 4.610$), mineral resource governance ($M = 5.250$) and employment conditions ($M = 5.631$) as contributing factors towards SV.

Influence of working experience on Shared Value and its antecedents

The results regarding Working experience are evident in Table 3.

Table 3: Working experience – ANOVA results and significant mean differences from post-hoc tests

Demographic variable	Categories	Mean	Standard deviation	F-Statistic	p-value
PERCEPTIONS REGARDING AUTOMATION AND INNOVATION					
Working experience	1 – 5 years	4.598	1.540	4.294	0.002
	6 – 10 years	3.998	1.641		
	11 – 15 years	4.451	1.421547		
	16 – 20 years	3.331	1.603079		
	20+ years	4.482	1.542053		

Demographic variable	Categories	Mean	Standard deviation	F-Statistic	p-value
PERCEPTIONS REGARDING MINERAL RESOURCE GOVERNANCE					
Working experience	1 – 5 years	5.213	1.279	4.070	0.003
	6 – 10 years	4.646	1.512		
	11 – 15 years	5.143	1.279		
	16 – 20 years	4.272	1.839		
	20+ years	5.258	1.486		
PERCEPTIONS REGARDING SHARED VALUE					
Working experience	1 – 5 years	4.755	1.329	3.493	0.008
	6 – 10 years	4.291	1.437		
	11 – 15 years	4.671	1.390		
	16 – 20 years	3.772	1.463		
	20+ years	4.767	1.085		

Source: Own compilation

As presented in Table 3, mining managers' years of working experience significantly ($p < 0.05$) influence their perceptions regarding *SV* and two of the selected *SV* antecedents, namely *Automation and innovation* as well as *Mineral resource governance*. Through the post-hoc Tukey HSD tests it was found that respondents with a tenure of 16 to 20 years have significantly lower mean scores, with regard to *Automation and innovation* ($M = 3.331$) and *Mineral resource governance* ($M = 4.272$), than those with 6 to 10 years' experience ($M = 3.998$ and $M = 4.646$ respectively). In addition, the post-hoc analysis showed that respondents with the least working experience (less than 6 years) significantly focus more on *SV* (higher mean of $M = 4.755$) than those with 16 to 20 years' experience ($M = 3.772$).

Influence of occupational levels on Shared Value and its antecedents

The significant influence of occupational level on *SV* and its antecedents is shown in Table 4.

Table 4: Occupational level – ANOVA results and significant mean differences from post-hoc tests

Demographic variable	Categories	Mean	Standard deviation	F-Statistic	p-value
PERCEPTIONS REGARDING AUTOMATION AND INNOVATION					
Occupational level	Director	5.370	1.103	5.741	0.000
	Executive level	3.702	1.668		
	Middle level	4.367	1.554		
	Lower level	4.437	1.536		
PERCEPTIONS REGARDING MINERAL RESOURCE GOVERNANCE					
Occupational level	Director	5.869	0.717	5.213	0.001
	Executive level	4.446	1.669		
	Middle level	5.029	1.403		
	Lower level	5.081	1.275		
PERCEPTIONS REGARDING SHARED VALUE					
Occupational level	Director	5.371	1.308	4.178	0.006
	Executive level	4.097	1.324		
	Middle level	4.622	1.375		
	Lower level	4.559	1.405		

Source: Own compilation

For *SV* and two of the selected *SV* antecedents, *Automation and innovation* as well as *Mineral resource governance*, the occupational level of mining managers significantly ($p < 0.05$) influences their perceptions. According to the post-hoc Tukey HSD tests Executives had a significantly lower mean scores for *Automation and innovation* ($M = 3.702$) as well as *Mineral resource governance* ($M = 4.446$) compared to Directors ($M = 5.370$ and 5.869 respectively), Middle- ($M = 4.367$ and 5.029

respectively) and Lower-level (M = 4.437 and 5.081 respectively) managers. In terms of *SV*, Executives also had a significantly lower mean (M = 4.097) than Directors (M = 5.371) and Middle-level (M=4.622) management.

Influence of size of the corporation on Shared Value and its antecedents

The results pertaining to differences in *SV* perceptions based on corporation size are revealed in Table 5.

Table 5: Size of corporation – ANOVA results and significant mean differences from post-hoc tests

Demographic variable	Categories	Mean	Standard deviation	F-Statistic	p-value
PERCEPTIONS REGARDING AUTOMATION AND INNOVATION					
Size (number employees)	1 – 50	5.297	1.232	8.106	0.000
	51 – 199	3.316	1.761		
	200+	4.293	1.563		
PERCEPTIONS REGARDING MINERAL RESOURCE GOVERNANCE					
Size (number employees)	1 – 50	5.548	0.986	7.383	0.001
	51 – 199	3.895	1.716		
	200+	4.993	1.408		
PERCEPTIONS REGARDING EMPLOYMENT CONDITIONS					
Size (number employees)	1 – 50	5.884	0.804	9.573	0.000
	51 – 199	4.564	1.239		
	200+	5.531	1.022		
PERCEPTIONS REGARDING SHARED VALUE					
Size (number employees)	1 – 50	5.368	1.272	7.305	0.001
	51 – 199	3.719	1.691		
	200+	4.529	1.349		

Source: Own compilation

The results of ANOVA test confirm that size of the organisation (based on number of employees) significantly ($p < 0.05$) influence on South African mine managers' perceptions regarding *SV* and all three selected *SV* antecedents. The post-hoc Tukey HSD tests showed that managers of organisations that have between 51 and 199 employees (the mid-size organisations in the sample) were less agreeable to the importance of *SV* and its antecedents. These managers had significant lower means for *Automation and innovation* (M = 3.316), *Mineral resource governance* (M = 3.895), *Employment conditions* (M = 4.564) and *SV* (M = 3.719) compared to both the smaller (M = 5.297; 5.548; 5.884 and 5.368 respectively) and larger organisations (M = 4.293; 4.993; 5.531 and 4.529 respectively). Thus, managers within small and larger mining organisations were more agreeable to the importance and significance of *SV* and its antecedents within their organisations than respondents from medium-sized organisations.

Cohen's D calculations revealed that the influence of demographics on *SV* perceptions were of moderate practical significance based on gender (Cohen's D = 0.49), occupational level (Cohen's D = 0.39) and size of corporation (Cohen's D = 0.59). A Cohen's D of 0.74 showed that the influence of working experience on *SV* perceptions was of large practical significance.

The results of this study show that perceptions regarding *SV* and its antecedents varied significantly based on different demographics, namely respondents' gender, working experience, occupational level and the size of the corporations. Based on the empirical results, the hypotheses were evaluated (see Table 6).

Table 6: Decisions regarding the hypotheses

Hypothesis number	Hypothesis	Decision
H ¹	Demographic variables influence mining managers' perceptions on the Shared Value antecedent <i>Automation and innovation</i> .	Partially accepted; only for gender, working experience, occupational level and size
H ²	Demographic variables influence mining managers' perceptions on Shared Value antecedent <i>Mineral resource governance</i> .	Partially accepted; only for gender, working experience, occupational level and size
H ³	Demographic variables influence mining managers' perceptions on Shared Value antecedent <i>Employment conditions</i> .	Partially accepted; only for gender and size
H ⁴	Demographic variables influence mining managers' perceptions on <i>Shared Value</i> .	Partially accepted; only for gender, working experience, occupational level and size

Source: Own compilation

It is clear that age, population group and education level do not significantly influence mining managers' perceptions regarding SV and its antecedents. Table 3 confirms the hypotheses' partial acceptance and shows that there are two demographic variables, namely gender and size, that significantly influence perceptions on all four variables considered in this study (*SV*, *Automation and innovation*, *Mineral resource governance* and *Employment conditions*). Two more demographic variables, namely working experience and occupational level influence perceptions on two SV antecedents namely *Automation and innovation* and *Mineral resource governance* as well as perceptions on SV itself.

The study's results are also visually presented in Figure 2.

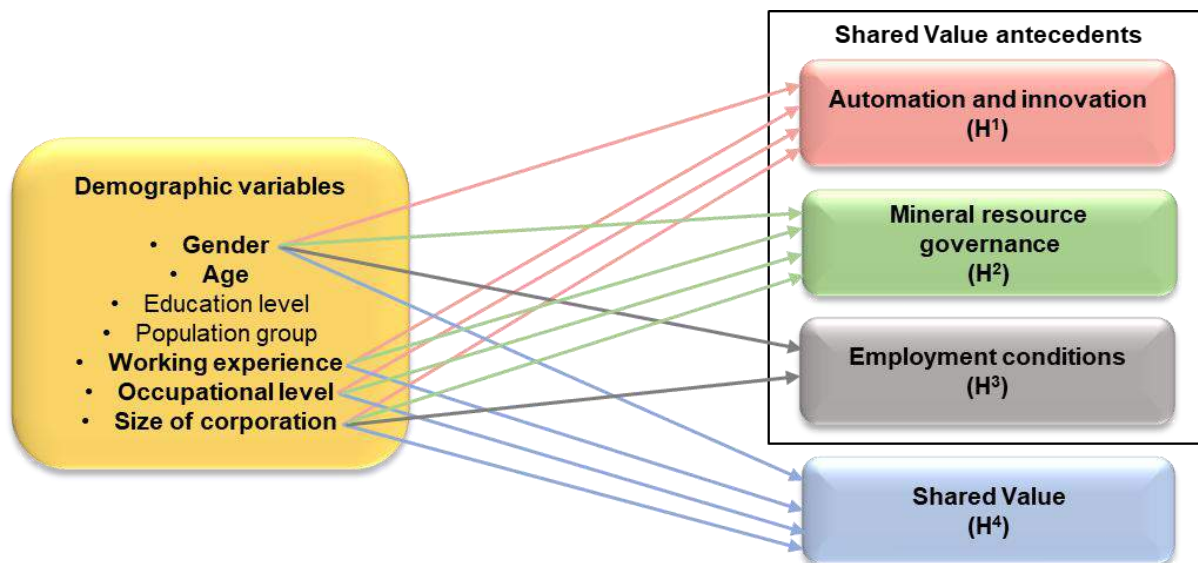


Figure 2: Demographic influences on Shared Value perceptions

8. Managerial and industry Implications

Since age, population group and education level do not significantly influence perceptions regarding SV and its antecedents, the focus of SV training should rather ensure the inclusion of male and female managers, in different working experience and occupational level categories, of medium and large mines.

To improve the focus on the *Automation and innovation* SV antecedent, mines' training should aim to involve and increase female managers' focus on automation. In addition, it is useful for mines to identify that those with less than 6 year's working experience are more inclined towards Automation

and innovation as an SV antecedent. Therefore, mines should train these less experienced managers extensively on mining automation and how it can contribute to SV, as they could still contribute positively towards the mining industry for years to come. A concern is mining Executives' lower focus on Automation and innovation. Wachira et al. (2020) state that SV has to be directed from top management, especially Chief Executive Officers, and therefore mining Executives should be educated on the impact of Automation and innovation on SV so that these leaders could direct corporations' focus on it from the top. Although larger mines had a stronger focus on Automation and innovation than mid-sized mines, their focus was still lower than that of smaller mines. As the most mining corporations in the South African industry are large (also shown by the sample distribution), Automation and innovation towards SV should be more stressed in these corporations.

As for Automation and innovation, the same demographics influence perceptions on *Mineral resource governance* as an SV antecedent. Therefore, managerial implications are similar: training for managers on the importance of governing mineral resources should focus on females, those with working experience less than 6 years and Executives. To ensure mid-size mines also focus on Mineral resource governance, as is the case with smaller and larger mines, they could be targeted on training in this regard.

Since only gender and size of the corporation influence perceptions on *Employment conditions* as an SV antecedent, mining corporations should focus on female managers in medium-sized mines. These managers should be educated on employment conditions – what is required; the status thereof; how acceptable conditions, with which employees are satisfied, could contribute to SV – and they should be encouraged to facilitate these employment conditions.

Finally, an overall increase of the focus on and implementation of SV in mining corporations could be ensured if these corporations involve female managers, those with 16 to 20 years' experience, executives and medium-sized mines. These managers should be trained on SV, what it entails, its antecedents and how it can practically be facilitated in mines. The study's results correspond with Von Liel (2016) and Wachira et al (2020) that reveal that respondents from large corporations show higher SV inclinations. However, with regards to working experience, it was interesting to note that managers in this study with less experience (shorter than 6 years) were more positive towards SV in mines. Thus, training could also focus on this group of managers that still has many years to offer employment in the industry. Another size-related implication: because corporations cannot solve all societal problems, each corporation should identify societal issues (SV opportunities) that are aligned with the corporation's size to ensure viable SV focus areas.

Based on the significant relationships found between the antecedents of SV and demographics, the following general recommendations are suggested:

- Mining policies and practices need to be gender-sensitive, especially in a male-dominated workplace environment.
- Mine management need to tap into the working experience of mine workers who know the tricks of the trade and have a wealth of knowledge that could be shared with younger or less experienced mine workers. Mentorship programmes using seasoned and experienced workers could be invaluable.
- Although executive management might be far removed from the daily mining operations it is important to be in-touch with what is happening on the ground as to be able to draft policies and institute work practices that could enhance shared value.
- Smaller mines could learn much from larger operating mines regarding effective best practices for sustainability and creating SV.

With the possible influence of these demographics (gender, working experience, occupational level and size of the mine), some general recommendations and strategies for leveraging *automation and*

innovation to create SV are outlined below. These aspects could be incorporated in training and mentorship programmes as well as workplace policies and practices for mines.

- *Inclusive value chain innovation:*
 - Promote inclusive value chain development through stakeholder engagement with suppliers and communities.
 - Integrate the Mining Charter and BEE transformation strategies with a Supply Chain Management Policy.
 - Adopt an asset-based model for community capacity building programmes – technical, business and financial services support – which will align sustainable development priorities of communities and the need for profit maximisation or productivity.
 - Innovate through external collaborations for joint learning and continuous improvement.
- *Automation and business model innovation:*
 - Integrate technology and human resource modernisation plans.
 - Collaborate to influence curricula, learning and teaching to build a skilled future ready workforce.
 - Accelerate the establishment of a Mining Centre of Excellence (HUB).
 - Adopt a new digitally-enabled business model – ‘Intelligent Digital Mines’
- *Infrastructure development:*
 - Ensure collaborative infrastructure development through Public-Private Partnerships and shared infrastructure initiatives.
 - Invest in sustainable community development projects.
 - Catalyse the development of the Special Economic Zones.

General recommendations and strategies for leveraging *employment conditions* to create SV are highlighted below.

- Adopt a socially-focused employment strategy – SV Employment Plan.
- Integrate sustainability planning in training and development.
- Strategically collaborate with employees and trade unions to nurture employee engagement and involvement.
- Adopt the shared productive ownership structure.
- Collaborate with government, civil society and communities for the establishment of a centralised royalty system/agency.
- Implement innovative performance management and reward systems.
- Instill a positive culture and working environment.

General recommendations and strategies for leveraging *mineral resource governance* to create SV are outlined below.

- Create mechanisms that could guide decision-making by instilling a culture of shared responsibility and accountability for control and use of natural resources in a sustainable and mutually beneficial way for mining organisations, governments and surrounding communities.
- Exploit opportunities for mining organisations and government to harness their extractive wealth to advance economic development and well-being of communities.
- Translate mineral wealth into broad-based economic, human and social development.
- Mining regulations should not only focus on enhancing state control of resource revenues or private investors’ independence, but rather focus on balancing the role of government in job generation, technological transfer, and broad socio-economic development.
- Ensure that regulatory and legislative conditions related to compliance with the Carbon Tax Act and the Mining Charter are adhered to.

9. Conclusion

The study gathered perceptions of managers working in South African mines. In future research, a comparative study could be conducted among different types of (e.g. gold, diamond, coal, etc.) mines to identify whether different industry mines regard SV differently. This could guide mining corporations on which industries focus on and possibly gain from SV. In addition, more in-depth views could be gained through a qualitative study by means of semi-structured interviews with mining stakeholders.

Overall, this study contributes to the field of SV within the context of the South African mining industry. The study is unique in presenting the SV perceptions of mining managers employees, those responsible for leading mines to “succeed” both financially and socially. It reveals that gender, working experience, occupational level and the size of mines influence SV perceptions. Mining corporations planning to implement SV as a strategy should consider these demographics and ensure inclusivity, i.e. in terms of experience and occupational level to ensure all employees work towards SV. Thus, SV training in mining corporations should focus on specific manager groups, for example less experienced executives, in order to increase the SV focus. Ultimately, as per the definition of SV and the known outcomes of SV such as competitiveness and sustainability (Odia 2018), this could lead to mining and national economy benefits.

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From Start-Up To Scale-Up: Overcoming The Challenges Faced Throughout The Stages Of The Small Business Start-Up Lifecycle

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Keywords

Small businesses; start-up lifecycle; entrepreneurship education; business training

Abstract

Background: Small business growth rates are generally high in developing countries, and government initiatives exist to support small businesses. However, the small business sector continues to report high failure rates, particularly within the first five years of operation. Researchers have suggested that if challenges that contribute to early-stage business failure can be identified and isolated, measures can be put in place to avoid critical start-up pitfalls. Although these challenges are well described in the academic literature, little is known about where these challenges are experienced throughout the start-up lifecycle. It is therefore vital to investigate where in the start-up lifecycle entrepreneurs face challenges.

Purpose: The challenges facing small businesses throughout each stage of the start-up lifecycle were investigated in this article.

Methods: A quantitative research method using self-administered questionnaires was utilised for collecting data from 54 respondents in Free State and Gauteng province through snowball sampling.

Findings: Results indicate that respondents experience personal challenges during the initial stages of the start-up lifecycle while managerial and financial challenges are experienced throughout all stages of the start-up lifecycle.

Conclusions: This article suggests that the risks associated with business failure should be mitigated through entrepreneurship education and business training designed to prepare start-up owners for the key challenges facing the business at every stage of the start-up lifecycle.

1. Introduction

1.1 Problem Statement

Developing countries are characterised by high Total early-stage Entrepreneurial Activity (TEA) rates and low Gross Domestic Product (GDP) per capita income (Herrington, Kew & Kew, 2017:39). TEA rate refers to the prevalence rate of individuals in the working-age population who are actively involved in business start-ups, either in the stage of starting a new business or within the first 3 years after the start of the business (Dantas, Moreira & Valente, 2015:2; Mohalajeng & Kroon, 2016:893).

The impact of small businesses on economic growth is recognized internationally as small businesses play a key role in employment, wealth creation and innovation (Liñán, Paul & Fayolle, 2019:2). Economic growth is often strongly associated with innovation and entrepreneurship as new and

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competitive businesses are created through new ideas and inventions (Liñán et al., 2019:3; Urbancová, 2013:84).

Like elsewhere in developing countries, the South African business landscape is dominated by small businesses as they contribute significantly to the development of the country's economy with 60% of South Africa's job opportunities and 36% of GDP coming from small businesses (Herrington et al., 2017:8). Furthermore, the South African government has run a number of initiatives to support small businesses. Through the Department of Trade and Industry (DTI) and the ministry of small businesses, financial and non-financial support to small businesses continues to be provided. Accordingly, a number of state agencies have been established, for example, Khula, Ntsika, the National Youth Development Agency (NYDA) and the Small Enterprise Development Agency (SEDA).

For developing countries, the development and advancement of entrepreneurship are said to be fundamental and crucial for the growth of the economy (Mohalajeng & Kroon, 2016:898). Small businesses play a key role in employment, wealth creation and innovation not only nationally but in the global economy. In South Africa, small businesses create 60% of job opportunities and contribute 36% towards gross domestic product (Herrington et al., 2017:8) As a result, the South African government has prioritised, through policy and legislative frameworks, the creation and promotion of small business as one of the key ways to address the high unemployment rate and alleviate poverty especially amongst poor masses who are historically marginalised and thus, denied participation in the mainstream economy of the country (Garg & Phaahla 2018:54, Jone, 2016).

In spite of conclusions by Herrington et al. (2017:56) that small business growth rates are generally high in developing countries, and the government initiatives designed to support small business (Department of Trade and Industry, 1995); South Africa still faces challenges regarding sustaining small business growth. The small business sector continues to report between 70% and 80% failure rates, particularly within the first five years of operation (Msimango-Galawe & Urban, 2019:146). Researchers have suggested that if the factors that contribute to early-stage business failure can be identified and isolated, measures can be put in place to avoid critical start-up pitfalls (Garg & Phaahla, 2018:55). Although challenges facing start-ups are well described in the academic literature, little is known about where these challenges are experienced throughout the stages of the start-up lifecycle. It is understood in the literature that businesses go through various stages of the start-up lifecycle from idea generation, concept development, commercialisation and market penetration and survival (Mohalajeng & Kroon, 2016:897). It is therefore vital to investigate where in the stages of the start-up lifecycle entrepreneurs face challenges.

Thus, the main purpose of this study is to investigate the challenges facing small businesses throughout every stage of the start-up lifecycle. Mapping the key challenges to each stage of the start-up lifecycle provides a novel view of the challenges small businesses face in South Africa. Furthermore, this study aims to suggest that these challenges should be mitigated through entrepreneurial education and training designed to prepare start-up entrepreneurs for the key challenges faced at every stage.

1.2 Methodology

This study utilised a quantitative descriptive research design to gather information (Burns, Veeck & Bush, 2017:120). The targeted population included early-stage small businesses in South Africa. The sampling frame and units were narrowed down to include small business entrepreneurs operating in rural areas of the Free State Province in South Africa, particularly Kroonstad, Edenville and Heilbron. Additionally, the sampling frame included entrepreneurs registered with the NYDA (National Youth Development Agency) Johannesburg. A non-probability snowball sampling method was utilised enabling data to be obtained from a larger number of respondents in a relatively short period of time as respondents refer the researcher to additional potential respondents, thus allowing for a cost-effective and simpler means of sampling (Shiu Hair, Bush & Ortinau, 2009:480).

A sample size of 54 respondents was obtained through the snowball sampling method. The choice of using the snowball method was influenced by the difficulty in obtaining lists of respondents from South African agencies that give support to small businesses due to confidentiality agreements signed with small business owners to prevent third-party access to their information as well as the POPIA ACT.

1.2.1 The measuring instruments

A self-administered questionnaire was designed to correspond with the objectives set out for this research (McDaniel & Gates 2016:110). Demographic variables were measured in the first section of the questionnaire and comprised of close-ended multiple-choice questions. Questions related to gender, age, the location of the small business, the sector in which the business operates, the level of education and business training received by respondents as well as the number of businesses each respondent started. Subsequent sections measured the perceptions of respondents regarding the challenges faced in the start-up lifecycle of their business.

A pilot-test was conducted by distributing the self-administered questionnaire to a small fraction of the respondents in order to test for clarity (Malhotra, 2019:441). The validity of the self-administered questionnaire was checked using a face validity process by asking a sample of five entrepreneurs to critique whether, according to them, the questions adequately represented the factors required to answer the research questions (Bryman and Bell, 2015:178). Feedback regarding the questionnaire was incorporated as the researcher ensured that it adhered with the code of ethics formulated by the North-West University. Post piloting, respondents were asked to complete the corrected and updated the self-administrated questionnaire.

Respondents were assured of anonymity as their names and any confidential information did not appear on the questionnaire nor reported in the results. Questionnaires were distributed to respondents electronically. To increase the response rate, after a certain period of time, respondents were sent another email reminding them to complete the questionnaire and also requested to refer additional potential respondents for the study.

1.2.2 Data analysis

Upon collecting data from the self-administered questionnaires, the data obtained were entered, cleaned and analysed by the use of Statistical Package for Social Sciences (SPSS) version 23.

In order to summarise the sample data distribution, descriptive statistics such as the mean, and frequency distributions, were calculated. This was done for the individual items and the summated scores relating to the number of businesses for each small business owner-manager and business training completed.

Cross tabulations were carried out so as to establish the relationship between challenges faced and the stages of small business development. Cross tabulations based on the chi-square test, were also carried out for the relationship between the business sector and the nature of training completed.

1.3 Research objectives

To achieve the primary objective of this study, the following secondary objectives were formulated:

- Examine the demographic profile of small business entrepreneurs operating in rural areas of the Free State Province and Johannesburg in South Africa.
- Identify and summarise the stages found in the start-up lifecycle through literature review.
- Determine the challenges faced by small business entrepreneurs within each stage of the start-up lifecycle.
- Investigate the relationship between small business entrepreneurs' business focus and the nature of business training they have completed, if any.

2. Literature Review

Throughout the years, various scholars have developed frameworks for categorising small business development and growth (Churchill & Lewis, 1983; Hansen & Birkinshaw, 2007; Kazanjian, 1988;

Marais & Schutte, 2010; McAdam & McAdam, 2008). By proposing typologies that categorise businesses into several profiles and framing a developmental sequence among these types of businesses, various stages of small business growth have been identified and examined. Seminal work by Witt (2004) identified the stages of small business development as “measures of start-up success” arguing that the success of a small business depends on its developmental stage. Since then, various modern-day authors have referred to the early stages of small business development as the start-up lifecycle. As such, these stages proposed by Witt (2004) are adapted in this study whilst reviewing the various start-up lifecycles proposed from recent contemporary studies.

2.1 Idea: Develop a business idea and determine need and feasibility

The first stage of the start-up lifecycle, idea development, was understood by Witt (2004:397) to relate entirely to the entrepreneur and not to the business. As such during this stage, the entrepreneur considers his or her entrepreneurial intention. Carrete and De Faria (2019:70) refer to this stage as “the research stage”, arguing a small business is created based on results achieved through basic and applied research conducted by the entrepreneur. During this stage, which Fisher, Kotha and Lahiri (2016:385) refer to as the conception stage, the primary focus of the entrepreneur is on the invention and development of a product or a technology. Creativity is imperative as ideas stem from unexpected incidences, process needs, demographic and behavioural changes, industry and market trends, as well as new knowledge as a result of individual genius (Mohalajeng & Kroon, 2016: 895). As the feasibility of ideas is evaluated through ensuring that ideas integrate with financial objectives of the business, new business opportunities are identified. This stage is referred to as idea generation and screening by Mohalajeng and Kroon (2016:895)

2.2 Plan: Develop a detailed business plan

According to Bessant and Tidd (2018:437), the aptitude of a business to execute an idea and meet its future demand can be evaluated through ranking, profiling and scenario building. These are key activities related to planning. The second stage of the start-up lifecycle is thus, planning (Witt, 2004:397). From Fisher’s (2016:385) perspective, planning forms an integral part of development as all activity is focused on technical issues as defined and directed by the entrepreneur. Thus, during planning, entrepreneurial commitment is determined (Witt, 2004:397). For Filho, Albuquerque, Nagano, Philippsen and De Oliveria (2017:5), this stage is referred to as the “genesis” stage during which the preliminary preparation for starting the business occurs. The entrepreneur begins to envision the possibility to satisfy a personal need and/or a gap in a visualised target-market. Oftentimes the direction of the business is outlined in the business plan. Additionally, Albuquerque, Filho, Nagano and Junior (2016:6) mention that during this stage, the business is not yet constituted as a company, but rather represents a plan of turning the idea into a business.

Mansoori and Lackéus (2019:6) explain that for small businesses the business plan serves as a written document describing the anticipated future outcomes of a business through careful examination of the trends and available historical data. Here, the entrepreneur provides an overview of business’ potential, describing its core product or service, presenting market research, offering marketing and sales plans, stipulating operational and implementation details, and detailing financial projections (Bridge & Hegarty, 2013:29). Accordingly, small business owners and entrepreneurs are often strongly encouraged to write a thorough business plan before implementing their business.

2.3 Create: Set up the business

According to Witt (2004:397), at this stage, the entrepreneur has moved from idea development and business planning to creation. At the creation stage, the business model is rather simple, the entrepreneur is the business. In other words, systems and a formal business strategy are minimal to non-existent as the entrepreneur performs all the important tasks (McAdam & McAdam, 2008:280). Commercialisation, which Fisher et al. (2016:386) referred to as the second stage start-up life cycle, entails the entrepreneur focusing primarily on learning how to make the product work well and on how to produce it beyond the model and prototype. Commercialisation serves as a key part of setting up the business. This stage, according to Filho et al. (2017:5) is the start of the struggle for consumers and results of the business as the entrepreneur seeks a market share to reach positive results for the

business. However, for Carrete and De Faria (2019:70) and Mohalajeng and Kroon (2016:896) setting up the business serves the last stage of small business development placing prototyping, testing and market entry as preconditions for setting up the business.

2.4 Prove: Test and refine the business operation

For Witt (2004: 399), proving is the fourth stage of the start-up lifecycle during which the business tests and refines its operation. Fisher et al. (2016:386) emphasise the importance of building an organisational task system and thus creating business functions that include manufacturing and engineering while other additional activities remain embryonic. For Carrete and De Faria (2019:70), the fourth stage is referred to as “customer portfolio” and regards the attraction of the first customers and the beginning of revenue generation.

Mohalajeng and Kroon (2016:897), on the other hand, point out that during this stage the conceptualised ideas are developed, implemented, and tested. As a result, the initial implementation and deployment of ideas may be refined and further developed. Albuquerque et al. (2016:6) and Filho et al. (2017:5) add that during the prove stage - which they refer to as “Existence” - the entrepreneur produces, sells and delivers the product as a market test for the business idea. Here, the entrepreneur determines whether the product being offered will satisfy a need from the market. In order to reach the next stage of the start-up lifecycle the small business needs to have shown that it is economically viable.

2.5 Operation: Full business operation, survival, and growth

Mohalajeng and Kroon (2016:896) point out that often the final stages of the start-up life cycle – prove and operation- overlap since the developed concept frequently requires buy-in from the targeted market as concepts are tested and implemented in the market for further development opportunities and feasibility studies. Witts (2004:399) identifies the final stage of the start-up lifecycle as the full operation and growth of the business. During this stage, the profitability of the business is determined as the business begins to earn marginal returns on invested time and capital.

For Mohalajeng and Kroon (2016: 896), once products have been refined, formalised and market-tested on a limited scale first, the final stage commences. It involves launching the final product for entrance into the market and thus adding significance to the value chain by creating profits for the business, social advantages for communities, and personal benefits for consumers (Mohalajeng & Kroon 2016: 896). Carrete and De Faria (2019:71) refer to the final stage of the start-up lifecycle as “Expansion” stating that the entrepreneur invests in the marketing and infrastructure of the business to provide the business with the capacity to increase its production scale and meet the high product demand. Collaboration becomes imperative for the survival of the business.

Albuquerque et al. (2016:6) highlight that at this stage the business grows from negative cash flow to break-even. During the survival stage, the small business may grow in size and profit allowing the entrepreneur to receive income without investing large amounts of time or capital (Filho et al., 2017:5). Naturally, at this stage, the challenges associated with product development are overcome and the product has achieved a degree of market success. Here, the entrepreneur persists until the small business reaches a growth rate consistent with market growth (Fisher et al., 2016:385).

Additionally, work by Cole and Lysiak (2017:223) categorises the start-up lifecycle into two main stages: (1) “Early-stage financing” which encompasses refining the product, commencing the marketing, and generating cash flow as well as (2) Execution. Here, the initial product has been developed, marketed, and sold. The entrepreneur seeks out larger injections of funding by relinquishing part ownership or equity of the small business to the venture capital firm. At this stage (execution) if the small business proves to be lucrative and profit exceeds initial funding, the entrepreneur will bridge the expansion and development stages to one of several avenues of more mature financing (Cole and Lysiak 2017:223).

Table 1: Stages of the start-up lifecycle identified in the literature

	Lifecycle stages				
Source Reference	1	2	3	4	5
Churchill & Lewis (1983)	Existence	Survival	Success	Take-off	Resource Maturity
Witt (2004)	Idea	Planning	Creation	Proving	Growth
McAdam & McAdam (2008)	Creativity	Direction	Delegation	Coordination	Collaboration
Marais & Schutte (2010)	Idea identification	Concept definition	Concept feasibility	Concept refinement & formalisation	Exploitation
Albuquerque et al. (2016)	Genesis	Existence	Growth	Survival	
Fisher et al. (2016)	Conception	Development	Commercialisation	Growth	Stability
Mohalajeng & Kroon (2016)	Ideation and screening	Concept development	Prototyping	Commercialisation	Market entry
Cole & Lysiak (2017)	Early stage financing	Execution			
Filho et al. (2017)	Genesis	Existence	Survival	Formalisation	Stabiity
Carrete & De Faria (2019)	Basic and Applied Research	Identification and viable product	Testing and prototyping	Customer portfolio	Expansion
This study	Idea Develop a business idea, determine the feasibility	Plan Develop a detailed business plan	Create Set up the business	Prove Test and refine the business operation	Operation Full business operation, survival and growth

Source: Own compilation

2.6 Challenges faced by small businesses

Both industry and academia have noted that small businesses in South Africa face numerous challenges. These challenges fall within all the start-up, development and growth stages of the business (Mthusi, 2015:12). The lack of managerial and entrepreneurial skills, a fundamental success factor for businesses, serves as one of the main challenges throughout the start-up lifecycle (Garg & Phaahla, 2018:55). This challenge is oftentimes preceded by a lacking of planning. Karadag (2015:29) emphasis that entrepreneurs continue to neglect to formulate strategic plans for their new businesses. Finances have also been identified in the literature as a constant challenge faced by small business. Yadav, Jain, Mittal, Panwar & Lyons (2019:857) mention that not only is the lack of funding a challenge but the entrepreneur's lack of the needed know-how to manage the business' finances. The poor choice in the location and infrastructure of the business have also been noted to lead unforeseen challenges which include inflated rental costs and unreliable electricity supply for example (Ndege, 2015:83).

Prior literature has extensively looked into the challenges and risks entrepreneurs face in small business growth (Bezuidenhout & Nenungwi, 2012, Cant and Wiid, 2013, Churchill & Lewis, 1983, Neneh & Van Zyl, 2012). Thus, these challenges have been summarised into economic, financial, management, social, personal, infrastructural, and planning challenges. Table 2 serves to provide a brief description of these challenges as the purpose of this study was to not examine these challenges but to determine where in the stages of the start-up lifecycle are these challenges prominent.

Table 2: Challenges faced by small businesses identified in the literature

Challenge	Description
Economic	Includes factors such as high-interest rates, high taxes, and high inflation rates.
Financial	Includes difficulty in obtaining funds or credit for business start-up, operating

	expenses/high production costs, poor financial planning, and poor cash flow management.
Infrastructure	Includes unreliable electricity supply, inadequate transport, poor roads, poor water supply, and poor telecommunication.
Market	Includes the inadequate location of the business, high competition, and high transport costs.
Management	Managerial skills include marketing, financial and human, business risk management, business planning, sales and advertising skills. Indications of managerial competencies can be the education of the founder, managerial experience, entrepreneurial experience and start-up experience.
Social	Includes an increase in expenditure or investment in security measures to eliminate or reduce and minimise the likelihood and impact of crime and corruption on the business
Personal	Entrepreneurial competencies, mindsets, personal traits, skills, and knowledge required to succeed in a new venture. Entrepreneurial characteristics will typically include being: creative/innovative, ambitious, motivated, ability to identify opportunities, risk-taking, ethical, problem-solving, adaptable, decisive, friendly, a leader, a team player, tolerant of ambiguity and uncertainty, hardworking and persevering.
Business plan development	The development of an adequate and workable business plan is seen as another key challenge for the success of a new business.

Source: Bezuidenhout & Nenungwi (2012), Cant and Wiid (2013), Garg & Phaahla (2018), Karadag (2015), Ndege (2015), Sarwoko and Frisdiartara (2016), Yadav et al. (2019), Zarefard & Cho (2018)

3. Results and Findings Demographic profile of respondents

The demographic profile of the respondents is shown in Tables 1 – 3. Table 1 indicates that the sample consisted of 54 respondents. Most of the respondents were men (74%) while only 26% were women. The majority of respondents were between 18 and 40 years old (87%) while 13% of respondents were older than 40 years. The sample consisted of only black South Africans. The sample included respondents from the Johannesburg branch supported by NYDA and three rural towns in the Free State province supported by SEDA (Small Enterprise Development Agency). The majority of respondents (57%) completed the questionnaire in Johannesburg, 17% in Edenville, 17% in Kroonstad and 9% in Heilbron.

The respondents were asked to indicate in which business sector their businesses operated as well as the level of education or training they had obtained. Table 3 further points out that the majority of respondents operated in agriculture (30%) and “other” (26%) including education and training, finance, marketing and information technology sectors. The remaining respondents operated in construction (22%), manufacturing (11%), trade (9%) and transport (2%). The majority (59%) of respondents obtained high school education as the highest level of education followed by 30% with a college education (diploma). Only 5% of respondents attained a university bachelor's level degree. Very few (2%) of the respondents had obtained a post-graduate qualification at university while 4% indicated 'other' as their highest educational level. Most (63%) of respondents indicated that they have completed business training against 37% who had not.

Table 3: Sample profile

VARIABLES		F	%
Gender	Men	14	25.9
	Women	40	74.0
Age in years	18 – 40 years	47	87.1
	Older than 40 years	6	12.9
Geographic area	Johannesburg	31	57.4
	Kroonstad	9	16.6
	Edenville	9	16.6
	Heilbron	5	9.3
Business Sector	Agriculture	14	30
	Construction	10	22
	Manufacturing	5	11
	Transport	1	2
	Trade	4	9
	Other	12	26

Highest level of Education	National Senior Certificate (High School)	32	59
	Diploma	16	30
	University Degree	3	5
	Post-graduate degree	1	2
	Other	2	4
Business training	Completed	34	63
	Not completed	20	37

Source: Own compilation from data analysis

Respondents were further asked to indicate the total number of businesses they have started. From the total number of businesses started, respondents were asked to indicate the number of active, sold or closed/dormant businesses. Amongst the 54 respondents, 38 small businesses are active, while 16 businesses have been sold and 17 are closed. Table 3 indicates the maximum number of active start-ups that one entrepreneur operated was 4, the minimum value of zero active start-ups indicates that the entrepreneur is not yet operational, but the business idea has been developed and the feasibility of the idea was researched. The maximum number of sold and closed businesses for a single entrepreneur were 1 and 3 respectively.

Table 4: Total businesses amongst respondents

	Number of businesses	Min per respondent	Max per respondent	Mean	Standard deviation
Active businesses	38	0	4	1.5	0.9
Sold businesses	16	0	1	0.3	0.4
Closed businesses	17	0	3	0.8	1.0

Source: Own compilation from data analysis

Taken together, Tables 3 and 4 provide sufficient evidence for secondary objective 1: To examine the demographic profile of small business owner-managers operating in rural areas of the Free State Province and Johannesburg in South Africa.

3.2 Challenges faced by respondents throughout the stages of small business development

From the literature, the typical challenges leading to increased risk of failure experienced by small businesses have been divided into eight categories namely economic, financial, infrastructure, market, management, social, personal and business plan development. The literature reviewed the stages of start-up lifecycle. In order to understand the challenges entrepreneurs' face when starting businesses, the researcher asked respondents to describe the main challenges they experienced within each stage of the start-up lifecycle. For the purpose of the analysis, the researcher categorised the responses according to the eight challenge categories identified in the literature review. Categorising challenges according to stages of the start-up lifecycle gives an indication of which challenge areas require the most attention per stage. The results are summarised in Table 5.

Table 5: Summary of the challenges faced by respondents per small business development stage.

Small business development stage	Main challenges							
	Economic	Financial	Infrastructure	Market	Management	Social	Personal	Business plan development
1. Idea: Develop business idea and determine need and feasibility	6%	14%	8%	3%	8%	0%	58%	3%
2. Plan: Develop detailed business plan	0%	15%	5%	0%	13%	0%	0%	67%
3. Create: Set up the business	7%	26%	22%	7%	30%	4%	4%	0%
4. Prove: Test and refine the business operation	0%	22%	17%	13%	39%	0%	9%	0%
5. Operation: Full business operation, survival and growth	0%	22%	4%	13%	57%	4%	0%	0%

Source: Own compilation from data analysis

3.2.1 Idea: Develop a business idea and determine need and feasibility

In the idea stage, entrepreneurs develop a business idea and conduct a feasibility study. Respondents indicated that personal challenges (58%) were a major challenge during this stage. From the respondents' responses, personal challenges included their lack of ability to identify the gap in the market; a fear to start; their lack of discipline and passion to continue; an ignorance of market research; their lack of creativity to find new business ideas; and their deficiency in conducting research to determine the feasibility of the business. Respondents also pointed out that they often want to do too much, making the idea too complex and are often overconfident about the business idea.

Table 5 also indicates that respondents found financial constraints (14%) to be another contributor to the challenges they face during the idea generation stage. Respondents pointed out that they often had inadequate capital to fund the idea and later start the business.

3.2.2 Plan: Develop a detailed business plan

In the planning stage, the entrepreneur is expected to develop a detailed business plan. As a result, developing a business plan (67%) was a major challenge as respondents indicated that this is one of the obstacles hindering the development of their business. The respondents listed some of the difficulties they face in developing a business plan. They outlined the challenge of having to define exactly what the business proposal and value proportion is; how much potential customers should be charged for the product or service and the lack of entrepreneurial training on the analysis of the business' needs and resources.

Table 5 further indicates that similar to the idea stages, respondents found financial constraints (15%) to be another contributor to the challenges they face when developing a business plan. Respondents pointed out that this is often related to rejection from financial institutions when applying for funding.

3.2.3 Create: Set up the business

In the create stage, entrepreneurs set up the business. Respondents indicated that management (30%), financial (26%) and infrastructural (22%) encounters proved to key challenges during the creation of the business. From the respondents' responses, management challenges included failure to find a viable business model; difficulty in recruiting skilled employees, unrealistic targets set for businesses and the incorrect implementation of business strategies. Respondents pointed out that their lack of business management skills and experience and knowledge about the business industry they operate in are also contributors to the challenges they face in setting up a business.

Infrastructure challenges during the create stages included difficulty in gathering the necessary resources to set up a business; difficulty in finding a suitable location for business; and difficulty in securing a location that included functional infrastructures such as electricity, security and telecommunication networks.

3.2.4 Prove: Test and refine the business operation

The main challenges facing the business in the prove stage cover a wider range. Respondents highlighted the key challenges within the prove stage include management (39%), financial (22%), infrastructure (17%) and market-related challenges (13%). In this stage, management challenges included the difficulty in recruiting skilled employees; their lack of management skills and management experience; as well as not being able to attend or not being aware of business workshops and training for sustaining the business. Financial challenges, in this stage, involved rejection from financial institutions, inadequate capital to set up the business and inadequate finances to employ a skilled labour force.

Respondents further outlined that market-related challenges mainly entailed trouble in finding customers; failing to meet customer demand and specified needs which in turn has led to a loss of clientele; high levels of competition; as well as a lack of knowledge resources and inexperience in sales, marketing and advertising (both their products and the business).

3.2.5 Operation: Full business operation, survival and growth

For the operational stage, management challenges (57%), financial challenges (22%) and market-related challenges (13%) were identified as a contributor to business failure. Similar to previous stages, respondents highlighted that the incorrect implementation and execution of business strategies and the lack of knowledge relating to the industry in which the business operates, hinder the growth and survival of the business. Other market-related challenges included their inability to identify opportunities in the market; the increasing levels of competition and the lack of communication and networking skills needed to build the overall business and increasing stakeholder engagement and participation.

Although social and economic challenges were not recognised as the most critical challenges faced in starting and running a small business, respondents found to experience social challenges within the create stage (4%) and the operational stage (4%). They noted that social challenges included corruption with the business industry; and lastly theft and crime within the location of the business as well as within operational aspects of the business. When considering the magnitude of the social problems in the areas where respondents' businesses operate, it is interesting that social challenges were rated as least important across all stages.

Economic challenges were indicated for the idea stages (6%) and the create stage (7%). These challenges related to the respondents' lack of knowledge on how to comply with legislation, how one should go about registering for VAT in addition to a lack of understanding of interest rates and taxation in South Africa.

Drawing from the results indicated in Table 5, the secondary objective (3) is reached as the challenges faced by small business entrepreneurs within each stage of the start-up lifecycle have been determined.

3.3 Entrepreneurship and business training

Respondents who had indicated that they have completed business-related training (see Table 3) were asked to specify the nature of business training they had completed. A majority of respondents (58%) indicated that they had completed introductory business training while 15% indicated that they had completed advanced business training. Only 12% of respondents indicated that they had completed formal business training that leads to a qualification. Table 6 below summarises the nature of business training the respondents had completed.

Table 6: Nature of business training completed

VARIABLES		F	%
Business training	Introductory business training - awareness	20	58
	Advanced business training	5	15
	Formal business training for qualification	4	12
	Other	5	15

Source: Own compilation from data analysis

A cross-tabulation, based on the chi-square test, was carried out to determine whether any association exists between respondents' sector and the nature of business training completed. The result of the chi-square test is reported in table 7 along with the results of the cross-tabulation.

Table 7: Cross-tabulation of sector and nature of business training completed

Business sector	N	Nature of business training			
		Introductory	Advanced	Formal	Other
Chi-square (p) = 0.577	34	20 (58%)	5 (15%)	4 (12%)	5 (15%)
Agriculture	9	8 (88%)	0	1 (12%)	0
Construction	7	4 (57%)	0	0	3 (43%)
Manufacturing	3	0	2 (67%)	1 (33%)	0
Transport	1	0	0	1 (100%)	0
Trade	3	2 (67%)	1 (33%)	0	0
Other	11	6 (55%)	2 (18%)	1 (9%)	2 (18%)

Source: Own compilation from data analysis

From Table 7 it is clear that a large majority of respondents (58%) have only completed introductory business training providing awareness on business while only 15% have completed advanced and other types of business training (also seen in table 2). 88% of the respondents from the agricultural sector had only completed introductory business training while only 1 (12%) respondent had completed formal business training that leads to a qualification. Respondents in this sector have not completed any advanced business training. Respondents from the construction sector completed introductory business training (57%) and other kinds of business training respectively. Respondents in this sector have completed no advanced or formal business training. Only 2 (67%) respondents in manufacturing have completed advanced business training while 1 (33%) has completed formal business training. Only 1 respondent in the transport sector has completed formal business training. Respondents in the trade sector have completed both introductory (67%) and advanced (33%) business training. Respondents who had indicated that they are from other sectors have either completed introductory business training (67%), advanced business training (18%) or other forms of business training (18%). Only 1 respondent indicated that they had completed formal business training. The Chi-square test determined whether an association exists between variables, resulting in no significant differences among the respondents' business sector (Chi-square (p) = 0.577) and the nature of business training completed by respondents.

Table 7 provides sufficient evidence of secondary objective 4: To investigate the relationship between small business owner-managers' business focus and the nature of business training they have completed if any.

4. Discussion and Conclusion

Mazzarol, Volery, Doss and Thein (1999) motioned that demographic factors such as age, gender, education and work experience have a considerable impact on entrepreneurial intention and venture success. However, the findings in this study demonstrate that respondents, regardless of their demographics, experience various challenges throughout the stages of the start-up lifecycle. Thus, this study supports the findings of Amidžić (2019:52) that demographics such as age are no barrier to entrepreneurship success.

Personal challenges refer to the entrepreneurial characteristics of respondents. These typically include being creative, innovative, ambitious, their ability to identify opportunities, calculated risk-taking, problem-solving, adaptable, decisive, a leader, a team player, tolerant of ambiguity and uncertainty, hardworking and persevering (Garg & Phaahla, 2018:55). Personal challenges were mostly experienced in the idea stage of the start-up lifecycle. These results confirm the argument made by Bird (1988) that at the business inception, the business outcomes such as its development, written plans, growth and change are based on the entrepreneurs' state of mind. One can expect that if the personal challenges are not adequately addressed at this initial stage of the start-up lifecycle, the success of other stages will also be negatively affected.

Management challenges played an increasingly significant role from the Create to the Operation stages of the start-up lifecycle. Managerial challenges include lack of marketing, financial and human resource management skills. The inability to formulate business plans and operational strategy also serve as indicators of a lack of managerial competencies. This can be attributed to the entrepreneur's education, managerial experience and entrepreneurial experience (Zarefard & Cho, 2018:5). This result confirms the findings of Henrico and Botes (2016:150) and Hutchinson and De Beer (2013:238) that small business entrepreneurs lack certain managerial skills and competencies necessary to operate their business successfully. The lack of business knowledge and managerial competency often contributes to an inability to access funding or managing the finances of business correctly.

Finances are a major concern for small business entrepreneurs (Karadag, 2015:30). As such, financial challenges were reported to have a negative impact on businesses across all stages of the start-up lifecycle. This finding corresponds to Garg and Phaahla (2018:54) who found financial challenges to be the main business start-up risk factor. Herrington et al. (2017:56) report in the Global Entrepreneurship Monitor that a lack of access to finance and poor profitability are among the chief reasons for business discontinuance in South Africa. Within the Plan and Create stages, financial challenges include poor financial planning and difficulty in obtaining funds or credit for the business. During the Prove and Operation stages, financial challenges include high production costs as the product is brought to market and high operating expenses and poor cash flow management.

To limit some of the challenges experienced by entrepreneurs throughout the stages of the start-up lifecycle, extensive and continuous entrepreneurship education and training is required. In the literature, education and training were pointed out as positive contributors to the management capacity of new businesses in South Africa. The lack thereof reduces management capacity which leads to a low level of entrepreneurial creation and the high failure rate of new businesses (Herrington et al., 2017:53). Findings in this study reveal that entrepreneurs mostly complete introductory training for business and entrepreneurship awareness failing to advance into deeper entrepreneurial and management knowledge. Findings also indicate that entrepreneurship and business training is imperative regardless of the industry and focus of the business. This finding is supported by Sarwoko and Frisdiantara (2016:39) who argue that the successful growth of a small business is often hindered by a lack of managerial and entrepreneurial competency regardless of the sector in which the business operates.

5. Recommendations and Managerial Implications

From the findings and discussion, this study proposes extensive entrepreneurship education and business training for small business owners as a means to mitigate the challenges entrepreneurs face throughout the stages of start-up lifecycle.

The education and training proposed should be formulated to help entrepreneurs and managers in identifying possible contributors to the key challenges facing the business at every start-up stage and how to overcome the contributors early. In other words, entrepreneurship education and business training should include risk assessment training during the Planning and Proving stages of the start-up lifecycle as well as risk management actions throughout the business Operation stage.

Entrepreneurship education and training should focus on developing business research skills, particularly as a way to curb challenges faced within the Ideation and Creation stages of the start-up lifecycle. In doing so, small business owners and entrepreneurs acquire the know-how on evaluating and refining the business idea and identifying corresponding opportunities and markets (including the demands of potential customers).

Additionally, entrepreneurship education and training with particular focus on bootstrapping as a financial strategy during the initial stages of the start-up lifecycle could reduce the entrepreneurs' reliance on corporate funding institutions to start the businesses as these are risk-averse and accompanied by high-interest rates. Thus, expanding and strengthening entrepreneurship education and business training with particular focus on the stages of the start-up lifecycle will assist in reducing the challenges within each stage and in essence improve the intellectual capacity of entrepreneurs and small business owners.

The findings reported in this article provide implications to both private and public sector by suggesting that these challenges should be mitigated through entrepreneurial education and training designed to prepare start-up owner-managers for the key challenges faced at every stage of small business development. The study assists policymakers in making better decisions about what entrepreneurial and managerial skills are needed to encourage successes in taking business ideas to market and in essence promoting a total early-stage entrepreneurial activity in South Africa.

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A Comparison of Hidden Champions in the United States of America (USA) and Germany using Trends, Key Performance Indicators and Success Factors

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Keywords

Hidden Champions; medical devices industry; success factors; Germany and USA comparison; international; strategic; management; KPI key performance indicator; Medical Mountains; Karl Storz; NuVasive;

Abstract

This paper focuses on the comparison of Hidden Champions in the United States of America (USA) and Germany using financial and non-financial Key Performance Indicators (KPIs). Two companies (NuVasive Inc., USA and Karl Storz SE & Co. KG, Germany) from the medical device industry were analysed and compared in terms of their success factors. The comparison of the two countries was important to understand the nature of their businesses in each country and also to determine the special characteristics of Hidden Champions in one country compared to the other country.

The research shows that American Hidden Champions are younger than those in Germany. This made it more difficult to compare because the companies are in different lifecycle stages. The study however still found that the Hidden Champions in both countries have a high export ratio as well as a high R&D expenses to revenue ratio in common. The data further showed that the Hidden Champions were affected by Covid-19, regardless of their location. It was also found that the managerial styles of Hidden Champions were heavily influenced by the culture and structure of the respective countries. The fact that an in-depth analysis of a limited number of companies was done complicated the conclusions on some of the KPIs. This paper can be used as a base to do further similar research on Hidden Champions in other industries within Germany and the US.

1. Introduction

The term Hidden Champions (HC) consists of two contradicting words “Hidden” and “Champion”: The question can in fact be asked: How can a company be a champion, but at the same time be hidden? Hidden Champions as a term had originally been used to describe unknown world market leaders in a niche by Hermann Simon in his German management journal in 1990 (Simon, 1990, pp. 875–890). Hidden Champions companies in Germany are responsible for 70% of all exports in the ‘Mittelstand’ of the German economy (Simon, 2015, p. 30). Therefore, comprehensive research was done about German Hidden Champions in Germany. We have however not been able to find in-depth research about Hidden Champions in the USA, although they have the second most Hidden Champions (Zitelmann, 2019) in the world. This discovery motivated the research for this paper namely to do research about companies in the same industry but with different KPIs and to analyze the difference in Hidden Champions between the two countries. The manufacturing healthcare device industry was selected as it is growing rapidly and is innovative, digital and future oriented (Ok/Wellner, 2019 I, II, III). Two companies were selected namely: NuVasive Inc. San Diego, USA and Karl Storz SE & Co. KG, Tuttlingen, Germany. Both are operating in the healthcare device industry and are world market leaders in their respective niches.

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2. Problem Investigated

The main objective of the paper is to compare and provide an overview of the Hidden Champions' environments in these two countries – Germany and USA, by using company examples in the medical devices industry. Firstly an understanding of what Hidden Champions are should be provided for a better understanding of the problem to be investigated.

In the following sections, the paper discusses the market trends of Hidden Champions in terms of a global perspective, and for the two countries specifically. The KPIs to be used for analysis of the companies are also defined. Thereafter follows in-depth research about the two companies from the medical device industry. Finally, a comparison between the characteristics of Hidden Champions in the two countries is made. This can be deduced from the analysis of the two companies and the general market knowledge obtained.

3. Research Objectives

The main research objective of this paper is to compare the Hidden Champions from Germany and those from the US using financial KPIs and non-financial KPIs. This will identify special characteristics for the country specifics, and, furthermore, assist future Hidden Champions companies to become successful market leaders. Furthermore, an analysis of the medical device industry is provided not only for the two companies discussed, but also on a global level.

4. Hypotheses

The following hypothesis was formulated for the study, based on the existing knowledge of Hidden Champions market in Germany and the very scarce information of this segment in the US. The hypothesis is made that gaining a better understanding of the two markets could provide a better understanding of the reasons for the dominance of German Hidden Champions, in comparison to the US Hidden Champions.

5. Literature Review

The aim of the literature review is to expand the current understanding and knowledge on available literature, considering the two main topics: Hidden Champions and the Medical Technology Industry.

5.1. Hidden Champions

There has been for a very long period a shortage of available resources of information on Hidden Champions. Research on the topic has nevertheless been growing over the past years, overcoming this lack of information (Schenkenhofer, 2022). In his literature review of sources on Hidden Champions, Schenkenhofer summarizes previous research on Hidden Champions. He explained firstly the definition of Hidden Champions, starting with Simon, who not only defined them via using clear characteristics on the requirements of companies to be Hidden Champions, but also updated the study, based on changing market demands, leading to more competitors (Simon, 1990, 2009). Wellner further also identifies the different leadership styles of Hidden Champions (Okl/Wellner, 2019 I, II, III).

5.2. Medical technology industry

The importance of the health care sector for people's overall health and wellbeing is an important assumption in analysing this sector. Furthermore, according to Maresova et al (2015), the most important part of the health care sector is the medical technology industry. The medical technology industry therefore warrants further academic research and analyses.

6. Research Methodology

Relevant published books, online sources from company official websites, and published articles were used in the literature study for this paper. The research further uses mainly qualitative data, including existing sources on the problem investigated, as well as interviews with companies' representatives. Additional quantitative data is presented in a KPI analysis.

Furthermore, as the conclusions in this paper are mainly based on comparing two Hidden Champions in two countries, there were multiple key performance indicators (KPIs) identified. In the following subsection eight KPIs will be presented, along with their descriptions in two main categories: four financial and four non-financial KPIs.

Aside from the eight common KPIs, 2 KPIs will be chosen specific to the industry, since the important KPIs needed in the industry might vary. One will be financial KPIs and the other will be a non-financial KPI. Formulas used and the reasons of choice will now be further discussed.

6.1. Financial KPIs

As established, for the financial KPIs : Net Profit Margin, Equity Ratio, Operating Cash flow Margin and R&D Expense Ratio were chosen to evaluate the companies in a quantitative aspect.

Net Profit Margin Ratio

The formula for net profit margin ratio is as follows:

$$\text{Net profit margin} = \frac{\text{Net profit (Net income)}}{\text{Revenue}} \times 100$$

With the net profit margin ratio, we can assess the companies' productivity and ability to expand their target market, even with a negative net profit margin.

Operating Cash flow Margin

The formula for operating cash flow margin is as follows (Kenton, 2021):

$$\text{Operating Cashflow Margin} = \frac{\text{Cash Flow from Operations}}{\text{Revenue}} \times 100$$

Operating cash flow margin is another KPI that indicates the profitability of the company in terms of cash. The operating cash flow margin shows the cash earned by the operation and include amortization and depreciation, relevant to operation. A high operating cash flow margin is good for the company as it shows that the company is running efficiently.

Equity Ratio

The formula for equity ratio is as follows (Institute, Corporate Finance 2020):

$$\text{Equity ratio} = \frac{\text{Total Equity}}{\text{Total Asset}} \times 100$$

The equity ratio indicates how much debt the company has. A high equity ratio shows that the company is willing to keep the ownership of the business with their shareholders and not willing to accept external sources of the funding. A low equity ratio does not necessarily indicate that the company is struggling but can also mean that the company is trying to grow aggressively with debt (Marr, 2012). Based on the equity ratio, we can assess how willing the company is to take external funding and expand the business.

R&D Expense Ratio

The formula for R&D expense ratio is as follows (Y Charts, n.d.):

$$\text{R\&D expense ratio} = \frac{\text{Research and Development Expense}}{\text{Revenue}}$$

The R&D expense ratio shows how much the company spend on research and development in comparison to revenue. By looking at this KPIs, we are going to assess where the company seeks growth. It can be possible that the company is not spending on R&D, but rather on actively acquiring

smaller companies with new technology. Whether to invest heavily into the R&D or to acquire a new company can vary due to different managerial styles, which need to be analyzed.

6.2. Non-Financial KPIs

For the non-financial KPIs, we are more focused on qualitative analysis. Since available data on non-KPIs vary from company to company, these KPIs have broader definitions than the financial KPIs explained before.

The non-financial KPIs that will be used to analyze the Hidden Champions companies are Managerial style, Innovation Approach, Customer Relationships and Export Ratios.

Managerial Style

Managerial style can be defined by various aspects, but this paper is focusing on ownership structure, levels of organization and the employment process of employees and managers. By focusing on these topics, we can assess the impact of the company culture (Okl/Wellner, 2019 I, II, III).

Innovation Approach

Innovation of the company can be achieved through internal or external sources. Choosing organic growth or searching for external growth remain the respective companies' choice. Internal sources include active investment in R&D, compared to revenue. On the other hand, companies can seek growth from external sources, more costly, but also less risky, compared to R&D investments.

Customer Relationships

Customer relationship is the strategy utilized by the company to manage the channels to communicate to their retained customers or to introduce themselves to new customers.

Hidden Champions are not actively advertising to the public, therefore the marketing approach of the companies will be interesting to analyze. To show that their products are the best in the industry, Hidden Champions must have their products' quantitative or qualitative information.

Export Ratio

Export ratio is a quantitative KPI that shows how much revenue is derived from abroad. Hidden Champions base their revenue on the global market, and therefore has a high export quota of 61.5% (Simon, 2015). The export quota of the companies throughout the recent years will be analyzed with this KPI, and will determine how this influences the strategy of the company.

7. Results and Findings

As already mentioned, to gain understanding of the Hidden Champions market differences between the two countries we firstly need to clarify what a Hidden Champion is.

7.1. General Overviews on Hidden Champions

A company should meet the following requirements to be classified as a Hidden Champion:

1. The company should either be first, second or third in the global market, or must be first on its continent, in terms of market share. Should the company's exact market share, relative market share is used, or the market share information that is provided by the company is used.
2. The Revenue of the company should be below 5 billion US dollars.
3. The company should have low level of public awareness (Simon, 2009, p. 15).

As the market is growing, the upper bar of defining Hidden Champions has increased from 3 billion dollars in Simon's original paper to 5 billion dollars in a recent publication (Okl/Wellner, 2019 I, II, III).

When discussing Hidden Champions, it is important to note in which sectors they are mostly operating. According to Simon 69.1% of the Hidden Champions are operating in industrial goods,

followed by 20.1% in consumer goods and 10.8% are service providers. Many of the Hidden Champions are operating in engineering, electronics, metal processing and chemical sectors (Simon, 2009, pp. 20–21).

Looking from a financial perspective, Hidden Champions have an average of 434 million dollars revenue in 2009, which is three times higher than in Simon’s original 1999 study. Growing average revenue indicates rapid growth of the market (Wellner, 2018).

The most common characteristics of Hidden Champions are globalization, innovation, and profitability. As Hidden Champions are the market leaders, they do not limit themselves to domestic markets, but also target the global market. Export quota of Hidden Champions is on average 61.5%, which shows that the Hidden Champions are the driving force behind a country’s export ratio (Simon, 2015, p. 31). They also invest heavily in innovations and R&D. This often leads to technological innovations, allowing them to gain competitive advantage and focus on specific technology or niche markets with the finest technology (Simon, 2009). The most recent trends for Hidden Champions include an increase in merger and acquisition transactions from Chinese companies, due to the ability for Chinese companies to acquire a string market representative with advanced R&D resources (Wellner, 2018).

Lastly, as shown in Figure 1, the Germany and US hold the highest positions in the number of Hidden Champions worldwide (Zitelmann, 2019). The decision to focus on these two markets for this study, is therefore justified.

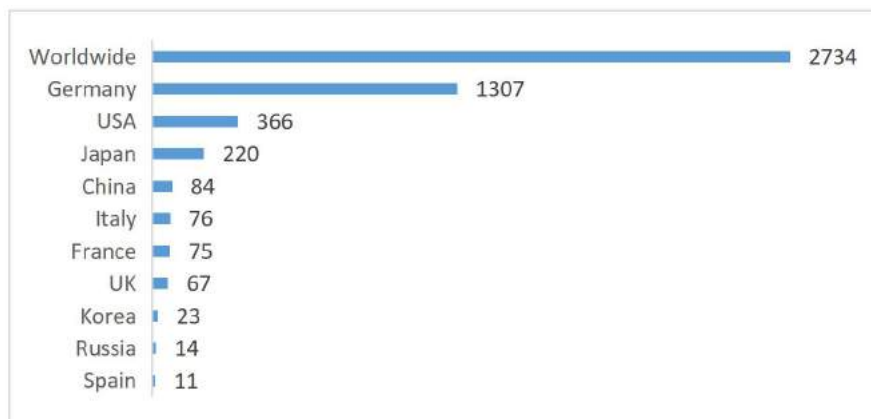


Figure 1: Number of Hidden Champions Global vs countries (Wellner, 2018)

7.1.1. Hidden Champions Market Trends in Germany

Germany is the country in the world with the largest numbers of Hidden Champions. More than 1300 of the World’s 2734 are headquartered in the country (Benz, Block & Johann, 2021).

German Hidden Champions have developed using Innovation/ Customization-based business strategies that focus on technological excellence in markets with few competitor companies, leading to world market leadership attained as a consequence of entering these niche markets (Schlepphorst, Schlömer-Laufen & Holz, 2016).

The factor specialization and continuous innovation of these companies have continued throughout the years, and most of the country’s hidden Champions remained owned by families. According to IFM (Automation made in Germany) definition, up to two natural persons or their family members (directly or indirectly) holding at least 50% of the shares of such companies. Amongst the Hidden Champions in Germany, this is the case in more than 62% of these companies, according to Schenkenhofer (2022). German Hidden Champions average the founding year at 1917, bringing up another important aspect of German HCs, which is the continuation of family traditions. (Rammer &

Spielkamp, 2019). More than just having financial goals, German HCs have more intrinsic goals that relate to the honor and inner sense of duty of the successors.

The distribution of the industries of German Hidden Champions is led by the mechanical engineering industry, with 33.15% of HCs, followed by the electrical engineering companies (10.94%), then automotive (9.17%), chemistry & pharmaceuticals (5.86%) and metal ware (4.53%). However, because of its niche market nature, over 84% of all German Hidden Champions are focused on B2B business and 70% of their revenue comes from exports. This illustrates another aspect of German HCs, namely how international focused these companies are. A niche strategy approach naturally involves intense internationalization for each market that exhibits a need for the product (Wellner 2018), as demand would just not be high enough if the company would stay only in its own country (Okf/Wellner, 2019 I, II, III).

It is interesting to point out that over two thirds of German Hidden Champions are located in rural areas (Schenkenhofer, 2022). The German states where most HCs are located, are Nordrhein-Westfalen, followed by Baden-Württemberg, then Bayern and Hessen (Benz, Block & Johann 2021). It has been proven that German Hidden Champions have had an excellent past success record and have a positive impact on the German Economy. The Covid-19 pandemic has however also exposed some of the shortcomings of these German companies and digitalization has now become a top priority for most of the Hidden Champions (Rietmann, 2021).

7.1.2. Hidden Champions Market Trends in the USA

The USA is the second largest country in the world with Hidden Champions. However, research on Hidden Champions in the US is not as active as in Germany. Research that was done analyzing 101 Hidden Champions located in the USA showed that out of 101 companies analyzed, 19.8% are located in California, followed by New York 12.9%, Texas 7.9%, Florida 6.9% (Hoffower, 2020). 35% of the Hidden Champions that is located in California are in the aerospace and defense industries. Most of the Hidden Champions in the US are operating in electrical equipment & parts (19.6%), followed by aerospace and defense (14.7%) and security & protection services (7.8%). Relatively new areas, such as security protection and services, and pollution treatment controls have added up to 13.6%. This shows that the Hidden Champions in the US are mostly interested in future focused industries.

The average operating years of Hidden Champions in the US is 21.2 years. Hidden Champions in the US are relatively new companies compared to those of rest of the world. Only 10.2% of the Hidden Champions have been operating for more than 50 years. An interesting fact is that 25.0% of the Hidden Champions have been operating less than 5 years (Refinitiv).

The average number of employees of these companies are 3,156. This number is higher than the world average of 2,037 (Simon, 2009, pp. 257–261). The average revenue of Hidden Champions in the US is 585 million dollars which is higher than the average revenue in the world. However, the average of the US is for the year of 2020, and we cannot therefore conclude that the Hidden Champions in US has higher revenue in general than the rest of the world.

Since most of the Hidden Champions base their revenues on exports, the shutting down of the countries due to Covid-19 had a negative impact on the revenue of the Hidden Champions resulting in them struggling to recover from this post-covid period. The American Hidden Champions showed that despite the global disturbance, the companies had the ability to manage their companies, resulting in a positive earnings before interest, taxation, depreciation and amortization (EBITDA).

7.2. Medical Device Industry

Having analysed the Hidden Champions market specifics worldwide and for the two countries analysed, now follows an overview of the medical device industry, as this is the focus industry of the two companies, and subsequently, of the paper. First, this sector will be briefly introduced to provide an overview. This is followed by a description and explanation of the selected sector specific KPIs.

After gaining understanding of the medical industry, the two companies, Karl Storz SE & Co. KG, Germany and NuVasive Inc., USA will be examined in detail.

7.2.1. Industry Overview

Medical technology is a global growth market characterized by a fast pace of innovation (Freiland, Phillipi & Yzer, 2020). Based on the Spectaris annual report (2021/22), the global market value for medical technology was \$446 bn in 2020 with the minimally invasive sector, owning the highest market share of 10.8%, followed by Cardiology (10.4%) and Orthopedics (8.5%). According to a conservative estimate, the global market for medical technology is expected to grow at an average annual growth rate of more than six percent, and is forecasted to reach a value of \$582 bn by 2025.

North America is the leading market for medical technology with a market share of 38.6% in 2020, followed by Asia and Pacific (27.4%) and Europe (25.7%) (*SPECTARIS Jahrbuch 2021-2022 2021/2022*). Seven out of ten MedTech companies with highest turnover are US companies (Freiland, Phillipi & Yzer, 2020). In addition, 6500 small and medium sized companies are in North America. Asia is the second largest market for medical technology after North America, leaving Europe behind. Several Asian countries, such as Singapore and China, are very open to innovations and are providing immense support for technical developments. Europe is the third largest market with 27,000 MedTech companies, out of which half are based in Germany, and are characterized as small and medium-sized businesses. In Europe, 650,000 people work for MedTech companies, out of which 210,000 are in Germany alone (Freiland, Phillipi & Yzer, 2020). Siemens Healthiness and Fresenius Medical Care are the German based companies with the highest turnover. A further three of the top ten companies worldwide are situated in Europe, being Philips, which is based in the Netherlands and Novartis and Roche in Switzerland.

Based on an analysis by Ernst & Young for the U.S. and European MedTech public companies, the industry revenue grew by 6.3% despite the global Covid-19 pandemic and supply chain disruptions of 2020 (Ernst & Young, 2021). The strongest performing segment is conglomerates with 10.2% growth. The seven best conglomerates (Fresenius, Danaher, Avantor, Abbott, Roche, Merck KGaA and Philips) boasted a revenue growth of at least \$ 1.5 bn in spite of the decline in investment in technologies resulting from COVID-19. Seven of the ten pure-play MedTech's had a declining revenue due to the impact of COVID-19. Medtronic, Siemens Healthineers and Edwards Lifesciences did however not experience this decline. (Ernst & Young, 2021). The MedTech industry heavily invests in R&D. Eight of the top ten performing companies allocated more capital to R&D than to shareholder return, suggesting a readiness to invest in organic growth rather than seeking acquisitions. Pure-play MedTech's reinvested heavily in R&D in 2020, recording the largest annual growth rate in R&D spending (+17.2%). This signals the industry's confidence in its ability to keep innovating. The MedTech companies employed around 878,900 people in 2020, which is 4.6% higher than in 2019. Pure-play MedTechs' net income fell from \$24 bn to \$20 bn due to COVID-19's impact.

7.2.2. Sector Specific KPIs

In addition to the eight general KPIs presented and explained in the Research Methodology section, three more sector specific KPIs exist for the medical sector. These are the financial KPIs, sales & marketing ratio and inventory turnover. The employer rating was also selected as a non-financial KPI. These sector specific KPIs were selected as they are particularly important to the medical sector and allow for a good comparison of companies from these sectors.

Sales and Marketing Ratio

The formula for sales & marketing ratio is as follows:

$$\text{Sales \& Marketing Ratio} = \frac{\text{Distribution Costs}}{\text{Revenue}} \times 100$$

The sales & marketing ratio allows a comparison of sales expenses in relation to revenues. In the case of companies in the medical sector, sales expenses generally consist mainly of the cost of distribution

of products, marketing expenses and commission payments. A high sales and marketing ratio indicates that a company spends a lot of money to make sales. On the other hand, a low ratio shows fewer costs incurred when selling products. A low sales & marketing ratio is therefore preferable (Kenton, 2021).

Inventory Turnover

The formula for inventory turnover ratio is as follows:

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

Inventory turnover is a key figure for measuring the inventory turnover rate. For this purpose, the cost of goods sold is divided by the average inventory level. This indicator is normally important to manufacturing companies, as high inventories can be a decisive cost factor. A high inventory turnover rate means that the goods and finished products in the warehouse are processed and sold relatively quickly. A low inventory turnover rate means it takes more time for the warehouses to be emptied. This is often associated with higher storage and transportation costs. Therefore, companies usually prefer a high inventory turnover rate (Hai, 2019, pp 13–14).

Employer Rating

No formula is used to determine an employer rating. Instead, job rating platforms are used to analyze how popular the specific company is amongst its employees. The non-financial KPI employer rating determines how successful companies are in attracting new employees.

7.3. Companies Research

As previously mentioned, the two companies to be discussed as a base for comparison between the two markets are Karl Storz SE & Co. KG and NuVasive Inc., and are both from the medical sector. In the next two subsections brief company overviews, along with a detailed analysis on the companies' business models, according to the already established KPIs, will be presented. Following the two companies' respective descriptions, a company comparison, according to the KPIs is presented. Finally, a joint analysis of the medical device industry is created, based on the results of the companies' analysis.

7.3.1. Karl Storz SE & Co. KG, Tuttlingen, Baden Württemberg, Germany

The first company to be analysed will be presented with a brief company overview, followed by the KPI analysis, revealing distinctive characteristics of Hidden Champions situated in Germany.

a) Company Overview

The company Karl Storz SE & Co. KG, based in Tuttlingen, Baden-Württemberg Germany and founded in 1945, is a family-owned company producing and selling medical instruments and devices. This medical technology manufacturer is the world market leader in human medicine instruments for minimally invasive surgery and rigid endoscopes for the examination of body cavities, and is also one of the leading manufacturers in the industrial endoscopy business segment (Bauer, 2011).

Surgical mechanic Karl Storz founded the company right after the end of World War Two. It initially manufactured mainly instruments and lamps for ear, nose and throat medicine. Following consistent growth of the company during the 1960s, the first subsidiary in the USA, Karl Storz Endoscopy-America Inc. was founded in 1971 (Karl Storz SE & Co. KG, Unser Weg, 2022).

Nowadays the Karl Storz Group is a company interacting globally, boasting more than 50 local branches or subsidiaries in more than 40 countries worldwide. The Karl Storz Group focuses on the European market where most of its branches are situated. Other important markets for this group are North America and Asia (Karl Storz SE & Co. KG, 2020).

Tuttlingen in the Southwest of Germany in the state Baden Württemberg where the company is situated had been renowned for the manufacturing and trade of medical technology products since the 19th century. Today, a medical technology cluster extends far beyond the city of Tuttlingen and roughly 450 companies is part of the Medical Mountain Cluster, the biggest medical device cluster worldwide (Medical Mountains, 2022). In Tuttlingen, more than 400 companies are attributed to the cluster (Nadvi & Halder, 2005). The vast majority of these companies employ less than 20 people, whilst the largest provide work for around 3,600 people at the Tuttlingen site alone. Karl Storz SE & Co KG is considered one of the largest Tuttlingen based companies. Tuttlingen is considered the biggest medical cluster in Germany (Mauch, 2017, pp 5–9).

b) Key Products

Karl Storz SE & Co. KG mainly operates within the human medicine, veterinary and industrial sectors. The human medicine sector deliver more than 98% of the entire group's revenues. Therefore, this division is the most important for the company. The key segment within the human medicine sector is the production and distribution of endoscopes for various surgeries and medical examinations. In addition to human medicine, Karl Storz Group also offers endoscopic systems for veterinary medicine and technical application areas such as aviation, automotive engineering and traffic, power generation, process industry, safety and infrastructure (Karl Storz SE & Co. KG, 2020, p 21).

Another interesting field in which Karl Storz Group operates is neurosurgery. Neurosurgery is a specialty of Karl Storz Group that is continuously and rapidly evolving and thus often plays a pioneering role regarding new technologies in the neurological segment (Nikova & Birbilis, 2017, pp 297–300).

Another strong-selling product is the fully integrated operating room 'OR1' that can be expanded on a module basis. This product enables Karl Storz to sell not only individual medical instruments, but also a complete operating room as a platform for its own core products. The focus is on improving workflows, ergonomic and efficient workplace design, and future-proof technologies (Karl Storz SE & Co. KG, OR1, 2022).

c) Financial KPIs

The financial KPIs of Karl Storz SE & Co. KG will now be examined and analyzed in more detail. To ensure a good informative value of the key figures, they should be considered over a longer period. A short-term view would fail to recognize earlier years' data or once off effects. As of 17 June 2022, no financial data for the year 2021 has been published by Karl Storz SE & Co. KG. The annual reports with financial data from 31.12.2020 are therefore the most recent (Bundesanzeiger, 2022).

Net Profit Margin

Return on sales is an important key indicator for managing operating success for the Karl Storz Group. To gain a better understanding of this key performance indicator, the following figure illustrates the total sales and earnings developments for the period from 2009 until 2020.

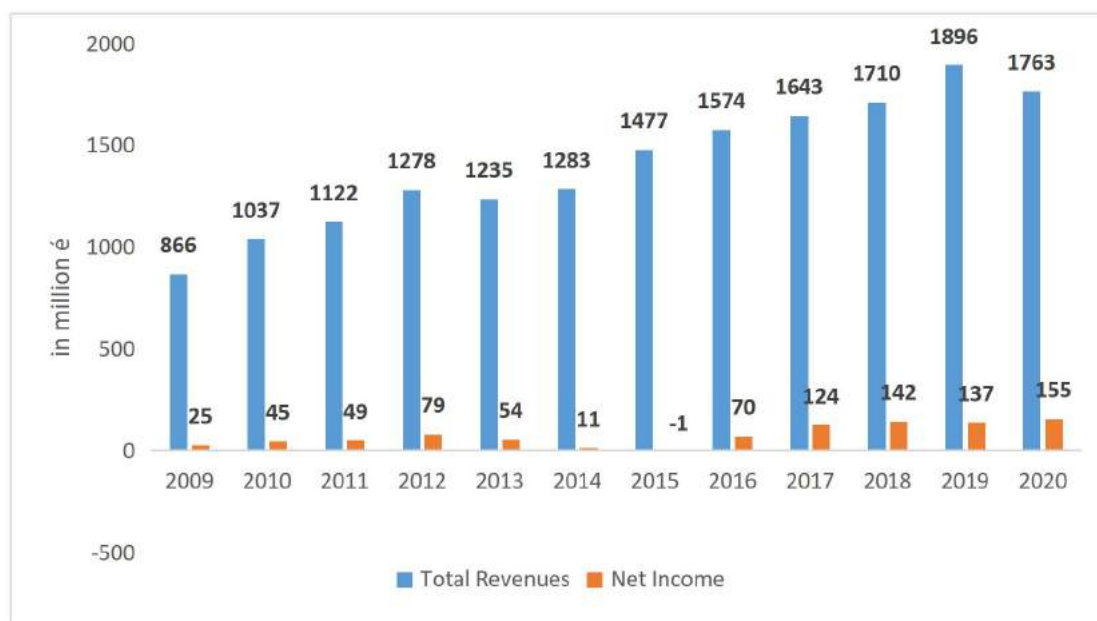


Figure 2: Revenue and Net Income Development (Karl Storz SE & Co. KG, 2020)

In terms of net income, 2020 was the company's most successful year to date, with earnings of €155 million (Karl Storz SE & Co. KG, 2020). During the Covid 19 crisis, the Karl Storz Group fully compensated for this decline in sales and increased earnings through short-time work and cost savings (Schwäbische Zeitung, 2020). Karl Storz Group expects Covid-19-related make-up effects and thus rising sales worldwide in 2021 and 2022. The Karl Storz Group expects to catch up on the negative effect of the Covid-19 pandemic by a worldwide rise in sales in 2021 and 2022. This should also be reflected in an increased net profit margin (Karl Storz SE & Co. KG, 2020).

Operating Cash flow margin

The Karl Storz Group's operating cash flow margin is an important key figure for managing operating success. To gain a better understanding of this key performance indicator, the following table illustrates the development of the total amount of operating cash flow generated, as well as the performance of the operating cash flow margin for the period between 2015 and 2020.

Table 1: Operating Cash flow Margin Development Karl Stolz SE & Co. KG

Million EUR	2015	2016	2017	2018	2019	2020
Operating Cash flow	106	150	165	130	194	182
<i>Growth YoY</i>	-	41.5%	10.0%	-21.2%	49.2%	-4.1%
Total Revenue	1,477	1,574	1,643	1,710	1,896	1,763
Operat. CF Margin	7.2%	9.5%	10.0%	7.6%	10.2%	10.3%
<i>Growth YoY</i>	-	18.1%	5.3%	-24.0%	34.2%	1.0%

Source: Own compilation, based on Karl Stolz SE & Co, 2020.

The operating cash flow margin generally developed positively from 2015 to 2020. While it was still 7.2% in 2015, it rose to 10.3% by 2020. This increase corresponds to a growth of 43.1%. However, the operating cash flow margin development was also subject to considerable fluctuations. This is due to changes in the operating cash flow (Karl Storz SE & Co. KG, 2020).

Equity Ratio

Karl Storz SE & Co. KG is characterized by a high equity ratio of 44.6% (as of 2020). This is due to the particular ownership structure. The Storz family is still the sole owner of the group, which means that the company's links to the capital markets are weak. Consequently, investments are made through bank loans, promissory note loans or equity (Karl Storz SE & Co. KG, 2020). The development of the equity ratio from 2015 until 2020 is shown in the table below. The growth rates of the balance sheet volume and equity are also shown.

Table 2: Equity Ratio Development Karl Stolz SE & Co. KG

Million EUR	2015	2016	2017	2018	2019	2020
Total Assets	1,124	1,200	1,338	1,498	1,624	1,652
<i>Growth YoY</i>	7.7%	6,8%	11.5%	12.0%	8.4%	1.7%
Equity	450	537	560	663	748	738
<i>Growth YoY</i>	6.4%	19.3%	4.3%	18.4%	12.8%	-1.4%
Debt	674	663	778	835	876	914
Equity Ratio	40.0%	44.8%	41.9%	44.3%	46.0%	44.6%

Source: Own compilation, based on Karl Stolz SE & Co, 2020.

The total assets of the Karl Storz Group increased since 2015 at an average growth rate of 8.0%. As seen in the sales development, the development of total assets also suffered from the Covid-19 pandemic. Total assets increased by 1.7% only from 2019 until 2020 (Karl Storz SE & Co. KG, 2020).

R&D Ratio

The Karl Storz Group is a technology-oriented company that primarily researches technologies developed independently, within a group of companies, or on behalf of others. In a constantly developing world market characterized by the progress of minimally invasive medical technologies combined with new methods of electronic image acquisition and processing, the Karl Storz Group has focused on developing new therapeutic and diagnostic products. Against this background, research and development are central corporate areas for the company. In the following table, the research and development expenses for the latest years are shown (Karl Storz SE & Co. KG, 2020).

Table 3: Research & Development Ratio of Karl Stolz SE & Co. KG 2015-2020

Million EUR	2015	2016	2017	2018	2019	2020
R&D Expenses	90	85	90	95	103	120
<i>Growth YoY</i>	36.3%	-5.6%	5.9%	5.6%	8.4%	16.5%
Total Revenue	1,477	1,574	1,643	1,710	1,896	1,763
R&D Ratio	6.1%	5.4%	5.5%	5.5%	5.5%	6.8%

Source: Own compilation, based on Karl Stolz SE & Co., 2020.

Research and development expenses have been rising continuously since 2015. In 2015 this expenditure was still € 90 million, but increased to € 120 million during the Covid year 2020. This shows the enormous importance of investments in research and development for Karl Storz Group (Karl Storz SE & Co. KG, 2020). In 2020, expenditure was primarily related to the implementation of the European Medical Device Regulation. This regulation, which was to be implemented by 2021, will lead to significant additional expenses for the approval and development of medical products. Karl Storz Group expects future additional expenses to increase into the double-digit million range (Knieps, 2021).

Sales & Marketing Ratio

The Karl Storz Group maintains its own sales and marketing companies in the most important international countries and regions. In some parts of the world, the Karl Storz Group also cooperates with licensees and agents. The sales and marketing ratio is the first of two sector specific KPIs for the medical industry. The following table shows the development of distribution costs incurred and the corresponding sales & marketing ratio (Karl Storz SE & Co. KG, 2020).

Table 4: Sales and Marketing Ratio of Karl Storz SE & Co. KG 2015-2020

Million EUR	2015	2016	2017	2018	2019	2020
Distribution Costs	475	488	491	512	566	480
Growth YoY	13.9%	2.7%	0.6%	4.3%	10.5%	-15.2%
Total Revenue	1,477	1,574	1,643	1,710	1,896	1,763
S&M Ratio	32.2%	31.0%	29.9%	29.9%	29.8%	27.2%

Source: Own compilation, based on Karl Storz SE & Co., 2020.

The above table 4 shows increasing sales expenses, in line with increased sales, for the period 2015 until 2019. Distribution costs increased from €475 million in 2015 to €566 million in 2019. The sales and marketing ratio decreased from 32.2% to 29.8% for the same period. This means that sales increased more than distribution costs during this period. The sales costs decreased disproportionately due to the Covid-19 pandemic in 2020. Consequently, the sales and marketing ratio also decreased to a value of 27.2%. This indicates that the Karl Storz Group managed to keep distribution costs so low during the crisis that the sales and marketing ratio improved (Karl Storz SE & Co. KG, 2020).

Inventory Turnover

The second sector specific KPI for the medical sector is inventory turnover. Karl Storz is operating in the manufacturing business sector where correct inventory levels are paramount to be able to produce enough products when they are required. As described previously, the inventory turnover ratio is calculated by dividing the cost of goods sold by the average inventory. In the case of Karl Storz, this results in an inventory turnover ratio of between 2.2 and 2.7. It is significant to note that the inventory turnover continuously increased from 2015 until 2019. This indicates that finished products had been sold increasingly fast. Inventory turnover declined for the first time in 2020 as a result of the challenges posed by the pandemic. The Karl Storz Group had to contend with falling sales and slumping demand during this time. Due to catch-up effects, the inventory turnover ratio is expected to increase again for 2021 and 2022 (Karl Storz SE & Co. KG, 2020).

d) Non-financial KPIs

This section analyses the selected non-financial KPIs. The non-financial KPI 'employer rating' was selected as a sector specific KPI and is therefore only of particular importance to the two medical technology companies.

Managerial Style

Karl Storz SE & Co. KG is a German family-owned company. The company's transformation into the current legal form of SE & Co. KG took place in 2015. The company still had the German legal form of a GmbH & Co. KG before 2015. The owners of the general partner, Karl Storz Verwaltungs SE and Karl Storz SE & Co. KG, are all descended from the Storz family (Karl Storz SE & Co. KG, 2020). Karl-Christian Storz has been the sole managing director of Karl Storz SE & Co. KG since January 2019. The family business thus continues the tradition in the third generation, and is supported by an eight-member Executive Management Team. Critical decisions are in essence still made by the family Storz (Karl Storz SE & Co. KG Annual Report, 2020, p.21). This family run ownership structure also leads to corresponding organizational structures. Employees consider the hierarchies to be relatively rigid. The company is furthermore considered to be more traditional and conservative, and less innovative and agile than other companies in the medical sector (Kununu, 2022). The Karl Storz Group considers employees' training and further education in particular of importance. There are currently 24 training and study programs run for young professionals alone.

The Karl Storz Group currently boasts around 200 trainees inside these programs (Karl Storz SE & Co. KG, Ausbildung, 2022).

Innovation Approach

Two inventions, above all others, gave endoscopy an unimagined boost in the second half of the 20th century. These two inventions, namely the cold light source and the Hopkins rod lens optics are closely associated with the name Karl Storz. The Karl Storz Group has accompanied this revolutionary developments, which is still ongoing. (Karl Storz SE & Co. KG, Unser Weg, 2022).

The Karl Storz Group also resorts to acquisitions of competitors to gain a foothold in new business areas. The 'Gastroenterology' business unit was for example acquired from Xion GmbH in 2003 (Xion GmbH, 2022). Through such strategic acquisitions, the Karl Storz Group secures know-how and important patents. From an entrepreneurial point of view, such decisions raise the question of whether an acquisition or an in-house development would be more advantageous. The answer to this question will depend on the case for the Karl Storz Group. The Karl Storz Group also regularly receives awards for innovative strength in developing new types of endoscopic instruments. An example of these includes the HYDOME duodenoscopy system, which received the Red Dot Award in the category 'Product Design' in 2019 (Müller, 2019, p 64). The Karl Storz Group also won the German Innovation Award for the video laryngoscope in 2017. This is used in emergency medicine for difficult-to-access airways and saves lives (Der Deutsche Innovationspreis, 2017).

Customer Relationship

A large part of the worldwide sales companies belongs directly to the Karl Storz Group as subsidiaries. The only activities in niche markets are sales made via external partners or joint ventures. Customer relations and customer satisfaction are cornerstones of a successful sales concept for the Karl Storz Group (Karl Storz SE & Co. KG, 2020). One way of measuring customer satisfaction is the NPS. To determine the NPS, customers are asked how likely they would recommend these products from Karl Storz to others. A score is calculated based on the answers. This score lies in a range from -100 to 100. The Karl Storz Group has a current NPS score of 28. This score shows that most customers, in this case, 55%, would recommend Karl Storz products. 27% of customers would not recommend the products, and 18% are undecided (Comparably, 2022).

Export Ratio

The business strategy of Karl Storz SE & Co. KG is very internationally focused. The company maintains subsidiaries on all major continents and has production facilities in Europe and the USA. This is also reflected in the geographical distribution of sales. Sales on the North American continent accounted for nearly 42% of total company sales in 2020. This means that the USA and Canada represent the most important markets for the Karl Storz Group. The European market is of particular importance as the Karl Storz Group generates around 32% of its sales here. 8.1% of European sales was generated in Germany in 2020. Thus, the German domestic market accounts for only a small part of the company's sales. The rest of the world accounts for 26% of sales. This includes important sales markets in Russia and South-East Asia (Karl Storz SE & Co. KG, 2020, p.12). Consequently, the Karl Storz group has a high export ratio. This has been relatively constant at around 92% from 2015 until 2020. The high export ratio has grown historically due to the global market leadership in the field of endoscopes. Such a high export ratio also offers the opportunity to benefit from the current global boom in the healthcare industry. Exchange rate fluctuations and crises in export countries on the other hand can lead to future sales losses (Karl Storz SE & Co. KG, 2020).

Employer Rating

Well-trained specialists and employees are key factors for to the success of a company. Due to a shortage of skilled workers, the market power of employees has increased in recent years. Companies must therefore compete more intensively for new employees and make the workplace more attractive for them. The Karl Storz Group has also recognized this and offers certain additional company benefits in addition to a normal salary. According to the Kununu website, the following benefits are offered to employees by the Karl Storz Group: access to company doctors, flexible working hours, a

company pension plan, a company cell phone, a home office, a cafeteria and childcare (Kununu, 2022). Employees negatively noted the lack of a works council and the suppression of elections for one (Wiesenberger, 2017).

A survey on the Glassdoor website provides initial indications of how satisfied Karl Storz Group employees are with their employer. A total of 446 people were asked whether they would recommend their employer to a friend and 73% of the participants answered in the affirmative. They were also asked whether they agreed with the current chief executive officer. This was answered in the affirmative by 69% of the participants. Most employees are therefore overall satisfied with their job and the company's management (Glassdoor, 2022). A second survey from the website comparably also asked whether employees would recommend the employer to a friend and 64% of respondents agree. On the other hand, 27% of the respondents would not recommend the Karl Storz Group as an employer to a friend. This leads to an Employee Net Promoter Score of 37 (Comparably, 2022). In summary, the Karl Storz Group is a rather popular employer. In both surveys, a clear majority of respondents were prepared to make a recommendation.

7.3.2. NuVasive Inc. San Diego, California, USA

NuVasive Inc. is the second company operating in the medical technology sector which will be discussed in this section. The section comprises a brief company overview, followed by the introduction of main products of the company and thereafter the key financial and non-financial indicators will be analyzed.

a) Company Overview

NuVasive Inc. (NUVA) was founded in 1997 and is based in California, USA. It is a global medical technology company focused on developing, manufacturing, selling, and providing solutions for minimally invasive spine surgery (MISS) (NuVasive Annual Reports, 2015-2021). The company not only supplies products, but also enable technology with the products to offer a comprehensive solution for spine surgery.

NuVasive is an American Hidden Champion according to criteria cited by Hermann Simon. The criteria show it is the second-largest global leader in the minimally invasive spinal implant market after Medtronic Inc. NuVasive has a revenue of less than \$5 billion (\$1.1 billion revenue in 2021), and offers unique products and services (Simon, 2022). The company is serving patients, surgeons, and healthcare providers with its innovative products in more than 50 countries (NuVasive Annual Reports, 2015-2021). As of 2021, 2400 employees of NuVasive are in the U.S., and 500 employees are located outside the U.S., primarily throughout Europe and Asia. The primary corporate offices are in Broomfield, Colorado and San Diego, California in the United States and the international headquarter is in Amsterdam, the Netherlands.

Competition within the industry is based on technology, innovation, quality, reputation, and customer service (NuVasive Annual Reports, 2015-2021). In core spine business, NuVasive faces competition from Medtronic, DePuy/Synthes, a Johnson & Johnson company, Stryker Spine, Globus Medical, and Zimmer Biomet Spine, which together represent a significant portion of the spine market. A few small competitors with more limited product offerings and geographic reach are Orthofix International, Alphatec Holdings, SeaSpine Holdings, and others. Despite the COVID-19 pandemic and supply chain crisis, the company continued developing innovative products for less-invasive surgery, continued to invest in research and development, and provide training to surgeons in both live and virtual settings (NuVasive Annual Reports, 2015-2021).

b) Key Products

NuVasive mainly provides spine surgery solutions which allows surgeons to perform less invasive spine surgeries from various approaches which cause less tissue disruption of the spine (NuVasive Annual Reports, 2015-2021). In addition, the company also supplies specialized orthopedics products. More complementary products by NuVasive are products for implants and fixation systems (NuVasive Annual Reports, 2015-2021). These implant products are available in a variety of shapes,

sizes, and options to accommodate specific approaches during surgery. NuVasive’s long-term business strategy is oriented towards providing innovative solutions for less invasive spine surgery by a continual flow of new products and procedures to fulfill unmet clinical needs. This distinguishes them from traditional spine implant companies. In 2021, the company had issued 1700 pending patents worldwide, including over 730 U.S. issued patents and 400 trademark registrations in both domestic and foreign regions (NuVasive Annual Reports, 2015-2021).

c) Financial KPIs

In this chapter, the financial overview and the five key financial KPIs for NuVasive Inc. will be discussed. The key KPIs considered are assumed to give the long-term view. The data is taken from the company’s annual report for the period of 7 years; from 2015 until 2021.

Financial Overview

For a better understanding, the table below illustrates the development of the key figures for the period between 2015 and 2021.

Table 5: Financial Overview NuVasive 2015-2021

Million \$	2015	2016	2017	2018	2019	2020	2021
Revenues	811	962	1.026	1.101	1.168	1.051	1.139
Growth	6%	19%	7%	7%	6%	-10%	8%
Gross Profit	617	722	761	791	856	729	817
Gross Margin	76%	75%	74%	72%	73%	69%	72%
EBITDA	152	166	162	105	174	90	45
EBITDA Margin	19%	17%	16%	10%	15%	9%	4%
EBIT	139	124	114	54	123	38	-12
Operating Margin	17%	13%	11%	5%	11%	4%	-1%
Net Income	66	37	82	12	65	-37	66
Net Margin	8%	4%	8%	1%	6%	-4%	6%

Source: Own compilation, based on NuVasive Annual Reports, 2015-2021.

NuVasive’s revenue has been increasing steadily over the past seven financial years, except for 2020, resulting from the COVID-19 effect on surgery volumes. (NuVasive Annual Reports, 2015-2021). Calculating gross profit margin, cost of goods sold (COGS) which consists primarily of purchased goods, raw materials, labor and overhead costs, inventory-related costs and royalty expenses, and the cost of providing IOM services, which includes personnel and physician oversight costs, is accounted. The trend for EBITDA margin is decreasing as the company is incurring the cost of sales and marketing expenses, research, and development expenses and business transition cost (costs related to acquisitions) to provide continual flow of innovative solutions. The trend for operating margin is also decreasing as company has depreciation and amortization expenses for tangible assets such as property, plant and equipment, buildings etc. and for intangible assets such as software’s, patents, trademarks, and tradenames. The operating margin was 17% in 2015 to -1% in 2021. The net profit margin will be discussed in detail in the next section with the five key financial KPIs.

Net Profit Margin

From the Financial Overview Table 5 it can be seen that positive and growing revenue has been observed for NuVasive, except during 2020, when the revenue went down from 1.16 billion to \$1.05 billion due to reduction in surgeries because of the COVID-19 pandemic (NuVasive Annual Reports, 2015-2021). The company also experienced unfavorable pricing impacts during 2020. The trend for net income is fluctuating, yet positive, except for the years 2020 and 2021, due to the impact of COVID-19. The fluctuating trend is observed as the company invests in growth and innovative solutions by spending more on research and development and doing mergers and acquisitions.

Operating Cash flow Margin

The operating cash flow of NuVasive increased from \$ 89 million in 2015 to \$ 219 million during 2019 (NuVasive Annual Reports, 2015-2021). This is due to a higher net income in years 2017 and 2019, and non-cash expenses (depreciation and amortization) and inventories being less for the years 2015, 2016 and 2019. The operating cash flow however declined in 2020 and 2021, because of a lower net income due to more research and development (R&D) expenditure, selling and marketing expenses and the revenue generally being lower due to the COVID-19 impact. The operating cash flow margin also developed positively and continuously rose from 11% in 2015 to 20% in 2019 (NuVasive Annual Reports, 2015-2021).

Equity Ratio

NuVasive is a company listed on the NASDAQ. The shareholder structure is divided into multiple equity shareholders. The Vanguard Group Inc. has the highest share of 9.43% followed by Capital Research & Management Co with 5.62% and Hartford Investment Management Co. with 5.11%.

Table 6: Equity Ratio NuVasive 2015-2021

Million \$	2015	2016	2017	2018	2019	2020	2021
Total Assets	1,302	1,570	1,640	1,707	1,885	2,693	2,154
Growth YoY	-3%	21%	4%	4%	10%	43%	-20%
Equity	718	700	799	834	915	918	795
Growth YoY	11%	-3%	14%	4%	10%	0,33%	-13%
Debt	584	870	841	873	970	1,775	1,359
Equity Ratio	55%	45%	49%	49%	49%	34%	37%

Source: Own compilation, based on NuVasive Annual Reports, 2015-2021.

As it can be seen from the table above, equity grew at an average growth rate of 3%. In 2015, equity amounted to \$ 718 million, leading to an equity ratio of 55% (NuVasive Annual Reports, 2015-2021). The ratio decreased to 34% with equity of \$ 918 million by 2020, as the company issued new senior convertible notes. The ratio increased again in 2021 to 37% with equity at \$ 795 million, while the company settled the outstanding payments for older convertible notes. NuVasive's equity ratio is in line with the market standards, which is at 51% (Yahoo Finance, 2021).

R&D Ratio

The trend for R&D ratio has continuously been increasing from 2015 until 2021. This ratio was at 4% in 2015 with \$ 36 million spent on R&D, going up to 8% in 2021 with \$ 93 million spent on R&D (NuVasive Annual Reports, 2015-2021). According to most recent reporting the company spent 14% on average on R&D costs. The company is spending on its employees, new products and further development of products acquired in M&A process. Despite COVID-19, NuVasive stayed committed to investments in research and development to further advance their leadership position in the spine surgery.

Sales & Marketing Ratio

The below shown figure 3 shows the development of sales and distribution costs incurred out of revenue:



Figure 3: Selling and Marketing Ratio NuVasive (NuVasive Annual Reports, 2015-2021)

It can be observed that the selling and marketing expenses are above 50% for all years from 2015 until 2021. The trend is fluctuating, starting from 56% in 2015, then 55% in 2016 and 53% in 2017, as sales increased stronger than S&M costs. In 2020, the S&M growth is negative due to the impact of COVID-19. The company has however increased selling and marketing expenditure with an average of 4% during 2021, to meet the needs of the market.

Inventory Turnover Ratio

Inventory turnover ratio is the second sector specific KPI selected for the medical sector. It is important for NuVasive to maintain its inventory levels and the speed at which inventory can be moved to meet surgeons' and patients' needs. Their inventory turnover ratio is between 1.21x in 2015 and 1.05x in 2021 (NuVasive Annual Reports, 2015-2021). The average inventory turnover ratio is 1.15x, which is less than the average ratio of 2.2x for the healthcare sector (Finbox, 2022). Overall, the ratio is fluctuating with a higher ratio in 2016 at 1.28x, and going down in 2017 to 1.18x. This is reflected by COGS and inventory as in 2016; the inventory had increased comparatively less than COGS, which led to a higher ratio. Since 2019 the ratio has been quite low, compared to relatively higher inventory in comparison with COGS with 1.07x and 1.05x in 2019, 2020 and 2021 respectively. The company should be able to catch up from 2022 onwards.

d) Non-financial KPIs

In the following section, the five key non-financial KPIs will be illustrated. The main statistics for NuVasive will be shown for the period of 7 years, from 2015 until 2021 to gain a better understanding thereof.

Managerial Style

NuVasive is a privately owned company and has a hierarchical organizational structure with a chairman, independent directors and chief executive officers (CEO) as members of the board.

As of 2021, NuVasive has 2900 employees worldwide, of which 2400 are in the U.S. and 500 employees are located outside the U.S., primarily in Europe and Asia (NuVasive Inc., 2021). 41% of employees are female and 59% male. In the U.S. none of their employees is represented by a labor union. The employees in their sole owned subsidiary in Europe, NuVasive Netherlands B.V., are

however covered by the Works Council. The company launched Women in Spine (WIS): their employee resource group focused on global diversity (NuVasive Women in Spine WIS, 2021).

The company's employee resource groups aim to raise awareness of the importance of diversity, inclusion, and engagement while providing professional development opportunities for women and employees of all genders, ethnicities and minority groups, backgrounds, experience levels, and locations. Creating a more diverse and inclusive workforce, the company began to monitor voluntarily disclosed diversity data to review hiring, promotion and attrition in the company overall, and at departmental level.

Innovation Approach

As the leader in spine technology innovation NuVasive is devoted to outcome-driven innovation that benefits their surgeons, providers, and, most importantly, patients. The innovative products in anterior, posterior, and cervical spine surgery—and enabling technology—is helping the company deliver near- and long-term growth. The company continued to invest in procedurally integrated technologies in less invasive spine surgery affording surgeons the flexibility to treat any patient pathology—all from NuVasive.

Customer Relationship

NuVasive customers are surgeons, patients, and hospitals. As customer relationship and satisfaction are important to NuVasive, the company created an application to keep in touch with their patients after surgery. This enables them to maintain customer relationships and at the same time assists surgeons with a quick check up on their patients post-surgery. The SpineTRACK registry (NuVasive® SpineTRACK Registry, 2022) is a data collection platform that captures important patient-reported and clinical outcomes of patients with spine illness to improve quality and delivery.

The net promoter score (NPS) for NuVasive is considered to assess customer satisfaction. Customers are asked how they would recommend the products from NuVasive to others, and the customer experience score is calculated from these answers (Comparably - Net Promoter Score, 2022).

The customers fall into three categories, being promoters, passives, and detractors, based on their responses. NuVasive has an overall score of 31, with the majority being promoters. This means that 54% of the customers would recommend NuVasive's products, followed by 23% who would not recommend their products, and 23% who are indecisive (Comparably - Net Promoter Score, 2022).

Export Ratio

NuVasive also has an international market focus. The company operates internationally in Europe, Asia-Pacific, and Latin American markets. Their global footprint covers over 25 locations around the world, including manufacturing facilities and cadaver-labs.

The international sales of the company had continuously been growing from 2015 (\$ 105 million) until 2019 (\$ 236 million), but fell in 2020 (\$ 234 million) due to COVID-19's effect on volumes of sales in spinal hardware and surgical support segments. The company sales in international business rose in 2021 to \$ 262 million as they are recovering from the previous decline.



Figure 4: Export Ratio NuVasive (Own compilation, based on NuVasive Annual Report, 2015-2021)

In the figure above the development of export ratio for the years 2015 until 2021 is illustrated. The trend for export ratio has continuously been rising from 2015 to 2021, as the company is expanding internationally. The company is investing to tailor their products and technologies to meet various international patient, surgeon, and market requirements.

Employer Rating

Employer rating is taken as the sector specific non-financial KPI. Employee satisfaction is considered to determine the rating of the company from the employees’ perspective. In this section the reviews from various employer rating platforms are gathered– Comparably and Glassdoor.

According to the employees rating for culture as a factor, the rating given to the company on the Comparably platform is B-, with 3.7 stars out of a possible 5 stars (Comparably- Culture Assessment, 2022). Employees overall gave 80% positive reviews about NuVasive and 20% of reviews reflected employees who are unhappy. The majority of NuVasive employees believe that the work environment at NuVasive is positive (Comparably review for NuVasive, 2022). NuVasive received an overall rating of 3.9 out of a possible 5 stars based on over 581 anonymous employee reviews on the Glasdoor platform. 75% of employees would recommend NuVasive as an employer to a friend and 67% are positive about the future of the company (Glassdoor review for NuVasive, 2022). In summary, NuVasive is a popular employer as analyzed from both platforms. However, caution is required when interpreting the website statistics as it cannot be ascertained that a participant in the survey actually is a (former) employee.

7.4. Comparison between Germany and the USA

We now have presented the definition of a Hidden Champions, the main characteristics of Hidden Champions in USA and Germany, and made a detailed analysis of two medical device Hidden Champions from the two countries. We will now proceed to the comparison of the companies’ main financial KPIs and thereafter provide a comparison of the countries of the Hidden Champions, in a macro manner, using Hofstede’s cultural dimensions to serve as basis for the non-financial KPIs comparisons.

7.4.1. Financial KPIs Comparison

We used public data available about the two Hidden Champions in the medical device sector, namely America’s NuVasive and Germany’s Karl Storz, for the period from 2015 until 2020 for the comparison of the two companies.

Net Profit Margin

The first KPI to be compared is the revenue margin.

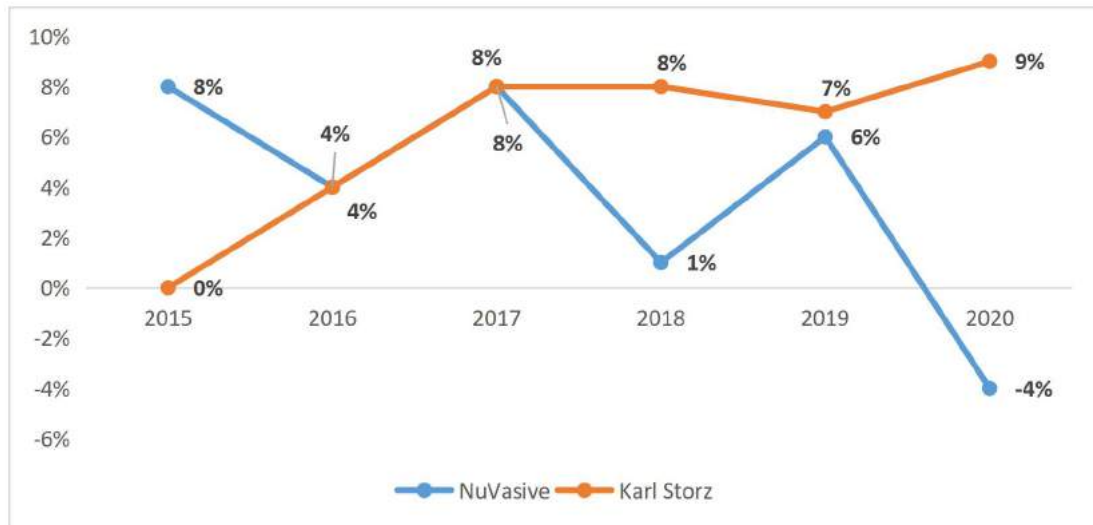


Figure 5: Net Profit Margin Medical device industry (in %) (Own compilation)

NuVasive has had a rather volatile revenue margin. In the beginning of the comparison period, the company had a revenue margin of eight percent. This number decreased in 2016 to 4%, and increased back to 8% in 2017. It went down to 1% in 2018, going up again to 6% in the following year and reached the lowest point in this comparison period with -4% in 2020.

Karl Storz presented a tendency of high growth in the comparison period, starting from 0% in 2015 to 4% in 2016 and up to 8% in 2017, with small variations of plus or minus 1% in the following years.

Comparison of Revenue Growth

The next KPI to be analyzed and compared between the two Hidden Champions is the revenue growth.

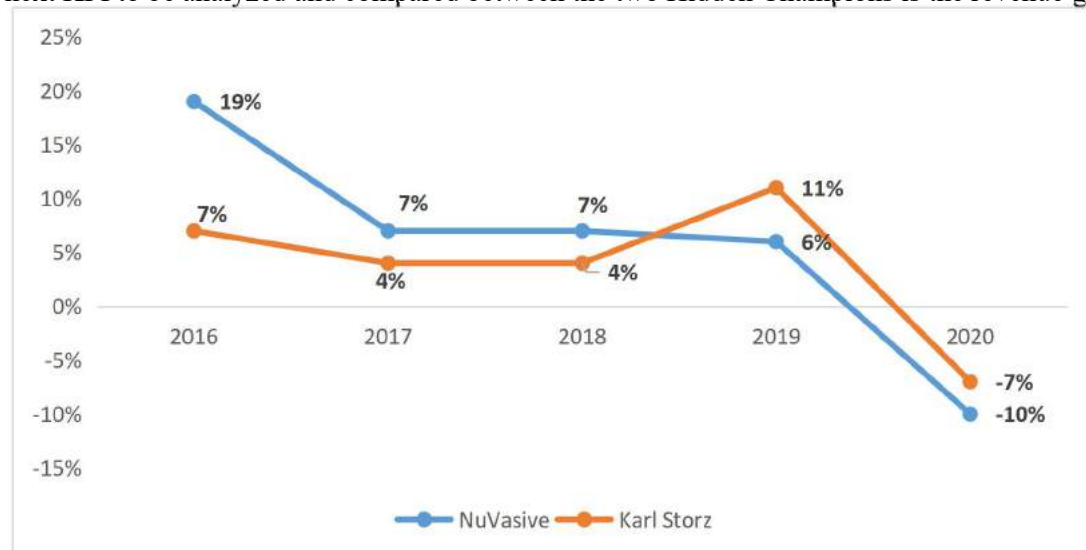


Figure 6: Revenue Growth Medical device industry (in %) (Own compilation)

The two companies in the medical device sector presented quite similar revenue growths over the comparison period. With exception of the first year analyzed, when NuVasive had its revenue grow 19% and Karl Storz only 7%, the companies had relatively constant growths between 4 and 11%, excluding the special case of the year 2020. Comprehensibly, this 2020 negative growth happened for

both companies due to the Covid-19 pandemic and postponing of elective medical surgeries worldwide.

Both these companies in the medical sector are in matured stages and thus already have consolidated revenues. They therefore do not present such high volatility, except for the year of 2020 due to the Covid-19 pandemic.

Operating Cash flow Margin

An important KPI to be compared is the operating cash flow margin. After all, companies cannot survive in the long term if they lack cash. The operating cash flow margin from NuVasive remained higher than that of Karl Storz's during the past 6 years. The American company's figure has increased from 11% in 2015 up to 20% in 2018 and 2019 and went slightly down to 18% in 2020. The German company's figures have remained constant at 10% for 4 of the 6 years, with two slightly lower ones of 7% and 8% in 2015 and 2018 respectively. This shows a consistency in operating cash flow margins at Karl Storz, which can be seen with other Hidden Champions as well. The American company NuVasive presented higher operating cash flow margins than the German Hidden Champion, Karl Storz. In general, we see a higher cash flow margin for American companies when compared to German ones.

Equity Ratio

The comparison will now be made using the KPI Equity Ratio as a basis.

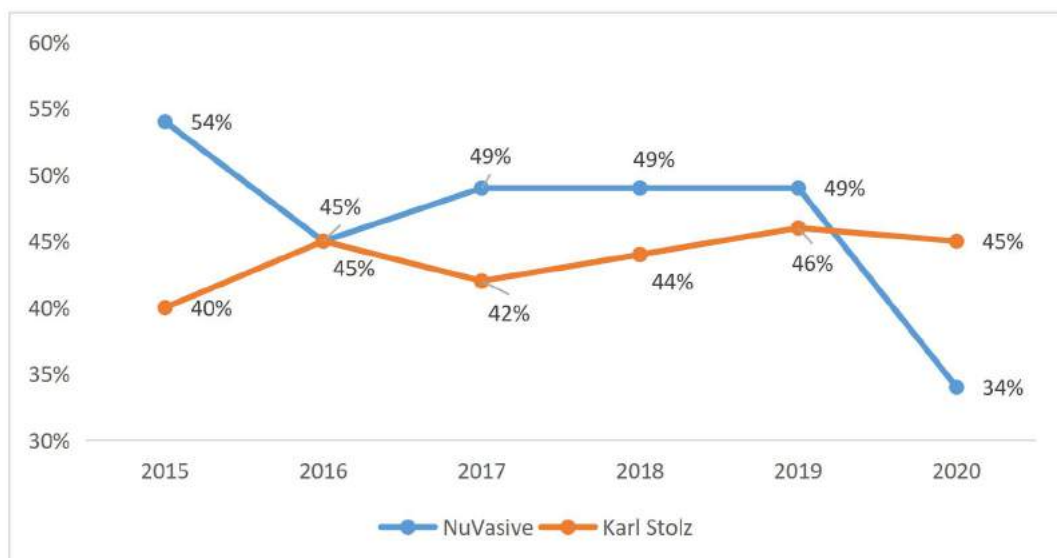


Figure 7: Equity Ratio Medical device industry (in %) (Own compilation)

NuVasive had a relatively high equity ratio of over fifty percent at the start of the comparison period. This number decreased in 2016 to 45% and slightly increased to 49% over the following three years. In 2020 the number significantly decreased to 34%. Karl Storz remained rather constant during the comparison period, varying from 40% in 2015 to 45% in 2020, showing small variations in the years in between. The companies in the medical sector presented similar numbers, which are compatible with the market standards for this KPI.

R&D Ratio

An important characteristic of Hidden Champions is their ability to innovate, and the emphasis they therefore place on research and development, as mentioned before. The comparison between the two companies' R&D ratios shows that both companies in the medical device sector spend similar percentages of their revenue on research and development – between 4% and 8%. NuVasive doubled its ratio, from 4% in 2015 to 8% in 2020, with a constant ratio of 5% to 6% in the years in between. The German company's constant ratio of 6%, varying one percent up or down during the 6 years

considered for the comparison period. Both companies showed that they care about innovation and presented good levels of spending on research and development. This illustrates the innovation orientation of the sector.

7.4.2. Non-Financial KPIs Comparison

Having analyzed and compared the financial KPIs of the two Hidden Champions, the next topics to be compared are the non-financial KPIs. First the export ratios will be compared and then an analysis will be made of the countries as a whole, to observe and compare the non-metric KPIs previously presented.

Non-metric non-financial KPIs

A common way to compare two or more countries is through the Hofstede's cultural dimensions, which is a theory that evaluates and quantifies characteristics of a country's society. This framework started while working at IBM, Hofstede realized that although the enterprise had a well established culture, the very different cultural backgrounds of employees from different countries created some unpleasant challenges. Hofstede created a questionnaire for over 70 subsidiaries covering different questions about values to enhance the understanding of cultural differences and prepare managers to handle their subordinates. More than 100,000 surveys had been done to explore the differences in thinking and social interaction that existed amongst members of more than 50 modern nations (Shi & Wang, 2011). Nowadays he uses different factor analyzing methods to show the effects of a society's culture on the values of its members, and how these values impact behavior in five different dimensions: power distance, individualism, internationalization, uncertainty avoidance, and long-term orientation (Hofstede, 2022).

We used Hofstede's cultural dimensions of USA and Germany as a basis for the comparison of the two countries and their Hidden Champions.

Export Ratio

A company cannot be a Hidden Champions if it only sells in its domestic market, as mentioned previously. A good indication of the importance of international sales is the company's export ratio. The comparison is seen below.

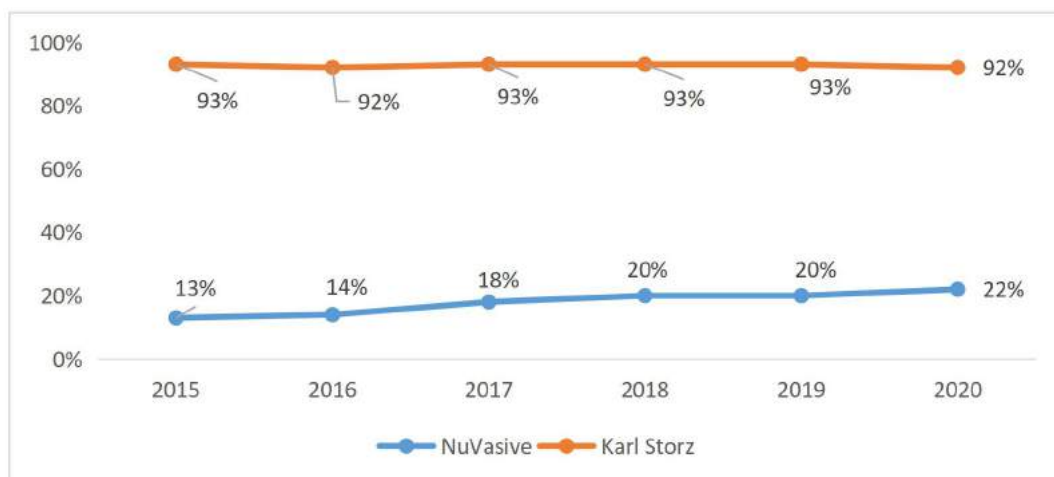


Figure 8: Export Ratio Medical device industry (in %) (Own compilation)

The greatest difference seen between these two companies in the medical device sector is without a doubt in the export ratio. The German company has had a constant extremely high export ratio of 92~93%. NuVasive showed a tendency to increase its export ratio, increasing from 13% in 2015 to up to 22% in 2020. The difference between both markets is quite significant.

The United States of America's medical device manufacturer's market size was valued at USD 176.7 billion in 2020. This accounts for more than one third of the world's USD 432.23 billion size. This is

the reason why NuVasive do not have such a high need to have an export ratio as high as that of Karl Storz's; The size of the German market being only USD 35.8 billion (Fortune business insight, 2022.).

Managerial Style/ Leadership and customer relationship

We use Hofstede's first three dimensions for these non-financial KPIs to illustrate how managers work in both countries:

- Power distance: The European country has a very strong middle class and is very decentralized with a score of 35 (Hofstede, 2022). German managers are known for being direct and leaders are usually expected to be experts in their fields. Strong unions also help to diminish the power distance within companies. This power distance seems to be higher amongst German Hidden Champions. Karl Storz is one of the over 62% HCs that are family owned. The distance between the leader and employees tends to be bigger in such companies.

US organizations usually have hierarchies established for mere convenience. Managers are accessible and rely on individual employees and teams for their expertise. People expect to have information shared frequently, and this is usually done in an informal way. That explains the below average score of 40 (Hofstede, 2022). NuVasive can be seen as a good example of this, as they have many groups as shareholders and executives are relatively young.

- Individualism: Shows the level of interdependence the society keeps between its members. The German society is an individualist society with a score of 67 (Hofstede, 2022). German Hidden Champions usually care significantly about their name and how they make the company a part of their personal identity (often they carry the family name, as in the case of Karl Storz). The importance of close relationships, typical of German Hidden Champions such as Karl Storz, providing each customer with an individual contact person to assess clients' needs, is another characteristic of individualism.

The USA's promise of being the "land of the free" is seen by the focus of the American society and government on equal rights. This contributes to NuVasive's high score of 91 in this dimension (Hofstede, 2022). People are expected to be self-reliant and proactive in business. The American Hidden Champions analyzed here, illustrates this fact. For example, none of their employees in the USA is part of any labor union. Close relationships are also important in the USA. NuVasive illustrated this characteristic very well by creating an application to keep in touch with their patients and surgeons post-surgery to maintain the customer relationship and bond very strongly.

- Masculinity: Germany is a masculine society, based on its score of 66 (Hofstede, 2022). Performance is highly valued since early ages, for example children are separated into different types of schools at the age of ten. This mentality motivate people to "live in order to work" and obtain a lot of their self-esteem from their jobs. That is another fact that explains why family owned German Hidden Champions are so keen on being best and carrying forward the leadership in a niche. Karl Storz illustrates this very well.

USA is another high masculine society, with a score of 62. This is explained by the fact that American people believe they should "be the best they can be" and that "the winner takes all". US citizens "live to work" to get monetary rewards and achieve a higher status based on how good one can be (Hofstede, 2022).

Innovation

We use two of Hofstede's dimensions to illustrate how innovative both countries and their two Hidden Champions are: long term orientation and uncertainty avoidance are observed:

- Uncertainty avoidance: Germany is amongst the uncertainty avoidant countries with a score of 65 (Hofstede, 2022). In combination with the country's low power distance, where the certainty of the outcome of own decisions is not covered by the larger responsibility of the boss, Germans prefer to compensate their higher uncertainty by strongly relying on processes/bureaucracy and on expertise.

This explains why German Hidden Champions are so specialized and niche oriented. They choose to be experts in a specific area and other companies choose to do business with them exactly because of this expertise.

USA has a below average score of 46 in Uncertainty avoidance (Hofstede, 2022). This contributes to the notion that the acceptance of new ideas, innovative products, and a willingness to try something new or different is a common practice for Americans within many different sectors. NuVasive shows these characteristics with its high innovative integrated technologies in less-invasive surgeries and integrated systems.

- **Long term orientation:** Every society must keep some links with its past while facing the challenges of the present and future. Germany has a high score of 83, which indicates how pragmatic this country is (Hofstede, 2022). Germany also has an ability to adapt traditions to unstable conditions, a quite strong propensity to save and invest, resilience and skills in achieving results. This pragmatism and propensity to invest is well displayed by how some Hidden Champions tend to innovate by acquiring smaller companies focused on innovation. One example is Karl Storz's purchase of the 'Gastroenterology' business unit from Xion GmbH.

USA has a relatively low long-term orientation score of 26 (Hofstede, 2022). Americans are prone to analyze new information to check whether it is true. Therefore, for the more traditional areas within the American society, changes take longer to be affected. This also explains why the most disruptive changes come from less traditional states where the Hidden Champions are located, such as California, where NuVasive's headquarter is situated.

7.4.3. Sector-specific KPIs Comparison/ Medical device industry

The last comparisons to be made, after having compared the non-financial KPIs of the two companies, analyzing United States and Germany in a macro perspective and the non-financial KPIs of its Hidden Champions, are regarding each sector's previously mentioned specific KPIs. Since only the medical device industry sector is evaluated, the three additional KPIs reflect strongly on that industry. These include Selling and Marketing Ratio, Inventory Turnover and Employer Rating.

S&M Ratio

Starting with the Selling and Marketing Ratio, the following figure shows the comparison of the two Hidden Champions in this aspect.

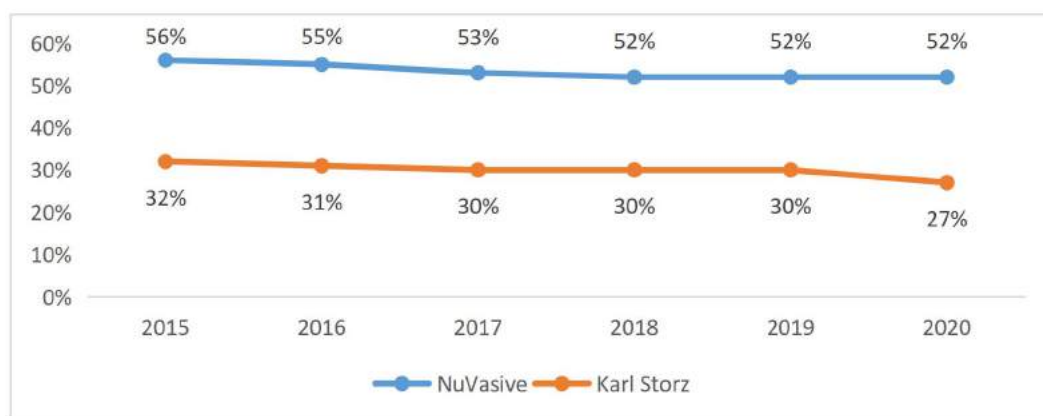


Figure 9: Selling and Marketing Ratio Medical device industry (in %) (Own compilation)

Both companies presented a constant S&M ratio. NuVasive maintained a figure above 50% throughout the whole comparison period, with the numbers not varying more than 4% from the 56% in 2015 to 52% in 2020. The German Hidden Champions had an S&M ratio of 32% in 2015 and kept it at a constant of 30% for the next 4 years and saw it going down to 27% in 2020. This indicates that the American company tends to spend more of its revenue on efforts to increase its sales.

Inventory Turnover

The next aspect to be considered is Inventory Turnover, presented in the Figure below, analysing the Inventory turnover ratio over time.

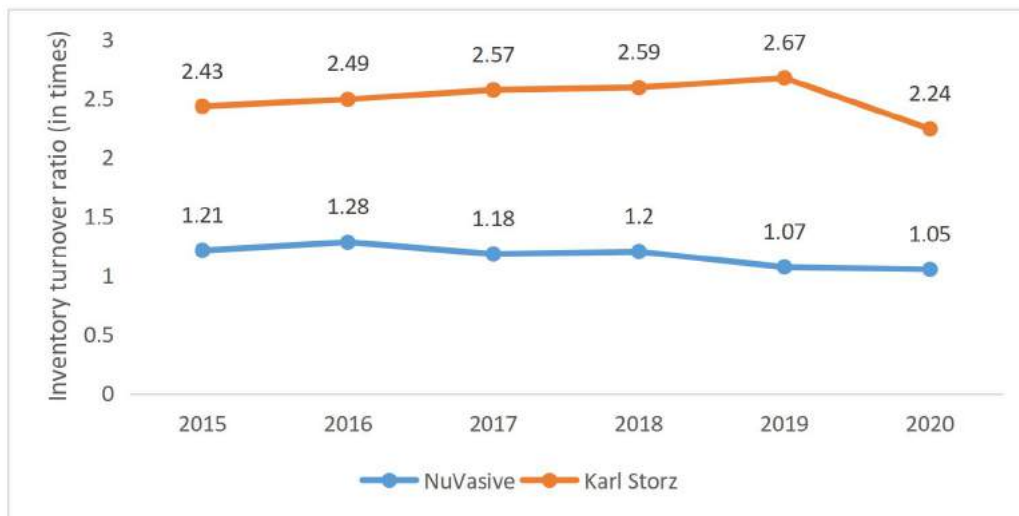


Figure 10: Inventory Turnover Medical device industry (in times) (Own compilation)

Karl Storz's inventory turnover had been twice that of NuVasive throughout the whole comparison period, varying around ten percent up or down from the initial 2, 43 registered in 2015. NuVasive had a 1, 21 inventory turnover in 2015, which remained constant during the following 4 years and slightly decreased to 1, 07 and 1, 05 in 2019 and 2020 respectively. This shows that Karl Storz keeps a lower inventory than NuVasive.

Employer Rating

Both companies have similar ratings about their employers from the employees. While the American NuVasive had a score of 3, 7, the German Hidden Champions got a mark of 3, 9, implying similar results.

8. Managerial Implications

The study offers insights into Hidden Champions market developments and comparisons between two different companies and markets, respectively. All the analysed aspects can be used successfully in a managerial practice, especially in the Hidden Champions' context or in the medical industry. The analysis, presented in the form of a case study, can present insightful input regarding what is deemed important to be considered as a key performance indicator, and how to determine the suitability of a market to emerge in growth. The two businesses discussed, operate in the medical technology industry. They display examples of reaching market dominance in certain niches, and highlights specific characteristics businesses to be aware of prior to entering either the American or German markets.

9. Conclusion

In this paper, the differences between German and American Hidden Champions in the medical device industry were investigated. The first difference already became apparent in the number of Hidden Champions in the two countries. The number of 1307 German Hidden Champions significantly exceeds the number of 366 US Hidden Champions. It was also noticed that American Hidden Champions are in age significantly younger on average than their German counterparts.

The investigation of and comparison between Hidden Champions in Germany and the USA indicated that financial KPIs are more similar between sectors, whereas non-financial or qualitative KPIs are indicating similarities between the two countries. Even though the two medical industry companies

have been in existence for decades and both have established business models, the data showed that the impact of the Covid-19 affected the Hidden Champions, regardless their locations.

Common characteristics that were shown in the data area high export ratio and a high R&D expense to revenue ratio. German Hidden Champions have a higher export ratio than that of the US. This is because of the German domestic market being significantly smaller than that of the US market. Export ratios still are overall an average of 61% as of 2021, showing that Hidden Champions generally generate a high profit from abroad.

Managerial style and customer relationships are significantly influenced by the cultural and structural background of the countries. Different managerial styles and ownership structures lead to different management decisions. Whereas in the USA, companies are frequently owned by financial investors, there are often family-run corporations in Germany. The German company seems to be much more focused on strategic sustainability with a strong focus on penetrating international markets. The US Company is more focused on the American market and more short term, financially driven.

Both businesses displayed a very strong innovation potential in the past and also towards the future. Cooperation with hospitals, universities and doctors is regarded as essential by both companies. Interesting to note is the cluster organization of the German Mittelstand (mid-size companies) and of the Medical Mountains in Tuttlingen, Germany.

This scientific work showed that Hidden Champions in Germany and the USA are well prepared for their future developments. Their innovative strength and the advanced implementation of Industry 4.0, equip them well to meet future challenges. Due to a limited number of in-depth analyses of Hidden Champions, some of the KPIs were hard to conclude. Based on this paper, further research on different Hidden Champions in the two countries could draw more precise common characteristics between the countries.

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Perceptions and Aspirations of Female Sports Students Towards Sport Leadership

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Keywords

Perceptions, Aspirations, Female sports students, Sports leadership

Abstract

Sport is an ever-growing industry that presents many employment opportunities in sports administration, sports management, and sports leadership. Despite these significant opportunities, females remain marginalised from pursuing or acquiring leadership positions in sports. This low representation of existing female sports leaders in South Africa prompted the need to investigate the perceptions and aspirations of female sports students toward sports leadership. The study adopts a quantitative research method, and data was collected using a self-administered questionnaire from a conveniently sampled 97 female sports students studying at a South African university. The study reveals that the female sports students' general perceptions are neither influenced by the leader's gender nor physical characteristics but rather by the leader's ability to make a change. The participants felt that the media plays a role in influencing perceptions by giving male sports more media coverage in comparison to the female sport. The study also found that female sports students believe females can pursue careers in sports leadership and that these careers and opportunities were not only suitable for males. Therefore, strategies for developing and affording students aspiring to become future sports leaders need to be developed. There is a further need for aspirant sports leaders to have role models and mentors who will also help them to develop skills and to introduce them to networks that will enable them to achieve their career goals of becoming sports leaders.

1. Introduction

Social and gender-based ideologies inform perceptions and aspirations. According to Coakley and Burnett (2014), ideologies are a defining aspect of our lives, and sport tends to reaffirm social and gender ideologies that already exist in society. Ideologies are "a shared interpretive framework that people use to make sense of and evaluate themselves, others, and events in their social worlds". Satore and Cunningham (2007) contemplate those existing societal ideologies may be partially responsible for the low representation of females in leadership positions in sports.

Males dominate leadership positions in national and international sports organisations, and females remain underrepresented in these positions (Spoor & Hoye, 2013). The overwhelming presence of males in leadership positions in sports not only perpetuates the perceptions of sport being a male arena but also reaffirms their masculine dominance in the industry (Massengale & Lough, 2010). Burton (2015) also confirms this notion by citing that sport is organised around the values of masculinity. What these perceptions and values then do almost nullify the presence of female leaders in sports because they are less visible. Thus, the low representation of females in leadership positions in sports has received considerable attention over the past decade (Satore & Cunningham, 2007). Scholars and professionals continue to seek a better understanding of this persisting trend. Through

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interrogating the imbalance of power and authority in sports leadership, it is necessary to investigate the isolated views of female sports students towards sports leadership and to assess their ambition further to become sports leaders.

The emerging body of literature focuses extensively on the barriers females face in acquiring leadership positions in sports. The glass ceiling is the most prominent barrier hindering females from accessing sports leadership positions (Mwisukha, Gitonga & Wanderi, 2010). Literature also demonstrates how the perceptions of sport being a male domain maintain the status quo in the industry (Massengale & Lough, 2010), with the media also playing a role in influencing the public's values and beliefs (Fink, 2013). Sport as an academic field has advanced tremendously quickly, and sport-related courses are being offered worldwide (Mathner & Martin, 2012). Sports students pursue sports careers for different reasons; however, their exposure to the realities of the sports industry, in the media, for example, has the potential to influence their perceptions and aspirations towards sports careers. According to Betzer-Tayar, Zach, Galily and Henry (2017), there is a belief that females are entering spaces, such as sports, that were previously considered to be reserved for males. Despite this belief, very few females hold leadership positions in sports organisations. This results from females facing barriers such as the glass ceiling, gender stereotyping, and male-oriented organisational cultures are favouring their male counterparts. These barriers ultimately influence their career aspirations and hinder their career development and growth (Betzer-Tayar et al., 2017; Deaconu & Rasca, 2015).

Despite the notable progress in females' inclusion in the sports industry, females still occupy a mere fraction of leadership positions compared to their male counterparts (Lovelin & Hanold, 2014). Various studies delve into the underrepresentation of females in leadership positions in sports (Ndimande-Hlongwa, 2016; Burton, 2015; Goslin & Kluka, 2014; Spoor & Hoye, 2013; Massengale & Lough, 2010; Satore & Cunningham, 2007), and use existing female leaders, working professionals or student-athletes as their subjects of interest. Given that universities are in the business of developing the next generation of sports leaders through their sports programs (Wesse & Beard, 2012), among their reasons, it is essential to establish the perception and aspirations of female students towards sports leadership. Knowledge and a better understanding of these aspirations will enable the design of appropriate interventions to improve the gender imbalance.

South Africa has expressed the urgency to promote females at all levels of leadership structures in sports (Ogunniyi, 2015). The earliest deliberate efforts are defined in the Gender Act 39 of 1996, which according to Ndimande-Hlongwa (2016), promotes females' right to gender equality across all industries, including sports. Over two decades later, however, South African females remain underrepresented in leadership positions in sports (Goslin & Kluka 2014). The challenges faced in sports and the need for leader and leadership development are recognised by academic researchers and sports administrators as areas that need to be addressed to advance more females into sports leadership positions (Ngwakwe, Egba & Mong, 2015). Even though this issue necessitates detailed study, it's unrealistic to attempt to research the entire sports industry. Therefore, to make a meaningful contribution to the existing body of literature, this study isolates the perceptions and aspirations of females, specifically female sports students, and focuses solely on leadership within the context of sport. Therefore, the study aims to investigate female sports students' perceptions and aspirations toward sports leadership.

2. Problem investigated

There is a belief that females are entering spaces such as sports that were previously considered to have been reserved for males (Betzer – Tayar, Zack, Galily and Henry: 2017:418). Despite this belief, very few females hold leadership positions in sports organisations. This is a result of females facing barriers such as the glass ceiling, gender stereotyping and male-oriented organisational cultures that favour their male counterparts. These barriers ultimately influence their career aspirations and hinder their career development and growth. So, the study's purpose is to investigate the perceptions and aspirations of female sports students towards sports leadership.

3. Research objectives

The research objectives of this study comprise the following eight research objectives

- a. To investigate the perceptions of female sports students towards sports leaders in general
- b. To investigate female sports students' perceptions of the media 's role in influencing perceptions towards sports leadership.
- c. To determine female sports students' perceptions towards perceived barriers towards pursuing or acquiring sports leadership positions

4. Hypotheses

The following main and sub-hypotheses were developed and tested based on the existing theory and literature.

Hypothesis 1: There is a significant statistical difference in the perceptions and aspirations of undergraduate and postgraduate female sports students towards;

- Sports leaders in general (Hypothesis 1.1)
- Perceptions of sports leaders in the context of South Africa (Hypothesis 1.2)
- Careers in sports leadership (Hypothesis 1.3)

Hypothesis 2: There is no significant statistical difference in the perceptions and aspirations of female sports students in different academic courses towards:

- Sports leaders in general (Hypothesis 2.1)
- Perceptions of sports leaders in the context of South Africa (Hypothesis 2.2)
- Careers in sports leadership (Hypothesis 2.3)

Hypothesis 3: There is a significant statistical difference in the aspirations of female sports students in different academic courses at a South African tertiary institution:

- Between those studying sports management and those studying sports science (Hypothesis 3.1)
- Between those studying sports management and those studying biokinetics (Hypothesis 3.2)
- Between those studying sports science and those studying biokinetics (Hypothesis 3.3)

5. Literature review

5.1 leadership in the sports industry

Since the late 1900s, academics have identified the growing significance of leadership in the sports industry (Peachey, Damon, Zhou & Burton, 2015). That is, the earliest contributions of sports leadership emerged from Chelladurai in the 1990s, who undertook the initial investigation of sports leadership literature (Peachy et al., 2015). Later, with the growing professionalism of the sports industry, the need for more formal organisational structures and specialised leadership has become significantly apparent for sports organisations to adapt and cope with the sector's growth (Naidoo, Coopoo & Surujlal, 2015). The way that leaders are perceived despite their qualifications or experience is influenced by the perceptions and stereotypes that people hold towards leaders (Schull, 2014). However, limited research has been conducted on leadership within the sporting context (Kim, Magnusen, Andrew & Stoll, 2012). Heer Peachey et al. (2015) have noted its recent importance. WiNaidoo et al. (2015) examine the perceived leadership styles of sports administrators within the sports setting. Results reveal that the most dominating leadership style adopted by sports administrators, who play an important role in influencing the success of sports organisations, is the transformational leadership style.

According to Mwisukha et al. (2010), the involvement of females in sports remains a controversial topic and dates to ancient times. It was not until the Greek era whereby organised sports activities were available to females. History has revealed that females have remained side-lined and

underrepresented in several aspects of the sport (Mwisukha et al., 2010). Goslin and Kluka (2014) studied perceptions of Malawian females educated in sports business leadership. The results show that completing an education programme positively influenced an individual's self-worth and the 'voice' of female leaders in Malawi. Although sport is an ever-growing industry, and this growth subsequently presents plenty of employment opportunities, the reality is that females remain underrepresented in leadership positions across sports organisations (Lovelin & Hanold, 2014). Schull (2014) attributes the absence of females in these roles to the fact that leadership positions in sports are entrenched in the production of hegemonic masculinity.

5.2 Perceptions toward sports leadership

One of the leading perceptions regarding leadership is that females are gaining momentum in achieving equality in leadership roles (Schwanke, 2013). According to Massengale and Lough (2010), the notion of sport being a male arena reinforces the culture of male superiority, which is maintained through unfair and discriminatory hiring processes by sports organisations. In Africa, for example, patriarchal structures dictate the lives of females and influence the opportunities to which they have access (Goslin & Kluka, 2014). This ultimately prevents females from pursuing sports careers and acquiring sports leadership positions. Brown and Light (2012) suggest that the sports industry is a man's world because very few females occupy decision-making positions in national and international sports organisations (Leberman & Palmer, 2009).

Sport is arguably one of modern society's most hegemonic social institutions (Betzer-Tayar et al., 2017). What this means is that sport promotes the dominance of a particular social group over others (Burton, 2015). Goslin and Kluka (2014) state that gender stereotyping plays a role in the overall under-representation of females in leadership positions for various reasons, which are highlighted in the following discussions. Even though sports may be considered a male arena, the literature suggests that the existing gender disparity in sports leadership is not static and can be shifted to be more inclusive of both genders. Meier (2015) believes that having more visible females as decision-makers can encourage all ages to participate in sports and pursue careers in sports leadership.

5.3 The media's role in shaping perceptions towards sport and sports leadership

The media have influenced people's perceptions since the late 1930s (Kin, 2015) and today, the media still plays a significant role in shaping perceptions (Tamir & Galily, 2010). For purposes of this study, media refers to "any form of communication that simultaneously reaches a large number of people, including, but not limited to, radio, television, newspapers, magazines, billboards, films, recordings, books, and the internet" (Kin, 2015). There have been repeated confirmation of the media's role in shaping public perception through various strategies. As it stands, male sport receives approximately 90 per cent of media coverage (Coakley & Burnett, 2014). This perception is attributed to how the media emphasises the physical attributes of female athletes as opposed to their physical performance (Walker & Bopp, 2011). Sexist language and visuals in the reporting sports also contribute to how females are perceived (Darvin & Sagas, 2017). Therefore, for females to develop beyond the narrative promoted by the media, they need to be cognisant that their competence is generally perceived and reported differently from that of their male counterparts.

The media can influence the public's perception of sport-related matters, careers, notions, and narratives. For example, the lack of media coverage of females in sports leadership careers significantly creates the absence of female role models (Goslin & Kluka, 2014). The lack of coverage of males in sports and the subsequent 'absence' of female role models almost imply that female role models don't exist because they aren't visible. Media content can therefore be considered fictitious, depending on what narrative the media is trying to promote. It is important to note that people who work in the media industry (i.e., producers and journalists) edit media content to achieve goals such as influencing the public and societal values and gaining financial profits (Coakley & Burnett, 2014:264).

5.4 Aspirations toward careers in sports leadership

From early adolescence, individuals tend to select careers that seem to be exciting and enjoyable. As they transition into early adulthood, however, career selection begins to get complicated (Hutchinson,

2008:1). Generally, career selection is a complex event, which makes it difficult to predict the outcomes, because individuals will pursue a particular career based on various reasons (i.e., to improve society, for personal satisfaction, achievement, security, or monetary reasons) (Sibson, 2011:3). According to Aman, Yusof, Ismail and Mohamed Razali (2018:154), males generally have well-planned careers that target leadership positions. At the same time, females tackle career plans with minimal intention or confidence to pursue leadership positions. Goslin and Kluka (2014:94) attribute this to the lack of reporting of female sports leaders, making it seem as though they don't exist. It may also seem like a far-fetched goal for females to aspire towards leadership in sport. In the study, aspirations refer to the ambition or desire of a female sports student to pursue a career in sports leadership.

A comparison study that was conducted on the types of jobs that males and females were most likely to pursue revealed that males are more likely to apply for jobs in which they were less qualified, whilst females would only do so upon confirmation that they were qualified for the role (Aman et al., 2018:154). Their reluctance to aggressively pursue these leadership positions stretches the gap of female sports leaders even wider (Wesse & Beard, 2012:1). Sports leadership amongst females in sport is, however, a pressing issue, and the consensus is that perhaps it is a poorly understood area of sport (Ngwakwe et al., 2015:1126). Simon and Hoyt (2012:233) note that increasing the voice of females in sports is an important by-product of expanding the representation of females in leadership positions.

5.5 Underrepresentation of females in leadership positions in sport: A recurring global theme

The underrepresentation of females in careers in sports leadership is a historical phenomenon, and measures to address this imbalance are continuously being explored (Mwisukha et al., 2010). According to Aman et al. (2018), sports organisations, National and International Sports Federations, and even the International Olympic Committee continue to struggle with meeting the 20% representation dispensation of females on executive boards. For example, leadership positions in the South African Football Association (SAFA) are undeniably dominated by males. The long-standing domination of males in South African football is the result of the sport being regarded as a male domain (Ndimande-Hlongwa, 2016). More and more females are participating in sports at various levels and are enjoying the physical and health benefits of their participation in sports. They also build character and develop life skills such as discipline, teamwork, and leadership from their involvement in sports (Schull, 2014). This involvement is somehow hindered, and females seldom get the opportunity to use the skills they have acquired through participation in sports in the professional workspace (Mwisukha et al., 2010). Walker and Bopp (2011) cite that the lack of representation of females in sports can lead to the overall loss of the female voice in the sport.

The increased participation in sports by females implies that although the sport has become more inclusive of and accessible to females through various strategies, such as gender equality policies (Schull, 2014; Shaw & Frisby, 2006), leadership positions remain linked to sex-role stereotypes (Betzer-Tayar et al., 2017). For example, a male coach is more likely to have the opportunity to coach both male' and female sports, whilst female coaches are limited to coaching female teams (Walker & Bopp, 2011). It is important to note that females were denied administrative positions in the International Olympic Committee (IOC) for a very long time. The first female was appointed to the IOC only in 1981, almost a century after the inaugural Modern Olympic Games in 1896. The trend is no different in Africa; males have dominated the sport for a long time (Mwisukha et al., 2010). Literature notes that patriarchy is a recurring theme that governs and influences how males and females access leadership opportunities and positions (Goslin & Kluka, 2014).

According to an enquiry conducted by the Australian Federal Government in 2006, there was a modest representation of females in leadership and decision-making positions in sports. This was despite the government's efforts to rectify gender inequality through sports policies and affirmative action laws (Brown & Light, 2012). In Kenya, the Affirmative Action Bill of 2007 centres on promoting education, participation, and representation of females in public sector jobs. However, females in sports leadership remain underrepresented. According to M'mbaha and Chepyator-

Thomson (2018), this is because of historical, political, and social structures during colonial periods that have continued to marginalise females from working through the sport's ranks. The reality of the underrepresentation of females in sports leadership is no different in South Africa, which is a nation that is characterised by progressive political policies regarding gender equality (Ogunniyi, 2015). The National Sport and Recreation Act 110 of 1998 "... provides measures aimed at correcting imbalances in sport and recreation ..." and is supplemented with The National Sport and Recreation Amendment Act 18 of 2007, which "... provides guidelines for the promotion of equity, representation and redress in sport and recreation ...". Despite this existing legislation, there has been a failure to show for this in the form of a discernible reality in industries such as sport.

The study sought to contribute to the existing literature by exploring how female sports students at a South African tertiary institution perceive matters relating to gender and leadership in sports.

5.6 Perceived barriers toward leadership positions in sport

Controversy about the involvement of females in sports dates to ancient times and various factors are perceived to be barriers to attaining leadership positions in sports. However, the glass ceiling has been cited as a major barrier (Mwisukha et al., 2010). The term glass ceiling was initially used in *The Wall Street Journal* in 1986 and is a phenomenon that implies that there is a transparent barrier that keeps females and minorities from accessing top-level positions (Ström & Burvall, 2018). In recent years, there have been assertions that the glass ceiling barriers have decreased because females have started to enter positions that were once reserved solely for males. The previous discussion paints a different story. Females continue to face barriers to career advancement that favour males (Betzer-Tayar et al., 2017). Diaconu and Rasca (2015) believe that despite the apparent improvements that have been made recently in terms of females' career choices and female empowerment policies, the lack of females in leadership positions suggests that the glass ceiling is far from disappearing. Other barriers that restrict females from attaining leadership positions in sports include the absence of professional networks for females, the lack of same-sex role modelling, self-limiting behaviours, and societal expectations of motherhood.

6. Research methodology

6.1 Research approach and design

The most practical philosophy to the study is the philosophy of positivism. Positivism can be applied to the social world. Positivists aim to describe an experience through observation to predict the world around us and make accurate and unbiased generalisations (Mackenzie & Knipe, 2006). Hence the decision to undertake a positivist research philosophy. It encourages understanding of the perceptions and aspirations that female sports students hold towards sports leadership. Besides, a deductive research approach is undertaken in the study to test the relationship between concepts and variables. That is, the concept is sports leadership, and the variables are female sports students' perceptions and aspirations. The research design of the study is a mono-quantitative method. This means that only one method, namely a questionnaire, is used to investigate the study's research objectives. The study further undertakes a cross-sectional approach due to its relevance in assessing attitudes (perceptions and aspirations). This is because a cross-sectional study is characterised by the collection of data at a particular point in time (Kesmodel, 2018) and allows the researcher to establish a relationship between the variables of interest (perceptions and aspirations) that exist within a particular population (female sports students).

6.2 Research sample

The study's target population was all female sports students at universities in South Africa. The total population is approximately 7,500 female sports students. The study is conducted on a convenience sample of 97 female sports students studying at one higher education institution in Johannesburg. The participants within the convenience sample are either undergraduate or postgraduate students. They are studying towards either an academic diploma or degree and sports management, sports development, sports science or biokinetics. The targeted sample at this institution (i.e., the total number of female sports students) was 200. The response rate was, therefore 48.5%.

6.3 Data collection

The research instrument that is used to collect data was a questionnaire. The questionnaire is organised into three sections, Section A: The demographic profile of each participant, Section B: The perceptions of each participant towards sports leadership, and Section C: The aspirations of each participant towards sports leadership. Section B includes statements such as, “My perception of a leader is influenced by the gender of the leader”, “Media plays a role in the lack of media coverage of female sports leaders”, and “I believe that females can also pursue leadership positions in sport”. Section C comprised of statements such as, “My goal is to become a sports leader in the future”, “I have the capabilities and skills to become a sports leader”, and “I want to become a role model when I become a sports leader”. The participants were requested to rate their responses to a series of statements in Sections B and C along a five-point Likert rating scale. The points on the scale ranged from strongly disagree to strongly agree, with neutral placed at the centre of the scale.

6.4 Data analysis plan

The data of the study was coded and captured by the University of Johannesburg’s (UJ) Statistical Consultation Services (STATKON). Statistical Package for the Social Science (SPSS) 25.0 software program was used to analyse the data coded by STATKON. The following statistical data tools were used to generate outputs from the data: descriptive statistics, reliability analysis, correlation analysis, independent sample T-tests, and one-way ANOVA.

6.5 Validity and reliability

The six constructs of the questionnaire are presented in table 1. Each construct is tested for validity and reliability using Cronbach's Alpha Coefficient, and the results of the statistical tests are presented in Table 4.1. The universally preferred coefficient value of 0.7 and higher indicates that the statements that make up each construct measure the same thing (Saunders et al., 2016:451), demonstrating reliability.

Table 1: Results of tests for validity and reliability using Cronbach's Alpha Coefficient

Research Constructs	Number of participants	Number of items	Cronbach's Alpha Coefficient
Perceptions toward leaders in general	95	9	0.603
Media's role in influencing perceptions	93	9	0,883
Perceived barriers to pursuing or acquiring sports leadership positions	95	18	0,676
Perception of sports leaders within the context of South Africa	97	6	0,763
Perceived importance of academic qualification in sports leadership	96	6	0,757
Aspirations toward sports leadership	94	15	0,888

The construct that reflects the lowest Cronbach's Alpha Coefficient of 0.603 relates to the participants' perceptions of leaders, tested in Section B of the questionnaire. This value is below the preferred coefficient value of 0.7. However, a value above 0.5 is still considered to be reliable. The highest coefficient value is 0.888, well over the preferred value of 0.7 and relates to the participants' aspirations towards sports leadership, which is tested in Section C of the questionnaire. The rest of the constructs reflect coefficient values which are higher than 0.7, therefore demonstrating the validity and reliability of the constructs. One statement (n) is omitted from the construct relating to the participants' perceived importance of an academic qualification concerning sports leadership during the statistical analysis for validity and reliability. This statement is omitted because it has a low inter-item correlation value, which subsequently decreases the combined coefficient for the construct to a value below the preferred value of 0.7. The coefficient value relating to the construct of the participants' perceived barriers towards pursuing or acquiring sports leadership positions is 0.676, slightly below the preferred 0.7 coefficient value. This is attributed to the large number of statements that comprise the construct, which tends to result in a reduced coefficient value.

7. Findings and discussion of results

Participants were asked to rate their responses to a series of statements in the questionnaire along a five-point Likert rating scale. The selection of responses ranged from strong disagreement to strong agreement to a statement, each with a mean score of one and five, respectively. Each objective is measured using descriptive statistics such as mean, standard deviation and ANOVA. An overall mean score of each statement of 4.00 and above indicates the participants' full agreement with a statement, while a score of less than 3.00 indicates the participants' full disagreement with a statement. A mean score of 3.50 represents a moderate agreement by the participants to the statements and the mean score is the most frequently used measure of the central tendency of data (Saunders et al., 2016).

7.1 Demographic characteristics

The demographic profile of the participants, such as age groups, racial groups, academic levels, academic courses, and type of academic qualifications, is presented in table 1. It describes the different age groups, in years, of the female sports students who participated in the study.

Table 1: Respondent's demographic characteristics

Variables	Options	Frequency	Percentage
Age	19-24	6	6.2
	25-30	89	91.8
	>=30	2	2.1
	Total	97	100.0
Race	Black	49	50.5
	Coloured	8	8.2
	Indian	5	5.2
	White	34	35.1
	Total	96	99.0
Study level	Undergraduate	69	71.1
	Postgraduate	26	26.8
	Total	95	97.9
Type of academic qualification	Diploma	43	44.3
	Degree	54	55.7
	Total	97	100.0

Source: Own compilation

Most of the participants (89 participants) were between the ages of 19 and 24 years old (91.8%), six participants were 18 years or younger (6.1%), and two participants were between the ages of 25 and 30 (2.1%). Consistently, according to a report that Statistics South Africa published on Higher Education and Skills in South Africa (2017), attendance at higher learning institutions is highest among the youth aged between 20 and 22 years. The participants are split into four racial groups based on their indications on the questionnaire. According to the data set, 49 (51%) participants of the study are black, 34 (35.4%) participants are white, eight participants represent the coloured racial group (8.3%), and five (5.2%) participants belong to the Indian racial group. The representation of the various racial groups in the study is closely linked to an online article by News24 in 2017 on the generic racial representation of students at South African universities. According to the article, of the 766 812 students who were enrolled in various South African higher education institutions in 2016, 66,4 per cent were black, 18,7 per cent were white, 7,8 per cent were Indian/Asian and 7,1 per cent were coloured (News24, 2019).

Regarding the academic levels, most participants were undergraduate students and comprised 9 participants) of the study. Similarly, the undergraduate and postgraduate split amongst the participants is parallel to the 2016 Statistics on Post-School Education and Training, contained in a report released in March 2018 by the South African Department of Higher Education and Training. The report gives a generic account of all students enrolled at one of the 26 South

African higher education institutions that comprise the public higher education sector in 2016. 80.4% of these students were undergraduate students, while 17.5% were postgraduate students. This data was extracted from The Higher Education Management Information System database in 2017 (Statistics South Africa, 2017).

Besides, over half of the study participants, 56.7%, were studying towards a qualification in sports management. According to Wesse and Beard (2012), universities are in the business of offering the best sports management qualifications with the deliberate intention of developing the next generation of sports leaders. Also, table 1 indicates that 56% of the participants in the study were studying toward a degree, and 44% were studying toward a diploma. This means that many of the female sports students were pursuing a degree qualification instead of a diploma qualification. These findings are consistent with those in the 2016 Statistics on Post-School Education and Training report. The report reveals that of the 80.4% of students who were undergraduate students, as mentioned above, 54.3% were studying for a degree, while only 26.1% were studying for a degree (Statistics South Africa, 2017).

7.2 Females' perceptions of sports leadership and media role

7.2.1. Perceptions toward sports leaders

Table 2: female's aspirations toward sports leadership

My perception of a leader:	Mean	Std. Dev.
Is influenced by the gender of the leader.	1,78	0,915
Is influenced by the physical characteristics of the leader.	2,38	1,334
Is influenced by the leader's level of education.	3,67	1,028
Is influenced by the work experience the leader has.	4,03	0,864
Has been influenced by what I taught about leaders when I was younger.	3,38	0,951
Has been influenced by what I have experienced about leaders when I was younger.	3,65	0,817
Is that she/he can make a change.	4,46	0,664
Is that she/he earns a high salary.	2,48	0,991
Is that she/he works long hours.	3,14	1,164

An objective of the study was to investigate the perceptions of female sports students towards sports leaders in general. Most of the participants perceive that leadership is not influenced by gender ($M=1.76$, $SD=.915$), physical characteristics of the leader ($M=2.38$, $SD=1.334$), and level of salary ($M=2.48$, $SD=0.991$). The highest mean score ($M=4.46$, $SD=0.664$) stated that participants perceive that a leader can make a change. Here, the lowest standard deviation indicates that the respondent's response is not highly deviated or the perception of most of the respondents are similar. The respondents also believe that a leader is influenced by the work experience they have ($M=4.03$, $SD=0.864$). On the other hand, the respondents chose neutrality on their thought that leader works long hours ($M=3.14$, $SD=1,164$).

7.2.2. Media's role in influencing perceptions

Table 3 presents the results of the study participants' opinions on the statements relating to the media's role in influencing perceptions.

Table 3: Media's role in influencing perceptions

Media plays a role in:	Mean	Std. Dev.
The lack of media coverage of female sports leaders.	4,02	0,973
Making female sports leaders less visible than male sports leaders.	3,99	1,005
Making male sports leaders more visible than female sports leaders.	4,14	0,913
Promoting negative stereotypes towards female sports leaders.	3,56	1,094
Giving male athletes more media coverage than female athletes.	4,22	0,915
Giving male sports more media coverage than female sports.	4,29	0,807

Promoting sexist language and visuals towards female athletes.	3,45	0,905
Overemphasising the physical characteristics of female athletes.	3,76	0,987
Downplaying the sporting achievements of female athletes.	3,96	0,900

The results reveal that most of the statements score high regarding the mean, which indicates the participants' agreement with the assertions made regarding the media's role in influencing perceptions. The highest mean score of 4.29 belongs to the statement "Media plays a role in giving male sports more media coverage than female sports which reflects the participants' agreement with this statement. The lowest mean score of 3.45 reports that the participants neither agree nor disagree. That is, the participants display some neutrality towards the media's role in promoting sexist language and visuals toward female athletes. A careful analysis of the results indicates that only one of the statements in Table 3 reflects a mean score lower than 3.50. That is, they have a neutral perception of the media's role in promoting sexist language and visuals toward female athletes. This further indicates the participants' overall agreement with the statements regarding the media's role in influencing perceptions. Further, the highest standard deviation 1.094 indicate that the respondents have no similar perception of the media's role in promoting negative stereotypes towards female sport leaders

7.2.3. Perceptions of sports leaders within the context of South Africa

Another objective of the study is to investigate female sports students' perceptions of sports leaders within the context of South Africa. Table 4 presents the results of how sports leaders within the South African context are perceived by the participants.

Table 4: Perceptions of sports leaders within the context of South Africa

My perception of sports leaders in the context of South Africa is that:	Mean	Std. Dev.
There are few female sports leaders in South Africa.	4,29	0,577
There are few female sports leaders in Africa.	4,07	0,649
There are few female sports leaders in the rest of the world.	3,54	0,990
Leadership positions in sports are dominated by males.	4,40	0,759
Sports organisations are led by males.	4,36	0,806
Females are side-lined from acquiring decision-making and sports leadership positions.	3,96	0,877

Table 4 shows that the mean scores across this section are all higher than 3.50, indicating the participants' strong agreement with all statements. The lowest mean score of 3.54 relates to the statement, "My perception of sports leaders in the context of South Africa is that there are few female sports leaders in the rest of the world." This means score size, although it reflects an agreement to the statement by the participants in comparison to the rest of the mean scores, could possibly indicate a lack of awareness by the participants of the presence of internationally based female sports leaders. The highest mean score of 4.40 indicates that the leadership positions in sports are dominated by males. That is, over 90% of the participants are of the perception that leadership positions in sports are dominated by males. The second highest mean score of 4.36 indicates the perception that sports organisations are predominantly led by males. Similarly, the mean score of 4.29 suggests that the participants hold the perception that there are few South African sports leaders.

7.3 Perceived barriers toward pursuing or acquiring sports leadership positions

Table 5 details the results pertaining to the barriers that exist in the pursuit or acquisition of sports leadership positions, as perceived by the participants in the study.

Table 5: Perceived barriers toward pursuing or acquiring sports leadership positions

I believe that:	Mean	Std. Dev.
Sport is not gender neutral.	3.92	1.304
It is natural for males to be sports leaders.	2.49	1.209
It is unnatural for females to be sports leaders.	1.65	0.962
Careers in sports leadership are only suitable for males.	1.33	0.608
Females can also pursue leadership positions in sports.	4.88	0.331
Males have more opportunities to become sports leaders.	3.99	0.974
Females have fewer opportunities to become sports leaders.	3.94	1.008
There are more male sports leaders than female sports leaders.	4.32	0.700
The promotion of the male gender over the female gender creates inequalities in sport.	4.30	0.632
A male-masculine culture is promoted over a female-feminine culture in sport.	4.09	0.792
An invisible barrier (glass ceiling) prevents females from reaching leadership positions in sports.	3.86	0.913
Gender stereotypes indicate which leadership positions are suitable for males and females (e.g. Males = CEO; females = receptionist).	3.97	1.094
The use of sexist language discourages females from pursuing or acquiring leadership positions in sports.	3.93	0.938
Self-limiting behaviours of females prevent them from pursuing or acquiring leadership positions in sports.	3.70	0.915
The demands of motherhood prevent females from pursuing or acquiring sports leadership positions.	3,06	1,221
The absence of professional networks specifically for females prevents females from pursuing or acquiring sports leadership positions.	3,67	0,863
The lack of female leader role models creates an unrealistic goal for females who aspire to become sports leaders.	3,75	1,051
Established female sports leaders prevent other females from acquiring leadership positions in sports for various reasons.	2,61	0,995

Table 5 shows that the lowest mean score, 1.33 revealed that the respondents did not believe that careers in sports leadership are only suitable for males. This is followed by a mean score of 1.65, which reflected that they believe that it is not unnatural for females to be sports leaders. The participants strongly disagree with the statement as well. The strong disagreement by the participants, between the two statements which reflects the two lowest means, shows a consistency in the participants' perceptions when the highest mean score in Table 5 is reflected upon. The highest mean score of 4.88 stated that the participants' perceptions toward females is that females were being able to pursue leadership positions in sports. This reveals that the participants believe that females can also pursue leadership positions in sports and that careers in sports leadership are not only suitable for males. It is interesting to note that just only a few of the statements in Table 5 reflect mean scores of over 3.50, suggesting that there is a significant agreement among the participants towards the statements relating to the perceived barriers to pursuing or acquiring sports partnership positions. Besides, a mean score of 3.99 suggests that the study participants agree with the statement that males have more opportunities to become sports leaders.

The statement "I believe that a male-masculine culture is promoted over a female-feminine culture in sport,". It has a mean score of 4.09 which reflects a strong agreement by the participants to this statement. The third statement, which measures the participants' belief towards the promotion of males over females, reveals creating inequalities between the genders in sport. A mean score of 4.30 shows that the female sports students believe that the promotion of the male gender over the female gender indeed creates sporting inequalities. Lastly, a statement that reads, "I believe that there are more male sports leaders than female sports leaders" indicates the respondent's agreement with the mean score of 4.32, which is also the second highest mean score under this construct. It is worthy to

note the mean score of 3.06, suggests that the participants display a certain level of neutrality towards the statement, “I believe that the demands of motherhood prevent females from pursuing or acquiring sports leadership positions.” This is possibly attributed to the fact that the participants have not experienced motherhood yet, and therefore are unable to objectively respond.

7.4 Aspirations toward sports leadership

Table 6 details the results of female sports on students’ aspirations towards careers or positions in sports leadership.

Table 6: Aspirations toward sports leadership

My <u>aspirations</u> toward careers in sports leadership.	Mean	Std. Dev.
Careers in sports leadership seem exciting, therefore I aspire to become a sports leader in the future.	4,01	0,860
Careers in sports leadership seem enjoyable therefore I aspire to become a sports leader in the future.	3,92	0,799
I have an interest in becoming a sports leader in the future.	4,06	0,818
My goal is to become a sports leader in the future.	3,87	0,931
I am working towards becoming a sports leader in the future.	3,88	0,949
I have the capabilities and skills to become a sports leader.	4,16	0,701
I am interested in becoming a sports leader because I’m attracted to the salary associated with the leadership position.	2,84	1,017
I am interested in becoming a sports leader because I want to make a change.	4,25	0,830
I am interested in becoming a sports leader because there are few female sports leaders in South Africa and the rest of the world.	3,82	1,010
I am not put off from becoming a future sports leader by the long working hours required from a sports leader.	3,71	0,951
I am not put off in becoming a future sports leader by the gender stereotypes associated with female sports leaders.	3,90	0,872
I am not put off by the media in becoming a future sports leader.	3,93	0,857
I am not put off by the barriers that prevent me from becoming a sports leader in the future.	3,99	0,770
I have a mentor who is assisting me to develop into a sports leader in the future.	2,71	1,127
I want to become a role model when I become a sports leader.	4,40	0,702

The mean scores in Table 6 range between 2.71 and 4.40. The lowest mean score of 2.71 indicates that over 50% of the participants disagree with the statement, “I have a mentor who is assisting me to develop into a sports leader in the future.” The second lowest mean score 2.84, relates to a statement, “I am interested in becoming a sports leader because I am attracted to the salary associated with the leadership position”, shows disagreement by the participants. It is however worthy to note that 38% of the participants express some neutrality towards the attractiveness of the salary associated with being a sports leader. This result is consistent with another result, whereby over 50 per cent of the participants do not believe that leaders earn a high salary. Therefore, if this is their belief, the associated salary of being a leader won’t necessarily be a motivating factor for them aspiring to become future sports leaders.

90% of the female sports students “... want to be role models when they become sports leaders.” This statement reflects the highest mean score of 4.40, which indicates that there is a strong agreement toward this statement among the participants. Only one per cent of the participants disagree with this statement, while just over 9 per cent are impartial to the desire of becoming role models when they are sports leaders in the future. The remaining statements, each reflect a mean score of over 3.50. This indicates that the participants have an overall moderate to a strong agreement with the statements. An

analysis of the statements and the results reveals that there is a strong ambition by the female sports students to become sports leaders.

7.5. Differences in perception and aspiration between different levels of study, academic courses, and sports leadership

To better understand the perceptions and aspirations of female sports students towards sports leadership, the study sought to establish if there is a significant difference in perceptions towards sports leadership between undergraduate and postgraduate female sports students. Also, it tends to establish if there is a significant difference in perceptions towards sports leadership among female sports students in different academic courses. Accordingly, three hypotheses relating to the aforementioned objectives were postulated and each hypothesis is broken down into sub-hypotheses.

7.5.1 Differences in levels of study

The study applies a t-test analysis to test the statistical significance of the difference in the perceptions and aspirations of undergraduate and postgraduate female sports students. The results of the test are presented in Table 4.8 and discussed below.

Table 8: One-way ANOVA Test – Academic courses

		Sum of Squares	Df	Mean Square	F	Sig. (p-value)
Perception of leaders	Between Groups	0,246	2	0,123	0,339	0,713
	Within Groups	33,716	93	0,363		
	Total	33,962	95			
Perception of sports leaders in the context of South Africa	Between Groups	0,916	2	0,458	1,614	0,205
	Within Groups	26,376	93	0,284		
	Total	27,292	95			
Aspirations toward careers in sports leadership	Between Groups	9,945	2	4,972	24,192	0,000
	Within Groups	19,115	93	0,206		
	Total	29,060	95			

The results from the one-way ANOVA test in Table 8 show that the p-values, which are tested at a significance level of 0.05, reflect that there is no significant statistical difference in the perceptions of different groups of female sports students. There is however a significant statistical difference in the aspirations of female sports students studying different academic courses, which is reflected in the p-value of 0,00. The result indicates that there was no significant statistical difference in the participants' perceptions of leaders, who are studying different courses. Besides, the result shows that there is no significant statistical difference in the participants' perceptions, who are studying different courses, regarding sports leaders in the context of South Africa. Also, there is a significant statistical difference in the participants' aspirations, who are studying different courses, in sports leadership. When an ANOVA test concludes that a significant statistical difference exists within a data set, a post-hoc test needs to be done to establish which groups of students are significantly different from the other groups. This is done using the Dunnett T3 Post Hoc Test.

7.5.2 Academic courses and aspirations toward sports leadership

The results from the one-way ANOVA test revealed that there is a significant statistical difference in the aspirations of the female sports students who are studying different academic courses, towards careers in sports leadership. Therefore, the purpose of this test is to establish amongst which groups the statistical difference occurs. The results from the posthoc test are presented in Table 9.

Table 9: Dunnett T3 Post-hoc Test – Academic courses and aspirations towards sports leadership

Hypothesis	Variables	Items	Mean difference	Std. Error	Sig. (p-value)	95% Confidence Interval	
						Lower Bound	Upper Bound
Aspirations toward careers in leadership	Sport Management	Sport Science	0,19186	0,10106	0,198	-0,0723	0,4560
		Biokinetics	0,71449	0,11976	0,000	0,4175	1,0115
	Sport Science	Sport Management	-0,19186	0,10106	0,198	-0,4560	0,0723
		Biokinetics	0,52263	0,13789	0,002	0,1778	0,8674
	Biokinetics	Sport Management	-0,71449	0,11976	0,000	-1,0115	-0,4175
		Sport Science	-0,52263	0,13789	0,002	-0,8674	-0,1778

Hypothesis 3 is accepted because there is indeed a significant statistical difference in the aspirations of female sports students studying different academic courses, towards sports leadership. This is reflected in all the p-values in Table 9 that are below 0.05. Table 9 also shows that there was no statistically significant difference in the aspirations towards careers in sports leadership, of the female sports students studying sports management and sports science. This lack of significant difference is expressed in the p-value of 0,198, which is tested at a significance level of 0.05. A significant difference in aspirations towards careers in sport leadership exist between female sports students studying sports management and biokinetics, and female sports students studying sports science and biokinetics, as indicated by the p-values 0.000 and 0.002 respectively in Table 9. Similarly, there are significant statistical differences exist between the aspirations of female sports students studying sports management and those studying biokinetics and between those studying sports science and those studying biokinetics.

7.5.3 Discussions

The aim of this study was to investigate the perceptions and aspirations of female sports students toward sports leadership. Ultimately, the reporting of the perceptions and aspirations of female sports students can potentially enable sports institutions to re-evaluate their organisational values to be more inclusive and receptive to females. In addition to this, sports organisations may be compelled to restructure their recruitment and selection processes for leadership positions to be fair and transparent. These strategies can all be implemented to address the underrepresentation of female sports leaders. It is revealed in the background of the study that most leadership positions in national and international sports organisations are largely occupied by males, and that females remain marginalised across these roles (Spoor & Hoye, 2013). The study’s problem statement further articulated those females are often faced with barriers that ultimately hinder their career development and growth (Betzer-Tayar et al., 2017; Deaconu & Rasca, 2015). The literature review of the study highlighted the media’s role in influencing perceptions, particularly regarding sports and sports leadership. An example of how the media does this, is by prioritising media coverage of male sports leaders over female sports leaders, making the already few female sports leaders less quantifiable (Goslin & Kluka, 2014:94). Existing literature regarding the aspirations towards careers in sport was also explored in the review. A key assertion that was made regarding these aspirations toward sports leadership positions was that males are the ones who generally target leadership positions in their career paths (Aman et al., 2018:154).

The study reveals that the participant’s perception of a leader is neither influenced by an individual’s gender nor physical characteristics. The participants’ most prominent perception of a leader is influenced by the leader’s ability to make a positive change. The study further found that female sports students are of the view that there are few female sports leaders in South Africa. They further perceive leadership positions in sports to be dominated by males, because sports organisations are mostly led by males. Besides, the study found that the participants hold relatively negative perceptions of the role that the media plays in influencing people’s perceptions. The participants are of this view because of the media’s role in giving male sports more media coverage than female sports, offering male athletes more media coverage than female athletes, and by making female sports leaders less visible than male sports leaders through their lack of media coverage. The study also revealed that female sports students do not perceive careers in sports leadership to be only suitable for males. They

hold the strong sentiment that females can also pursue leadership positions in sports, like their male counterparts. Parallel to this sentiment, the participants believe that there are more male sports leaders than female sports leaders.

The study found that female sports students are of the perception that there are few female sports leaders in South Africa. They further perceive leadership positions in sports to be dominated by males, because sports organisations are mostly led by males. Also, the participants emphasise an overall positive perception of the importance of academic qualification in relation to sports leadership. Female sports students believe the following in terms of their academic qualifications: that it is preparing them for a future career in sports leadership because it is helping them develop the necessary skills and capabilities, and that it will enable them to make a positive change when they become sports leaders in the future. Moreover, the study reveals three prominent views by the participants in terms of their ambition toward careers in sports leadership. Firstly, those female sports students have an interest in becoming sports leaders because they want to bring about change. Secondly, they aspire toward careers in sports leadership because they want to become role models when they become sports leaders in the future. Lastly, most of the participants do not have a mentor who was helping them develop into future sports leaders.

The study found that there is indeed no significant statistical difference in the perceptions and aspirations of undergraduate and postgraduate female sports students. This implies that both undergraduate and postgraduate female sports students in the tertiary institution hold similar perceptions towards leaders and, sports leaders within the context of South Africa. Furthermore, they also have similar aspirations toward careers in sports leadership. The study found that there is indeed no significant statistical difference in the perceptions of the participants studying different academic courses, regarding sports leadership. This means that the female sports students studying sports management, sports science and biokinetics, all hold similar views towards leaders and sports leaders within the context of South Africa. There is, however, a statistical difference that is observed in the aspirations of female sports students studying different academic courses, towards sports leadership. The study found that a significant statistical difference exists in the aspirations of the female students studying biokinetics, towards sports leadership when compared to the aspirations of those studying sports management and sports science. There is also no statistical difference exists amongst sports management and sports science female sports students' aspirations towards sports leadership.

8. Managerial implications

The study focused on the perceptions and aspirations of female sports students towards sports leadership, and therefore the study did not reflect on the perceptions of male sports students. However, the study did not examine the perceptions and aspirations of female students studying for other university academic qualifications or studying sports at other institutions in the country. The reported perpetual underrepresentation of female sports leaders was the catalyst for the study, and the decision to focus on sports students was motivated by the fact that universities are in the line of work of developing the next generation of sports leaders through their sports programmes (Wesse & Beard, 2012). It is worthy to note the study was conducted on female sports students who were all studying at the same South African tertiary institution, and therefore the results may potentially be different should a similar research study be conducted on female sports students studying in another tertiary institution in South Africa. The results of this study are therefore limited to the institution studied and may not be generalised to other universities without taking their environment into context. The data is representative of current female sports students and therefore the findings of the study may not be generalised to females who are already sporting professionals in the sports industry, as they may hold different perceptions and aspirations towards sports leadership, given their exposure to the practicalities and realities of the sports industry.

Lastly, the lack of previous studies in sports leadership, particularly within the South African context, also proves to be a limitation in terms of gaining richer insights into this research area. Further studies need to be conducted on more female sports students studying in different South African universities to establish a holistic picture of the perceptions and aspirations of female sports students towards

sports leadership. Future research should also be carried out on female sports students over a longer period to establish how their perceptions of sports leadership potentially evolve from their final year of study to a few years after entering the workforce. Furthermore, future research can test and establish whether this evolution in their perceptions has an impact on their intention to pursue sports leadership positions.

9. Conclusion and recommendations

Female sports students have an overall agreement with the statements, pertaining to the perceptions of sports leaders, in the context of South Africa. They believe that sports leadership positions in sport are dominated by males and that sports organisations are mostly led by males. They believe that they are few female sports leaders in South Africa and that females are side-lined from acquiring decision-making and leadership positions in sports. Despite these potentially discouraging beliefs held by female sports students, they still aspire to be leaders in the future. It's important that strategies on how to best absorb those who aspire towards a career in sports leadership are developed to address the overall underrepresentation of females in sports leadership positions. An example of a strategy of this nature includes more meaningful internship opportunities for female graduates in sports organisations, which have the potential to lead to permanent employment upon successful completion.

The study indicates that the two groups of female sports students at different levels of study, namely undergraduate students, and postgraduate students, do not hold significantly different perceptions in terms of leaders in general, and South African sports leaders. This demonstrates that both groups have similar understandings of what a leader is and hold similar impressions of sports leaders within the context of South Africa. The study further reveals that there are no significant differences in the aspirations of undergraduate and postgraduate female sports students, towards sports leadership. This implies that both undergraduate and postgraduate hold similar ambitions towards pursuing careers in sports leadership. Given these revelations, the recommendation is that there should be no differentiation in discussions pertaining to sports leadership, and the lecturing of sports leadership-related modules to undergraduate and postgraduate sports students. In addition to this, both undergraduate and postgraduate students should be groomed toward careers in sports leadership, given the similarities in their appetite and ambition for careers in sports leadership.

Literature cautions us of the fact that media content is produced and edited by a host of media practitioners (i.e. publication editors, journalists, bloggers, commentators, influencers) in order to achieve certain goals (Coakley & Burnett, 2014). These goals range from achieving financial profits to rallying support behind a specific team. Therefore in order to ensure fairness in media reporting and overcome bias in media coverage, leaders in media institutions (i.e. television and radio broadcasters, written publications, online platforms) should mandate their staff with strategies such as (1) unrelenting profiling of females in sport, (2) giving prominent media coverage to good performance in sport, regardless of gender, (3) having staff that will specifically and consistently focus on covering females in sport, (4) encouraging males to take an intentional interest in females in sport, or (5) creating platforms or initiatives aimed at giving females in sport a voice in terms of visibility.

The results of the study indicate that the participants do not believe that careers in sports leadership are only suitable for males and that females could also pursue leadership positions in sports. They also did not believe that it is natural for males to be sports leaders. These results relate to the perceived barriers that exist in the pursuit or acquirement of sports leadership positions. A solution on how to overcome the existing barriers that prevent female sports students from pursuing or acquiring leadership positions in sports remains in female advocacy and the application of its by-products thereof. Gender equality policies that challenge the status quo by mandating organisations to shift in their social values and structure, to be more inclusive of females, will be functional in creating opportunities for females who wish to enter the industry and acquire top sports leadership positions. On the other hand, universities, and lecturers alike, have the responsibility of structuring their academic programmes in such a way that it will provide the necessary skills and knowledge that will allow for university students to develop into future leaders who are educated and knowledgeable. They can do this by benchmarking the scope of their programmes against similar programmes and

qualifications that other higher learning institutions all over the world offer. They can further form relationships with sports organisations to gather information on skills shortages in the industry, and then fill these gaps by teaching sports students those skills. These new programmes will hopefully assist in making sports students more employable upon graduating from university.

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Transport Infrastructure, Environmental Degradation and Socioeconomic Development in 33 African countries

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Keywords

Transport infrastructure
Socioeconomic
development;
Environmental
degradation; Structural
Equation Modelling

Abstract

Empirical findings affirm the complex relationships between transport infrastructure, economic development, and environmental degradation. Most studies scrutinising the relationship among these variables have focused on economic growth instead of socioeconomic development. This paper analyses the relationships between transport infrastructure, socioeconomic development, and environmental degradation. The findings show that transport infrastructure stimulates socioeconomic development but leads to environmental degradation. Socioeconomic development increases environmental degradation and transport infrastructure. Environmental degradation adversely affects socioeconomic development. Further analyses reveal a significant indirect effect (55%) of transport infrastructure on environmental degradation through its contribution to socioeconomic development. A challenge for policymakers is that 45% of the total effect of transport infrastructure on environmental degradation is not associated with its contribution to socioeconomic development. Policy interventions to abate the effect of transport infrastructure on environmental degradation that has nothing to do with the socioeconomic benefits should be the priority.

1. Introduction

Transport infrastructure in Africa is lagging behind other regions in the world. The Export-Import Bank of India (2018) maintains that this problem is more pronounced in the rural areas, where the density of the road network is low, and the existing roads lack regular maintenance and upgrades. Policymakers consider transport infrastructure shortages as an obstacle to Africa's growth trajectory, as mobility and integration on the continent and to the rest of the world, is restricted. African governments face budget constraints that have grown the need for effective transport infrastructure policies to promote private investment (IDEP, 2015), which involves the critical role of the African Development Bank (AfDB). Transport infrastructure development remains the major priority underpinning the AfDB's assistance; the financial commitment of AfDB increased more than six-fold between 2000 and 2011 (IDEV, 2014).

The investment in transport infrastructure can help to address the non-stop demand for transport (TEST Network, 2012). Practitioners and policymakers are increasingly concerned with the balance required to increase the transport infrastructure to improve socioeconomic development, whilst minimising environmental degradation. Transportation is among the major sources of pollution, which threatens sustainable development. Many studies focus on the paradoxical nature of the relationship of transport, environmental degradation (often presented by growth in CO₂ emissions), energy consumption and economic growth. Early theories, such as Rostow's (1956), realised the necessity of social overhead capital, like railway- and road infrastructures in economic development. While empirical studies (Hlotywa & Ndaguba, 2017; Cigu, Agheorghiesei, Toader, 2018) support transport's positive contribution to economic growth, other studies, such as those by Vlahinić, Skender and Mirković (2018) and Njoh (2012), found evidence against hypothesis (particularly concerning the railways). In terms of the strength of roads to stimulate growth, Bryceson, Bradbury and Bradbury

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(2008:459) stated that "... there is no consensus on precisely how roads become critical to economic development and if they actually warrant the faith vested in them."

The major problem is whether or not the transport infrastructure can boost socioeconomic development. Yet governments are not only challenged by whether or not transport infrastructure development yields significant socioeconomic returns but also the effect on the environment, including CO₂ emissions, soil erosion and climate change. Empirical studies have generally supported the significant contribution of transport to CO₂ emissions (Saidi & Hammami, 2017; Steenhof, Woudsma & Sparling, 2006). The deterioration in environmental quality, largely from greenhouse gases, has raised concern regarding global warming. Besides transport, the literature shows that environmental degradation or rising CO₂ emissions is mainly caused by economic activity. Several studies have investigated the Environmental Kuznets Curve (EKC) hypothesis. This hypothesis claims that the association between economic growth and environmental degradation is an inverted-U-shaped. The validity of the EKC hypothesis remained questionable in the literature, with empirical evidence supporting (Borhan, Ahmed & Hitam, 2012.; Charfeddine & Mrabet, 2017) or opposing (Adu & Denkyirah, 2017; Beşe & Kalayci, 2019; Inglesi-Lotz & Bohlmann, 2014) the hypothesis. With regards to the direction of causality, Saidi and Hammami (2017) found evidence of bidirectional causality between CO₂ emissions and economic growth in high-income states, but a unilateral causation from economic growth to environmental degradation in the low- and medium- income group.

Despite the vast literature on transportation, CO₂ emissions and economic growth, there exist outstanding issues that need to be addressed. Studies are lacking that have scrutinised the associations among transportation, CO₂ emissions and socioeconomic development. Issaoui, Toumi and Touili (2015) highlighted that studies on the effect of CO₂ emissions on welfare are limited, as are the social aspects (e.g., poverty, inequality, and life expectancy) in the connections among transport, CO₂ emissions and a country's development.

Given the hypothesised significant effects of transport on both environmental degradation and economic development, we are not aware of studies that have applied structural equation modelling (SEM) to distinguish the direct and indirect effects of transport infrastructure development on environmental degradation, with socioeconomic development treated as a mediator. Thus, another knowledge gap exists in how transport infrastructure may influence CO₂ emissions through its contribution to socioeconomic development. Consequently, to handle these deficiencies, the aim of this article is to investigate the relationships between transport infrastructure, socioeconomic development, and environmental degradation. The socioeconomic development measure accounts for economic growth (i.e., change in income per capita) and poverty levels in 33 African countries. Therefore, in terms of contribution, the first novelty of this study is the construction of a socioeconomic development measure that simultaneously accounts for economic growth and poverty levels in the sampled countries. Besides the commonly estimated transport, environmental degradation, and economic growth nexus, we substitute socioeconomic development for economic growth. We also built a transport infrastructure measure that captures the quantities of roads and airports. Another novelty of this research is the mediation analysis using SEM to distinguish the indirect effect of the transport infrastructure on CO₂ emissions (via socioeconomic development) from the direct effect. Figure 1 depicts the proposed model and the hypotheses of interest.

This study is the first of its kind to provide a comprehensive analysis of how transport infrastructure, socioeconomic development and environmental degradation are connected based on the GMM and SEM. It concludes with a proposed intervention model that does not only show the positions of action but also the ones that need greater attention.

This study is organised as follows: section one introduces the research, section two argues the problem to be investigated, section three presents the research objectives while section four shows the hypotheses, section five reviews the literature, section six discusses the research methods, section

seven presents and discusses the findings, section eight provides the key implications and recommendations derived from the findings, and section nine concludes the research.

2. Problem Investigated

The complex nature of the relationship between transport infrastructure development, socioeconomic development and CO₂ emissions is the problem to be investigated in this research. As detailed in the introduction, there are limited studies on the topic that focused on socioeconomic development, but rather economic development. Moreover, even those that applied economic development, there are mixed findings whether it is significantly influenced by infrastructure development. On the downside, transport has been among the notable sectors responsible for CO₂ emissions. Empirically, the extent to which transport infrastructure development can lead to increased CO₂ emissions but through its contribution to socioeconomic development (indirect effect) has not been properly interrogated. Subsequently, this study aims to narrow these research gaps by using the SEM technique to untangle the complex nexus between transport infrastructure development, socioeconomic development, and CO₂ emissions in Africa.

3. Research Objectives

This section presents the main objectives of this study. Firstly, this study investigates the effect of transport infrastructure development on socioeconomic development. Secondly, the effect of socioeconomic development on CO₂ emissions is investigated. Thirdly, this research ascertains the effect of transport infrastructure development on CO₂ emissions. Lastly, this study examines the indirect effect of transport infrastructure development on CO₂ emissions through its contribution to socioeconomic development.

4. Hypotheses

It seems there is a desirable direct path from Transport infrastructure (TRANS) to socioeconomic development (SEDev) that must be promoted, but it is accompanied by an undesirable direct path from TRANS to CO₂ emissions (CO₂) plus another hidden undesirable indirect path of the effect of TRANS on CO₂ via SEDev. Figure 1 shows the hypothesised model.

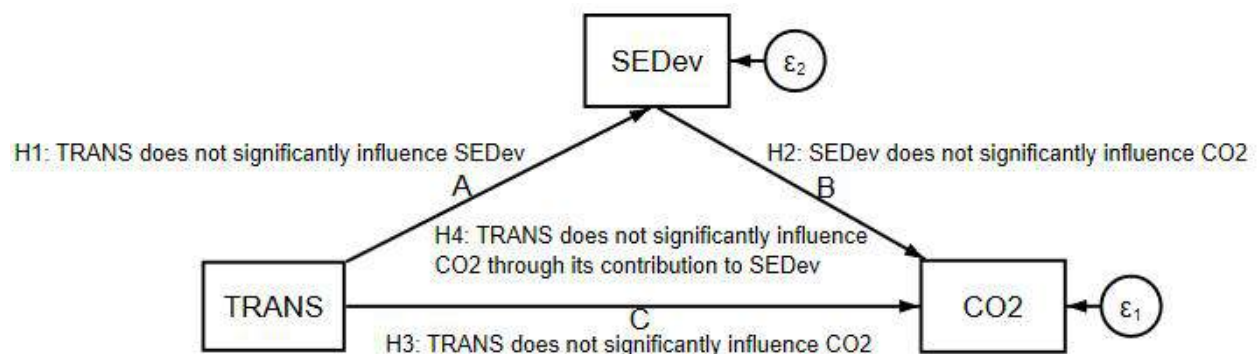


Figure 1. The estimated proposed model
Source: Own compilation

Given this argument, the following null hypotheses were formulated for the study:

- H₁: TRANS does not significantly influence SEDev
- H₂: SEDev does not significantly influence CO₂
- H₃: TRANS does not significantly influence CO₂
- H₄: TRANS does not significantly influence CO₂ through its contribution to SEDev (indirect effect)

5. Literature Review

This section contextualises transport infrastructure, socioeconomic development, and environmental degradation in Africa. This is followed by a review of past studies on the topic.

5.1. Context of Transport Infrastructure in Africa

5.1.1 Transport infrastructure

The Export-Import Bank of India's (2018) report indicated that roads dominate the transport sector in many African states, inclusive of 80-90% of freight and passenger traffic. Approximately US\$200 billion of trade on the continent is transported using the region's trunk road network, encompassing strategic trading corridors, which connect deep seaports to economic hinterlands. Azolibe and Okonkwo (2020) showed that SSA's network of roads encompasses strategic trading corridors that do not surpass 10000 km and carry approximately US\$200 billion worth of trade every year.

While road infrastructure plays a fundamental role, road density remained low in Africa. According to Azolibe and Okonkwo (2020), road density in SSA and the Middle East & North Africa (MENA) was 0.002 km/sq km and 0.006 km/sq km in 2014, respectively. In the same year, the road density was slightly higher in other less developed areas, for example, East Asia and the Pacific (0.007), Latin America & the Caribbean (0.007) and South Asia (0.016). SSA is the only region where road density has fallen over the past 20 years (World Bank, 2017). According to the AfDB (2018), road freight tariffs in Africa are more than double the tariffs in the United States, and the time to travel along major export corridors is 2-3 times higher than those in Asia. Another key issue raised is that many roads in Africa are unpaved, isolating people from economic opportunities, transport corridors, trade hubs, health, and basic education centres. Moreover, the safety of roads is another problem, resulting in high fatalities rates.

Besides the poor road network, many ports in SSA face problems such as low capacity, inefficiency and poorly equipped (Azolibe and Okonkwo, 2020; Foster and Brice~no-Garmendia, 2009). Africa has a total rail network of 82 000km, of which 84% are operational, while the rest are not functional for various reasons, including natural disasters, war, lack of funds and general neglect (Export-Import Bank of India, 2018).

As for the performance of air transport, Africa is behind many other regions. The Export-Import Bank of India (2018) showed that despite Africa having more than 4 000 airports and airfields, the majority are not up to standard and do not meet the International Civil Aviation Organization's recommended practices. Furthermore, the African aviation sector faces many other challenges, including unpaved runways (only a quarter are paved), a lack of human and physical resources, a lack of transit facilities, and limited connectivity. Moreover, the share of Africa in the global aviation industry is smaller than that of other regions, contributing about US\$72.5 billion to Africa and supporting 6.8 million jobs in the continent (Export-Import Bank of India, 2018).

The poor transportation networks in Africa impede the ability of manufacturers to capitalise on regional economies of scale (Azolibe and Okonkwo, 2020), and lead to 30-40% extra costs for commodity trading among African states (OECD, 2019). The shortage and poor state of transport infrastructure in many African countries are among the obstacles to socioeconomic development.

5.1.2 Socioeconomic development

AfDB (2020) indicated that the economic outlook of Africa improves continuously, with the continent's real GDP growth projected at 3.4% in 2019, anticipated to rise to 3.9% in 2020 and 4.1% in 2021. Ghana, Rwanda, Tanzania, Ethiopia, Benin, and Côte d'Ivoire were mentioned among the world's 10 fastest growers. Irrespective of the promising growth prospects, it is not clear how the COVID-19 pandemic may have adversely affected Africa's future economic performance.

For instance, the World Bank (2020) report shows that despite SSA countries controlling the spread of coronavirus, the pandemic is persistently taking lives and adversely affecting economic undertakings, which is expected to drop significantly in 2020. It is argued in this report that this significant slump in economic undertakings will lead to more than US\$115 billion of output losses in 2020 due to poor investment and domestic consumption that follow the COVID-19 control measures. The World Bank expected African countries to revitalise in 2021, but the countries will experience varying growth rates, with poor recovery expected in the case of South Africa. The total growth in southern and

eastern Africa is predicted to average 2.7%, and about 1.4% in the central and western African regions (World Bank, 2020).

Despite the impressive growth rate in Africa, it has not been adequate to address the unemployment and poverty challenges (Pityana, 2019). In the case of SSA, one out of four people is undernourished (Adzawla, Sawaneh & Yusuf, 2019; FAO, 2015). In this regard, the AfDB (2020) stipulates that only a third of African economies achieved inclusive growth, whereby economic growth was associated with a reduction in poverty and inequality. According to the World Bank (2020), the challenge of the COVID-19 pandemic could thrust about 40 million African people into extreme poverty. Consequently, addressing social issues such as poverty and inequality in Africa worries policymakers. This is why this study is concerned about socioeconomic development rather than economic growth per se.

5.1.3 Environmental degradation

Section 2.1 and 2.2 reveal that Africa has a major gap to close in terms of transport infrastructure development and socioeconomic development. With increasing concern for the environment, boosting transportation and stimulating socioeconomic development, is insufficient, but doing so in a sustainable way (including lowering CO₂ emissions (CO₂) and greenhouse gases) should be the priority. Statistics show that Africa is not a major contributor to CO₂ emissions from industry and energy sources (responsible for only 2% to 3% of world emission; but the continent is a significant source of greenhouse gas emissions (United Nations, 2006). Although Africa is the lowest producer of CO₂ emissions, it is threatened by climate change, with an increased risk of droughts, floods and waterborne diseases. Adzawla et al. (2019) argue that CO₂ emissions are the major source of climate change.

Hogarth, Haywood and Whitley (2015) made crucial observations in the case of SSA, including that (i) transportation emissions are produced largely by motor vehicles powered by oil-fuelled internal combustion engines, (ii) Extending road networks often open access to forested areas for exploitation, resulting in GHG emissions from forest degradation and deforestation. (iii) Except for South Africa, countries in SSA have no vehicle manufacturing industry, and most vehicles are imported into the continent, usually second-hand. The design, age and condition of these vehicles influence the quantity of fuel consumption and gas emissions produced (fuel efficiency is poor). Despite these factors, Africa's global share of greenhouse emissions will remain lower than other continents. However, emissions are problematic for sustainable development.

Information concerning the relationship between economic development and greenhouse gas emissions is limited in SSA (Adzawla et al., 2019). This paper argues that an even more critical problem is the lack of knowledge about the association between socioeconomic development and CO₂ emissions in Africa.

5.2. Review of past studies on the topic

There are two interesting views about the CO₂ emissions versus economic development nexus as shown in Issaoui et al. (2015). An economic view suggest that CO₂ emissions are a by-product of strong economic development and value-added processes. An environmental view suggests that sustainable development could not be built in polluting industries since it is achieved at the cost of social welfare. Therefore, it is crucial to consider the adverse effects of emissions on health, the environment and climate, among other aspects. Transportation is among the major contributors to CO₂ emissions, despite its role in facilitating economic activity. At least three distinct areas of literature exist concerning transport, economic growth, and environmental degradation/CO₂ emissions. Many studies consider economic growth instead of socioeconomic development.

The first aspect focused primarily on the effect of transport on economic development and/or vice versa. Early theories, such as Rostow's (1956) theory of economic growth, emphasised the importance of social overhead capital, such as roads and railways to economic development. Canning and Fay (1993) showed that transport infrastructure has moderate rates of returns in less-developed countries,

normal rates in developed countries and extraordinarily large returns in industrialised countries. This is among the earlier studies that showed varied returns of the transportation sector across various groups of economies. Bryceson et al.'s (2008) results indicated that the improvement of roads in the Ethiopian remote areas could speed-up the expansion of social-service provision although, those roads were inadequate to improve mobility in rural areas because the poor do not have motor vehicles.

Cigu et al. (2018) scrutinised the effect of transport infrastructure on economic performance in 28 European Union countries. They found transport infrastructure to have a significant impact on economic growth. Vlahinić et al. (2018) analysed the association between the transport (road and rail) infrastructure and growth in the Central and Eastern European countries. Their findings suggested that rail infrastructure investment can negatively affect economic growth, while roads showed positive effects.

In Sub Saharan Africa, Njoh (2000) analysed the association between the transport infrastructure (road density per capita) and economic growth. They found these two variables to have a positive relationship, which was more robust for roads in good condition. Moreover, in the case of East Africa and the Indian Ocean, Njoh (2012) observed a positive association between transportation (represented by different forms of transport infrastructure) and development. However, the research also found that railway infrastructure negatively impacted development, owing to neglect and insufficient utilisation.

Boopen (2006) examined the economic role of transport in Sub Saharan Africa and in small island developing states (SIDS). Their results indicated that transport contributed significantly to economic growth. Compared to the overall capital stock, the productivity of capital for SSA economies was stronger, while for the SIDS, it was the same as the average productivity level. Studying the connection between investment in road transport and economic development in South Africa, the findings of Hlotywa and Ndaguba (2017) revealed a positive association between these two indicators.

The second group of literature has focused on the connection between economic development and CO₂ emissions. Grossman and Krueger (1991) provided an important association between economic growth and environmental quality. They found that the pollutant concentration increased with the income at low levels of national income but declined with the income at higher levels. This was described statistically as evidence of an EKC relationship (Borhan et al., 2012). Similarly, the EKC hypothesis was supported by Charfeddine and Mrabet (2017) in the Middle East and North African (MENA) oil-exporting nations. Borhan et al.'s (2012) results also showed evidence of the EKC relationship in East Asian 8. On the contrary, the EKC hypothesis was not supported in other studies. Beşe and Kalayci (2019) did not confirm the EKC hypothesis in Kenya, Turkey, and Egypt. They concluded that these three countries can realise increased economic growth without pressure on the environment since causation does not exist between GDP and CO₂. Inglesi-Lotz and Bohlmann (2014) and Adu and Denkyirah (2017) are among the studies whose results did not support the EKC hypothesis in South Africa and West Africa, respectively.

Furthermore, Beyene and Kotosz (2020) found that the economic undertakings in East African states did not result in environmental degradation. Magazzino (2016) examined the association between economic growth, energy use and CO₂ emissions in ten Middle East economies. In six Gulf Cooperation Council (GCC) economies, their VAR estimate indicated a negative response of economic growth to CO₂ emissions. However, in four non-GCC states, both energy-use and CO₂ emissions did not influence economic growth. Kais and Sami (2016) demonstrated that GDP per capita significantly impact CO₂ emissions in North Africa, sub-Saharan Africa, Europe, Middle East and North Asia. The same result holds when the global panel was used. Farhani, Chaibi and Rault (2014) analysed the association among GDP, CO₂ emissions, trade, and energy consumption in Tunisia, using the ARDL approach. Their findings suggested long run bidirectional relationships between the indicators and a unidirectional causality from both energy consumption and GDP to CO₂ emissions in the short run. In the case of Tunisia, short run and long run unidirectional causal relationships from income to environment were demonstrated by Fodha and Zaghoud (2010).

Omri and Sassi-Tmar (2014) investigated three regional panels i.e. (i) Middle East, North Africa (MENA) and Sub-Saharan Africa (SSA), (ii) Central Asia and Europe, and (iii) Latin America and the Caribbean. The authors' findings showed a one-way causality from environmental degradation to economic growth, except for the MENA-SSA panel that revealed a two-way causality. Menyah and Wolde-Rufael (2010) establishes a one-way causal from emissions to economic growth in South Africa.

The problem of limited literature on the effect of CO₂ emissions on well-being was mentioned by Issaoui et al. (2015). They examined the link between CO₂ emissions and some social and economic indicators in the MENA countries. Their findings proved that for all the countries in the sample, energy consumption and economic growth determined the carbon emissions in the short-term. Per capita income revealed a negative impact on CO₂ emissions. Similarly, Aye and Edoja's (2017) findings suggested a negative effect of economic growth on emissions in the low growth regime, yet it was positive in the high growth regime. Jorgenson and Givens' (2015) results suggested that the impact of economic development on the carbon intensity of well-being (CIWB) increases with time, whereby CIWB describes the trade-offs between the well-being of humans and pressure exerted on the environment due to fossil fuel usage.

The other group of literature examined the association between transport, CO₂ emissions, energy use and economic growth. Saidi and Hammami (2017) analysed the associations between economic growth, freight transport and environmental degradation in seventy nations; they found evidence of feedback effects between transport and income. A two-way causal relationship was revealed between economic growth and environmental degradation in the high-income group, while one-way causation was observed from transport to environmental deterioration. For low-income and middle-income groups, environmental degradation was found to be largely influenced by freight transport and economic growth, but the effects were weak in the opposite direction and not significant.

In the MENA countries, Saidi, Shahbaz and Akhtar (2018) studied how transport infrastructure and energy consumption are related to economic growth. It was found that growth was influenced by transport energy consumption. Feedback effects were also revealed from transport infrastructure and transport energy consumption to a country's growth. Abdallah, Belloumi and Wolf (2013) scrutinised the relationship between road infrastructure, transport value-added, fuel price, road transport-related energy consumption and CO₂ emissions in Tunisia. The findings suggested that transport value-added, road transport-related energy consumption, transport CO₂ emissions and road infrastructure are related in the long-run.

Based on the OECD countries, Saboori, Sapri and Baba's (2014) findings indicated that there were significant positive long-run bi-directional causal relations found for CO₂ emissions versus road sector energy consumption, CO₂ emissions versus economic growth as well as road sector energy consumption versus economic growth. Ssali, Du, Mensah and Hongo (2019) examined the association between economic growth, energy use, environmental degradation, and foreign direct investment in SSA countries. They found that 1% of economic growth could lead to a 16% rise in CO₂ emissions, and the squared economic growth indicator diminishes CO₂ by 46%, which confirms the EKC theory.

Overall, despite many attempts with different techniques and the use of new datasets to understand the connection between transport, environmental degradation and economic growth, the nature of the relationship remains inconclusive. The relationship can be positive, negative or insignificant. This ongoing debate still calls for critical investigations. This paper has two major contributions to the body of literature: (i) it considers a socioeconomic development indicator instead of the commonly researched per capita GDP (or economic growth) indicator, and (ii) it considers a mediation analysis using the SEM approach.

6. Research Methodology

6.1. Data information

This research used the annual data of 33 African countries from 2000 to 2007³. The data included: per capita GDP (at constant 2010 USD); Human Poverty Index (HPI); roads (km); airports (number); CO₂ emissions, measured in metric tons per capita; capital stock (millions of U.S. Dollars) which based on purchasing power parities of the countries; domestic credit to the private sector, measured as a percentage of GDP; trade, measured as a percentage of GDP; population (total). The World Development Indicators' (WDI) 2019 database is the source of per capita GDP, trade, CO₂ emissions, population and domestic credit to the private sector. HPI data was obtained from the African Development Bank, while roads and airports variables were from the CIA factbook database. Capital stock was obtained from the FRED database.

The principal component analysis (PCA) was used to create a transport infrastructure (TRANS) indicator that accounts for road and airport infrastructures. A change in per capita GDP (GDP_k) (or economic growth) and HPI were used to construct a socioeconomic development (SEDev) indicator using PCA.

Therefore, PCA was used to construct both the socioeconomic development and transport infrastructure indicators. This approach is often used to reduce data whereby only critical information is reserved (Karamizadeh et al., 2013; Chakamera and Alagidede, 2016). This study retains only the first principal component (PC1) for transport infrastructure, while the first and second principal components were retained for SEDev. As for how many components should be retained, the criterion was to consider only components with eigenvalues more than the average of the eigenvalues (or greater than unit). However, for the SEDev principal component analysis, the second component (PC2) with an eigenvalue of 0.9553 was also retained. The reason for this was because the first principal component explained only 52% of the variation in data, leaving 48% unexplained. It was plausible to raise the proportion of the data explained by the new variables by considering both PC1 and PC2. Table A1 in the Appendix presents the PCA results for the selected components. The TRANS variable accounts for 87% of the dataset composed of the air and road infrastructures. To have a single measure of SEDev, for this study the average of PC1 and PC2 was taken; hence, creating a single index that represents socioeconomic development.

6.2. Models

Following other studies, such as that of Saidi and Hammami (2017), the major aim of this one was to examine the causal connections between transport, socioeconomic development and environmental degradation. Transport combines the features of road and airport infrastructure development; socioeconomic development combines economic growth and poverty; CO₂ emissions is the proxy for environmental degradation. This research initially investigated the effects of socioeconomic development and CO₂ emissions on transport infrastructure by estimating the following model:

$$\ln TRANS_{i,t} = \delta_0 + \ln TRANS_{i,t-1} + \delta_1 \ln SEDev_{i,t} + \alpha_2 \ln CO2_{i,t} + \alpha \ln \Gamma_{i,t} + \pi_i + \rho_t + \varepsilon_{i,t} \quad (1)$$

where $CO2_{i,t}$ denotes CO₂ emissions, $TRANS_{i,t}$ represents transport infrastructure that accounts for air and road infrastructures, $SEDev_{i,t}$ is socio-economic development, $\Gamma_{i,t}$ is a set of control indicators (capital stock, financial depth, trade openness, population), π_i controls for the specific effects of the countries, ρ_t controls for periodic (or time)-specific effects, and $\varepsilon_{i,t}$ is the disturbance term. We further estimate Equation (2) to ascertain the effects of transport and CO₂ emissions on socio-economic development.

³ Benin, Burkina Faso, Botswana, Burundi, Democratic Republic of Congo, Cameroon, Central Africa Republic, Comoros, Gabon, Congo Republic, Madagascar, Cote d'Ivoire, Mauritius, Chad, Egypt, Eswatini, Ghana, Kenya, Malawi, Niger, Mali, Mauritania, Mozambique, Namibia, Togo, South Africa, Nigeria, Rwanda, Zimbabwe, Tunisia, Senegal, Tanzania and Uganda.

$$\ln SEDev_{i,t} = \delta_0 + \ln SEDev_{i,t-1} + \delta_1 \ln TR_{i,t} + \alpha_2 \ln CO2_{i,t} + \acute{\alpha} \ln \Psi_{i,t} + \pi_i + \rho_t + \varepsilon_{i,t} \quad (2)$$

where $\Psi_{i,t}$ is a set of control indicators (capital stock, financial depth, trade openness), and the other indicators are defined in Equation (1). To capture the effects of transport and socioeconomic development on CO₂ emissions, the following model was estimated:

$$\ln CO2_{i,t} = \alpha_0 + \ln CO2_{i,t-1} + \alpha_1 \ln TR_{i,t} + \alpha_2 \ln SEDev_{i,t} + \acute{\alpha} \ln Z_{i,t} + \pi_i + \rho_t + \varepsilon_{i,t} \quad (3)$$

where $Z_{i,t}$ is a set of control indicators (capital stock, trade openness, population), and Equation (1) describes the rest of the variables. The above models (Equations 1-3) are estimated using the Generalised Method of Moments approach.

Our fourth model, which is represented in Figure 1, investigated how much transport infrastructure development can influence CO₂ emissions through socioeconomic development. This model comprised moderation analysis to determine how transport infrastructure leads to CO₂ emissions directly and indirect via socioeconomic development. Socioeconomic development was assumed to be the mediator. A Structural Equation Model with no latent variables, two endogenous (economic growth and CO₂ emissions) and one exogenous variable (transport) was subsequently computed.

6.3. Estimation approaches

6.3.1 Generalised Method of Moments (GMM)

This research first applied the GMM technique for dynamic panel data models to estimate equations 1 to 3. This method by Arellano and Bond (1991) and Arellano and Bover (1995) has several advantages. GMM uses the instruments of the variables to address the problem of endogeneity which is probable between the covariates and the error terms. Periodic-specific effects are controlled for by including time dummies in the equations. It also addresses the specific effects of the countries by taking the differences in the indicators. The dynamic model to be estimated was of the form:

$$\ln Y_{i,t} = \theta \ln Y_{i,t-1} + \acute{\beta} \ln X_{i,t} + \acute{\gamma} \ln Z_{i,t} + \pi_i + \rho_t + \varepsilon_{i,t} \quad (4)$$

where $Y_{i,t}$ denotes the explained variable, $X_{i,t}$ is a set of covariates, $Z_{i,t}$ is a set of control indicators, π_i , ρ_t and $\varepsilon_{i,t}$ are described in Equation (1). The GMM technique was most appropriate in this study to address the potential reverse causality of the variables. Following Roodman (2009), to estimate our equations, we apply the two-step system-GMM, which is more robust in the presence of serial correlation and heteroscedasticity. System-GMM also uses a greater number of moment conditions and lowers sample bias. It is appropriate when the explained variable is persistent, and the period covered by the data is short.

6.3.2 Structural equation modelling (SEM)

Model four was represented in Figure 1 with socioeconomic development taken as a mediator by which transport can influence CO₂ emissions. The model was estimated using SEM in Stata. SEM is a powerful technique for analysing complex relationships among exogenous and endogenous variables (Zhao et al., 2019). In this study, it was an appropriate approach to ascertain the indirect effect and the direct effect of transport on CO₂ emissions. It allowed for simultaneous processing and analysis of the underlying associations between the variables in the model.

For the adequacy of the structural equation model, this study employed the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA) and the standardised root mean squared residual (SRMR).

7. Results and Findings

This section presents and discusses the findings of this study.

7.1. Descriptive statistics

The descriptive statistics of the variables are shown in Table 1.

Table 1: Descriptive statistics

Variable	Obs	Unit	Average	Std. Deviation.	Minimum	Maximum
HPI	264	Index	45.929	13.311	11.305	77.945
GDP _k	264	US dollars	1869.866	2236.979	221.096	10160.340
SEDev	231	Index	0.000	0.709	-2.313	1.409
TRANS	263	Index	0.000	1.324	-1.001	6.751
CO ₂	264	Metric tons/capita	0.885	1.643	0.017	9.519
CAP	264	Millions of 2011 U.S. Dollars	113271.700	204581.300	5790.397	1281388.000
FDEP	256	% of GDP	21.073	26.841	0.491	160.125
TO	264	% of GDP	67.300	30.772	20.964	170.407
POP	264	Total	19300000	26100000	542357	146000000

SEDev was created using the logs of HPI and GDP_k. TRANS was created using the logs of airport and road infrastructures.

Source: Own compilation

The mean for human poverty index (HPI) suggests that on average, 46% of the population in the African countries under investigation, were living in abject poverty. The country with a relatively low poverty level, had 11% (Mauritius) of its population being poor during the investigated period. The mean annual GDP per capita (GDP_k) was US\$1869.87 (equivalently US\$155.82 per month) while that of CO₂ emissions (CO₂) was 0.88 metric tons per capita. The annual average financial depth (FDEP) was 21%, with the maximum being 160% that was reported by South Africa in 2007. The investigated countries had an annual average capital stock (CAP) worth US\$113,27 billion; trade openness (TO) was 67% of GDP and total population (POP) was 19.3 million. Note that TRANS and SEDev are measures of transport infrastructure and socioeconomic development constructed in this study using principal component analysis.

7.2. Correlation analysis

As a preliminary analysis, Table 2 presents the correlation coefficients of the variables. A correlation coefficient estimates the degree of linear association between each pair of variables. Except for population, the correlation coefficients suggest a positive linear association between socioeconomic development and transport, CO₂ emissions, capital stock, financial depth and trade openness. Transport infrastructure development is positively associated with CO₂ emissions and financial depth, but negatively related to population. While our expectation was that as the population increases, the governments may also raise the number of transport infrastructure (roads and airports), the negative coefficient may imply that as the population increases, resources may be shifted from transport infrastructure development to other social needs, such as social nets.

Table 2: Correlation matrix

	SEDev	TRAN	CO ₂	CAP	FDEP	TO	POP
SEDev	1.000						
TRAN	0.436***	1.000					
CO ₂	0.333***	0.232***	1.000				
CAP	0.428***	-0.079	0.512***	1.000			
FDEP	0.363***	0.313***	0.622***	0.363***	1.000		
TO	0.231***	0.072	0.208***	0.025	0.241***	1.000	
POP	-0.033	-0.369***	0.005	0.636***	-0.033	-0.400***	1.000

*** p < 0.01. All variables in logs.

Source: Own compilation

It is shown that CO₂ emissions is positively correlated with capital stock, financial depth and trade openness. Despite an idea of the relationships among variables that are suggested by the correlation coefficients, the limitation is that the correlation analysis assumes a linear association. Some variables may have a non-linear association and a result this paper used the GMM technique for a detailed analysis.

7.3. Unit root tests

The ADF stationarity test method was used to determine the stationarity properties of the variables. Table 3 displays the unit root findings based on the ADF P statistic (Inverse chi-squared) and Pm statistic (Modified inv. chi-squared). Note that with the P statistic, finite number of panels are required, while the Pm statistic is appropriate for both infinite and finite number of panels. Both statistics indicate that while SEDev and TRANS become stationary in the first differences, the rest of the variables are stationary in level.

Table 3: Stationarity test outcomes

Variable	Undifferenced (Level)		1st Differences	
	P statistic	Pm statistic	P statistic	Pm statistic
SEDev	81.881	1.382	309.602***	21.203***
TRAN	66.343	0.030	152.796***	7.555***
CO ₂	758.264***	60.254***	1063.520***	86.823***
CAP	243.774***	15.473***	123.702***	5.022***
FDEP	207.745***	12.705***	256.386***	17.005***
TO	331.484***	23.107***	245.172***	15.595**
POP	1080.749***	88.323***	935.529***	75.683***

** p < 0.05, *** p < 0.01. Null Hypothesis: series is non-stationary (contains a unit root). All variables are in logs. A single lag was considered. A time trend was included.

Source: Own compilation

7.4. GMM estimates

This section begins by estimating the effects of socioeconomic development and CO₂ emissions on transport infrastructure. Model 1 in Table 4 shows the findings. The instruments are valid given that the Hansen statistics are not statistically significant at the 5% level. Arellano-Bond tests for AR(2) show that the models do not suffer from 2nd-order serial autocorrelation. Model 1 shows that transport infrastructure development is positively influenced by socioeconomic development, while the CO₂ emissions' effect is insignificant. In a related study, Saidi and Hammami (2017), who investigated 75 countries, including some African ones, did not find CO₂ emissions to have a significant effect on freight transport, while per capita GDP contributed to freight transport. As socioeconomic development (GDP per capita growth and poverty reduction) improves, many people can afford to use transport services, which promotes the demand for a transport infrastructure. As for control variables, an increase in population and financial depth resulted in transport infrastructure development.

Table 4: GMM estimates

	Model 1	Model 2	Model 3
Explained variables	TRANS	SEDev	CO ₂
DV(t-1)	0.9440***	0.8727***	1.0227***
SEDev	0.0692***		0.0197***
TRANS		0.0456***	0.0242***
CO ₂	0.0014	-0.0629***	
CAP	-0.0834***	0.0575***	-0.0622***
FDEP	0.0741***	0.0154	
TO	-0.0111	0.0445**	0.0413***
POP	0.0414***		0.0782***

Year Dummies	Yes	Yes	Yes
Obs	223	192	231
Groups/Instruments	33/32	33/26	33/32
AR2 test	1.7400	-0.0800	-0.9700
P-value	(0.0810)	0.9350	0.3300
Hansen chi2	24.3300	19.3300	19.3200
P-value	(0.3860)	0.3720	0.7350

** p < 0.05, *** p < 0.01. The logs of the variables were used in the estimations.

Source: Own compilation

A possible explanation is that financial depth may increase demand for transport services and hence transport infrastructure provision. However, the results suggest that as capital stock increases, transport infrastructure tends to decline. In this case, there might be a possible trade-off that occurs between investments in capital stock and transport infrastructure.

Models 2 was to determine the effects of transport infrastructure and CO₂ emissions on socioeconomic development. While there is plenty of work about on the influence of transport, on economic growth (measured by a change in GDP_k), this paper aimed to ascertain whether or not the transport infrastructure can influence socioeconomic development. Our results revealed a percentage rise in transport infrastructure increases socioeconomic development by 0.05%. Despite the positive effect, the magnitude of contribution is small compared to 0.212% effect of transport infrastructure on growth in MENA countries, which was estimated by Saidi et al. (2018). Overall gains of transport infrastructure to socioeconomic development may be hindered by the abject living conditions of many African people, who cannot afford transportation services. The existence of road and airport infrastructure per se is not a sufficient condition, but access to the facilities by the poor is a paramount factor, which several African states are struggling to address.

The CO₂ emissions suggested a negative effect on socioeconomic development. A percentage rise in CO₂ emissions reduces socioeconomic development by 0.06%. Among the explanations, rising CO₂ emissions cause a greenhouse effect, climate change, affect agricultural production, lead to health problems, exert pressure on health expenses and costs of addressing environmental degradation. These adverse effects of CO₂ emissions may hinder socioeconomic development.

In terms of control variables, improvement in the capital stock and trade openness contributes to socioeconomic development. An investment in capital stock often stimulates economic activity in a country, more people get employed and disposable income increases. However, to optimise the benefits of capital stock in Africa, it is imperative to ensure that the existing capital stocks are used productively. For example, there are economies, such as Zimbabwe, where there are industries and capital equipment that have not been productive (Nguwi, 2019). Trade openness increases access to foreign products, broadens markets, increases competition, which potentially reduce the prices of products. The poor are likely to gain from reduced prices, for example, many poor people in Africa have been benefiting from cheaper Chinese products. Although reservations are attached to the durability of the Chinese products and the pressure they have on domestic production, there are products many people are now affording from foreign markets. Most of the African population seem to benefit from trade openness, although we admit that the debate regarding the socioeconomic benefits of increased trade openness is outstanding.

The effect of financial depth on socioeconomic development is not significant. Financial development in many African countries has remained fragile. This problem was also indicated in Ibrahim and Alagidede's (2018) paper, which may also be connected to the lack of institutional qualities Singh, Kpodar and Ghura (2009). Financial access by the poor is largely restricted, as they do not have collateral to get credit and loans from financial institutions. Access to banking and financial services in remote areas is even harder.

Model 3 shows that transport infrastructure development significantly influence CO₂ emissions. In particular, CO₂ emissions may grow by 0.02% if the transport infrastructure increases by a percentage point. This finding is supported by Saidi and Hammami (2017), who investigated several countries, including some African countries and found that freight transport contributes to CO₂ emissions. As an explanation, as transport infrastructure increases, there will be a rise in the consumption of petrol and diesel fuel for road transport, as well as aviation gasoline and jet kerosene for air transport, which ultimately raises the level of CO₂ emissions. There have been significant emissions from the African transport sector. Nkem and Njeri (2016) stated that the disaggregation of the global greenhouse gas (GHG) emissions due to fuel combustion by sector, puts the transport sector at the top with 42%, more than for electricity and heat production (32%).

The second focus variable, SEDev is also contributes to rising CO₂ emissions. A 0.02% rise in CO₂ emissions is because of a percentage increase in socioeconomic development. Socioeconomic development is associated with industrialisation and increased energy consumption and other economic activities, which are part of the factors for increased emissions. Related studies such as Ameyaw and Yao (2018) who focused on West Africa, found a one-way causality from GDP to CO₂ emissions; implying that improved economic activity contributes to environmental degradation.

Controlling for population, this study is among those, for example, Aye and Edoja (2017) and Saidi and Hammami (2017) that reported the positive and significant effect of population on CO₂ emissions. Mostly in rural areas, an increased population in many African countries has been associated with deforestation and increased use of firewood, which cause environmental degradation.

The results also suggest that trade openness results in increased CO₂ emissions. Trade openness is expected to widen the market for domestic products, boost production, improve exports and imports, and increase demand for transportation, which may raise CO₂ emissions. There is also evidence that capital stock reduces CO₂ emissions. This might mean an increase in capital stock in the respective countries is accompanied by investments in green technologies (e.g., electric locomotives, renewable energy such as solar & wind) that reduce greenhouse gases.

7.5. SEM estimates

The GMM estimator indicates that both socioeconomic development and transport infrastructure development significantly increase CO₂ emissions. As the literature review shows, the development of transport infrastructure has been recognised among the strategies for achieving economic growth. Our GMM estimates indicate that transport infrastructure contributes to socioeconomic development. The challenge for policymakers is to achieve socioeconomic development through infrastructure development, without causing environmental degradation. Based on our hypothetical model (Figure 1), this study decomposed the effect of transport (TRANS) on CO₂ emissions (CO₂), with socioeconomic development (SEDev) playing a mediator role between TRANS and CO₂. This analysis aims to determine how much TR development in Africa influences CO₂ emissions through SEDev (indirect effect) and how much TR influences CO₂ directly (direct effect).

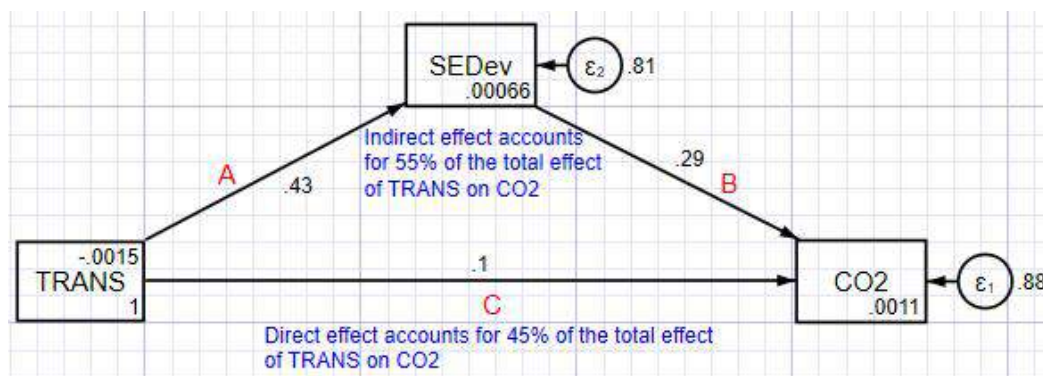


Figure 2. Estimated SEM: A mediation analysis
Source: Own compilation

In Figure 2, path A is the direct effect of TRANS on SEDev. A percentage increase in TRANS increases SEDev by 0.43%. Path B shows a percentage increase in SEDev increase CO₂ by 0.29%. Path C is the direct effect (0.10) of TRANS on CO₂. These findings confirm the GMM estimates in Table 4, although the SEM estimates are greater. We confirmed all the three hypotheses (H1, H2 and H3) that are specified in Figure 1. Table 5 displays detailed SEM results with the diagnostics checks for model fit. We checked the adequacy of the SEM model using RMSEA, CFI, TLI and SRMR. The statistics suggest that the model is accepted as the fitted values meet their standards. This section purposes to decompose the total effect of TRANS on CO₂ when SEDev is assumed to be a mediator. As Table 5 reveals, the direct effect (DE) of TRANS on CO₂ is 0.1023% (i.e. *path C*), the indirect effect (IE) of TRANS on CO₂ is 0.1257% (i.e. *path A x path B*), and the total effect (TE) is 0.2280% (i.e. DE + IE = TE). All the paths are statistically significant. The indirect effect result suggests that TRANS can significantly influence CO₂ through increased SEDev. Consequently, we illustrate in Figure 2 that the indirect effect accounts for 55% of the total effect of TRANS on CO₂, leaving the direct effect accounting for 45%. Although a larger portion of the total explanation of TRANS on CO₂ occurs indirectly, the 45% effect that is not related to SEDev, is also huge.

Table 5: Decomposition of transport effects on CO₂ emissions: SEM

	Direction	Coefficient	
<i>Direct effects</i>			
Path A	TRANS to SEDev	0.4348***	
Path B	SEDev to CO ₂	0.2890***	
Path C	TRANS to CO ₂	0.1023***	
<i>Indirect effect of TRANS on CO₂ through SEDev</i>			
Path A x Path B	TRANS to CO ₂	0.1257***	
<i>Total effect of TRANS on CO₂</i>			
Direct effect (path C) + Indirect effect	TRANS to CO ₂	0.2280***	
Model fitting index value			
	Fitted value (v)	Standard	Result
RMSEA	0.0000	< 0.05	Pass
CFI	1.0000	> 0.90	Pass
TLI	1.0000	> 0.90	Pass
SRMR	0.0000	< 0.05	Pass

*** p < 0.01.

Source: Own compilation

The GMM and the SEM estimates support Xie et al. (2017), among other authors, who indicated that transport infrastructure development spurs economic growth, it leads to increased CO₂ emissions. The next section provides the implications and recommendations of the key findings.

8. Managerial Implications

Our findings have many implications and recommendations. First, transport infrastructure development drives the level of CO₂ emissions in Africa. It implies that improving the transport network on the continent results in environmental degradation. While improving road and air networks, it is also crucial to promote the use of fuel-efficient vehicles, use of public transport, walking and biking (smart driving) in order to improve mobility and accessibility, while maintaining the socioeconomic contribution of transportation sector.

Furthermore, Africa's socioeconomic development is raising CO₂ emissions. This implies that most economic activities on the continent occur in polluting industries/sectors. Improving the efficiency of the polluting industries is crucial. Relevant legislation and laws to monitor and control the amount of CO₂ emissions from polluting industries and companies must be enforced. Possibly long-term strategies should aim to shift as much economic activity to the non-polluting industries/sectors. This should abate CO₂ emissions and promote sustainable socioeconomic development in Africa.

The results further imply that transport infrastructure can stimulate socioeconomic development in Africa. From a policy perspective, African governments can promote development on the continent through transport infrastructure development. The financial investment commitment towards the transportation sector from the AfDB is worth it, since transportation yields socioeconomic benefits. Green transport strategies must be implemented to promote the benefits of the transport sector on socioeconomic development.

Another key implication derived from the results is that the impact of transport on socioeconomic development is not small. This might suggest that given the low income per capita and severe poverty in Africa, most of the poor do not productively gain from increased numbers of roads and airports. The presence of airports and roads is not a sufficient condition to improve welfare, therefore, affordability and use of the existing transport infrastructure becomes an issue for policymakers.

In the reverse direction, CO₂ emissions harm socioeconomic development. The findings imply a two-way association between socioeconomic development and environmental degradation. This implied a causal connection delays economic development since the realised socioeconomic development raises CO₂, which in turn reduces socioeconomic development. Accordingly, policymakers need to worry about the adverse effect of CO₂ emissions on socioeconomic development. Among other considerations, it is important to push for green technologies (e.g. renewable sources of energy like solar and wind), environmental conservation strategies and carbon capping. Governments can place 'caps' on CO₂ emissions that can be generated in their respective countries, and firms are given carbon allowances that can either be traded or used by other firms.

A unilateral causal relationship from transport to environmental degradation implies that policymakers may implement environmental conservation measures without affecting the development of the transport sector. For example, carbon taxes can be implemented without affecting the transport sector.

Our SEM findings reveal that transport can significantly influence CO₂ emissions through socioeconomic development. On the policy front, it implies that transport's total effect on CO₂ emissions could be separated into indirect and direct effects. The direct effect shows emissions that have nothing to do with socioeconomic development. The splitting of the effect provides policymakers with detailed information on how the influence of transport on CO₂ emissions occurs, given they aim to achieve socioeconomic development but at the same time minimising CO₂ emissions.

The key implication, which is shown in Figure 2, is that 55% of the transport's effect on CO₂ occurs through increased socioeconomic development, and the remaining 45% is the direct effect. Policy-wise, this outcome is problematic since 45%, which is not related to increased socioeconomic development, is still large. Deduced from Figure 2, policymakers may aim to achieve three better outcomes: (i) while it can be difficult to eradicate the significant effect of TRANS on CO₂, policymakers may aim to attain full mediation, where the effect of TRANS on CO₂ primarily occurs through increased socioeconomic development (*i.e.*, *path A x path B*). This may require improving the productive use of transport infrastructure and its effect on socioeconomic development. In this case, at least a much larger proportion of CO₂ emissions from TRANS will be a by-product of the productivity use of transport infrastructures.

However, aiming for a full mediation where (*path A x path B*) is almost 100%, while *path C* is almost zero, is not the optimum solution if *path B* is significantly large, but a compromise that at least CO₂ from TRANS is linked to increased socioeconomic benefits. (ii) a better outcome is one where (*path A x path B*) is greater than *path C*, with *path A* statistically significant and higher than *B*, which is also statistically significant. For example, in Figure 2, we envision that the coefficient of *path B* (0.29) needs to be reduced, while that of *path A* is raised and *path C* reduced. (iii) probably the optimum outcome that is difficult to attain is one that renders *paths C and B* insignificant, while *path A* is strong and significant. In this case, the economy would have successfully boosted transport

infrastructure development and the contribution to socioeconomic development without significant harm to the environment.

To attain our envisioned improved outcomes, policymakers require an integrated intervention approach. We hypothesise and recommend an integrated intervention model be implemented, as represented in Figure 3, which allows for TRANS, SEDev and CO₂ related policies or interventions to be taken but cognisant of each other.

The three variables have a special relationship, which often conflicts policymakers, as they seek to increase TRANS and SEDev, while simultaneously minimising CO₂. The hypothesised integrated intervention model requires three sets of interventions, which are moderators. ModSet 1 should contain moderators required to stimulate the socioeconomic development contribution of the transportation sector. In this study, TRANS represents the quantities of roads and airports. We assume, by increasing TRANS it is an insufficient condition to effectively increase SEDev and hence, some interventions/moderators are required to boost the impact of TRANS on SEDev. Therefore, interventions (Ma1, Ma2, ...Ma_n) in ModSet1 may include (i) upgrading existing transport infrastructure (e.g. raise the ratio of paveways), and (iii) consider policies to increase affordability and productive use of transport.

ModSet2 has moderators to abate CO₂ emissions from SEDev, which include (i) carbon capping, (ii) promoting much more economic activity to non-polluting industries, (iii) improving the efficiency of polluting industries, and (iv) consider a carbon tax for all polluting firms. Moderations in ModSet3 aim to minimise the direct effect of TRANS on CO₂. Potential moderators or interventions may include (i) promoting fuel-efficient vehicles, (ii) a carbon tax for vehicles, and (iii) promoting smart driving (public transport, walking, biking).

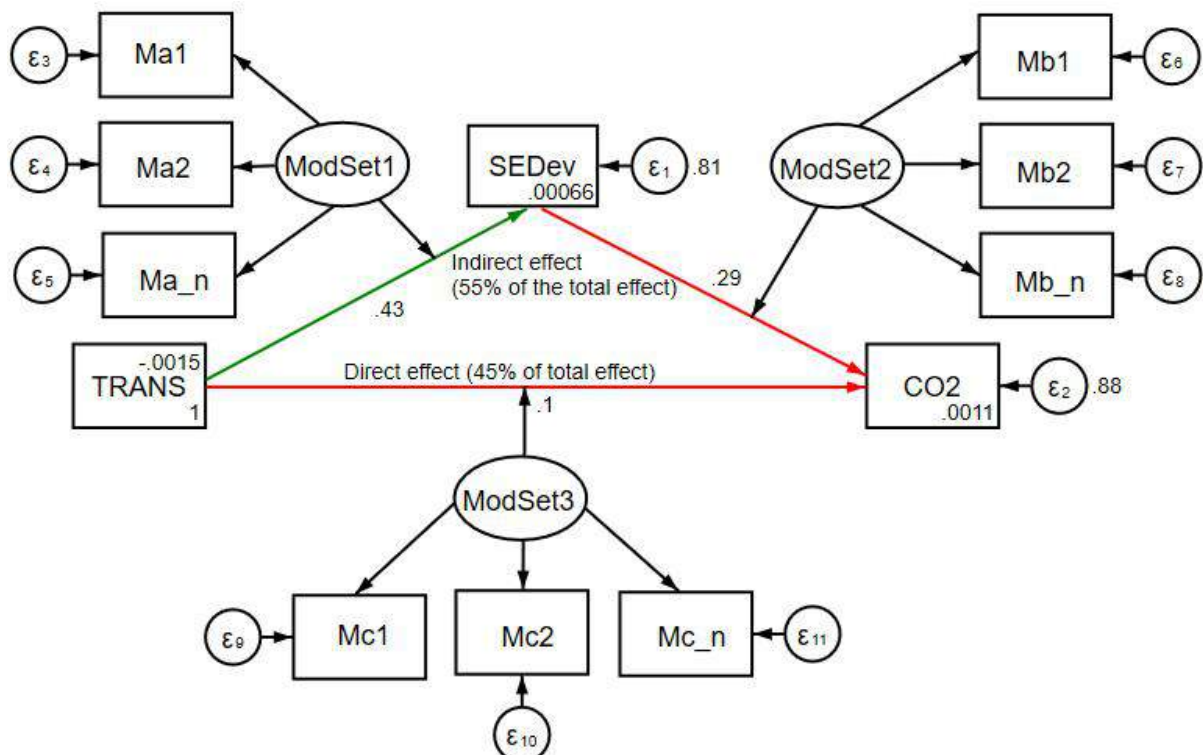


Figure 3. Proposed intervention model.
Source: Own compilation

While these measures/interventions are already in practice, the emphasis of the hypothesised model is that moderators must be integrated and work together to attain an optimum solution. Given 45% of the effect of TRANS on CO₂ has nothing to do with increased SEDev, policymakers may first place more

attention on measures that reduce the direct effect of TRANS on CO₂ and increase the indirect effect. *Path A* is desirable while B & C are not, thus, dealing with B & C should not compromise *path A*. Disintegrated methods may not be effective, since focusing on one path may adversely affect other paths.

9. Conclusion

This research examined the associations among transport infrastructure, socioeconomic development and environmental degradation in 33 African countries. Economic growth and poverty indicators were used to construct a socioeconomic development measure. The transport infrastructure measure accounts for airport and road infrastructures. Environmental degradation was represented by CO₂ emissions. It was found that transport infrastructure and socioeconomic development increase CO₂ emissions, and hence lead to environmental degradation. Transport infrastructure development stimulates socioeconomic development, while environmental degradation reduces socioeconomic development. However, the impact of transport infrastructure on socioeconomic development is small and may be due to poor affordability and the use of transport infrastructure by the poor. It was also shown in this study that socioeconomic development contributes to transport infrastructure development. The effect of environmental degradation on transport infrastructure is insignificant. Thus, the findings imply feedback effects between transport infrastructure and socioeconomic development; feedback effects between socioeconomic development and environmental degradation; and a one-way relationship between transport infrastructure and environmental degradation.

Structural equation modelling is used to distinguish the indirect and direct effects of transport infrastructure on environmental degradation, with socioeconomic development used as the mediator. The results confirmed a significant indirect effect, where 55% of transport's effect on CO₂ emissions occur through increased socioeconomic development. The remaining 45% of the total effect is the direct effect of transport on CO₂ emissions. To achieve an optimum solution when dealing with the inter-linkages among transport, socioeconomic development and CO₂ emissions, this article proposes an integrated intervention model. The key recommendation is that African governments should focusing more on minimising the direct contribution of transport infrastructure development on environmental degradations, which is not linked to social development.

The major shortcoming in this paper is the poverty data which was only available up to 2007 and hence out social development measure and the whole analysis was restricted to this date. Future studies may advance this analysis by looking for extended data. They may also consider multiple mediators in SEM. Estimating the model with potential moderators can also improve the analysis. This will show how the relationships among transport, socioeconomic development, and CO₂ emissions change when moderators or interventions are introduced.

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Appendix

Table A.1 : Principal components eigenvalues.

New Variables		Eigenvalue	Proportion	Cum. Proportion
Socioeconomic development	PC1	1.3944	0.6972	0.6972
	PC2	0.6056	0.3028	1.0000
Transport Infrastructure	PC1	1.7517	0.8759	0.8759
	PC2	0.2483	0.1241	1.0000

PC1 and PC2 denote first and second principal component, respectively. Cum stands for cumulative.

Let's Talk the Business of Health: What are South Africans' Awareness, Perception, Attitudes and Intentions to Use the National Health Insurance?

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Keywords

Awareness; Attitudes;
Perceptions; Intentions;
National Health
Insurance

Abstract

The World Health Organisation's country strategic priority is "strengthening national efforts towards the attainment of universal health coverage". In response to this, and South Africa's section 27 (a) of the constitution, the government established the national health insurance (NHI) policy. Acceptance and compliance to policies like this according to a study and the health belief model, require the assessment of the public's awareness, attitudes, perceptions and adoption intentions. This study questions the extent to which South Africans are aware of, have developed positive attitudes, perceive the benefits and costs of NHI, and have developed the intentions to use the NHI. Quantitative data was collected from 201 students and non-students with online questionnaires. Mean scores and percentages were used to assess the degrees of agreements and disagreements to the studied constructs. The results revealed that the levels of South African public's awareness, attitudes, perceptions and intentions to adopt the NHI policy has not improved much from results obtained in 2014 and 2017 studies. This is an indication that the government, Department of Health and other interest groups need to use communication channels with greater reach and impact to create greater awareness and build stronger attitudes and perceptions of NHI benefits.

1. Introduction

The national health insurance (NHI) responds to the World Health Organisation's country strategic priority aimed at "strengthening national efforts towards the attainment of universal health coverage" (Laws, 2018, p. 2). NHI is also in response to South Africa's section 27 (a) of the constitution, which is "to achieve universal access to quality health care services in the country. Specifically, section 27 of the constitution is aimed at establishing a NHI fund and to set out its powers, functions and governance structures; to provide a framework for the strategic purchasing of health care services by the fund on behalf of users; to create mechanisms for the equitable, effective and efficient utilisation of the resources of the fund to meet the health needs of the population; to preclude or limit undesirable, unethical and unlawful practices in relation to the fund and its users" (Health, 2019, p. 2).

The awareness, positive attitudes and perceptions of the NHI is important for garnering public support and success of the new NHI. A study conducted during the phase 1 of the programme, revealed that while there was some public awareness of NHI, education and perception of the program was poor. There was also a weak understanding of the costs to be borne by NHI and the public (Setswe, Nyasulu & Witthuhn, 2014). Setswe et al. (2014) recommended that consultation of communities and a mobilization plan be put in place in order to increase knowledge and understanding of NHI using different strategies, such as house to house campaigns, town hall-type of meetings, workplace consultations, consultations at significant sites in communities like clinics, schools, mines, farms and pension pay points.

Setswe et al. (2014) contend that these social marketing communication strategies may improve people's attitudes and perceptions about the NHI. How much these strategies have eventually created awareness, attitudes and perceptions of the NHI warrant a study. In 2020, Weir-Smith, Mokhele and

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Dlamini (2022) assessed how much urban residents are in favour of South Africa's NHI. They found that 77.5% of South African urban residents are in favour of NHI. Does this indicate that awareness, attitudes and perceptions of NHI have improved from 2014, when Setswe et al. (2014) conducted their study?

2. Problem Investigated

A large percentage of South Africa's population cannot afford private health services and must make use of public health services in an already congested public sector, thus leading to slower and unresponsive services. This has seen health transforming into a commodity rather than a human right. The people in need of health services the most are less likely to access quality healthcare than those who can afford private health services. Thus, the National Health Insurance (NHI) was introduced to address these disparities by strengthening the South African health system and developing an NHI fund to deliver quality, affordable healthcare. The main objective of the NHI is to cater for the health needs of many South Africans, especially the low income earners who make up the bulk of the population (Ataguba & McIntyre, 2018). How much these income earners and the South African population are aware of, perceive the costs and benefits of, and have developed positive attitudes towards the NHI needs examination.

Akhtar, Afroz, Masud, Rahman, Khalid and Duasa (2018) show that awareness and attitudes are important if perceptions are to drive behavioural intentions and actual behaviour concerning pro-environmental behaviour. In terms of health-related behaviour, Duh and Dabula (2021) show that when awareness of the importance of donating blood increases, it goes a long way to impact perceptions, motivations and attitudes, which in turn positively drives behavioural intentions to donate blood. Using the health belief model (HBM) and theory of planned behaviour (TPB), Ahkter et al. (2018) also revealed that awareness, attitude and perceived susceptibility, perceived severity, perceived benefits and barriers are important for a behaviour or action. Considering the importance of awareness, attitudes and perceptions, this study questions the extent to which South Africans are aware of, have developed positive attitudes, perceive the benefits and costs of NHI, and have developed the intentions to use the NHI. The findings will assist the South African department of health to ascertain if their efforts to create awareness and understanding of the benefits of NHI is yielding required results in changing perceptions and attitudes towards NHI.

3. Research Objectives

The main purpose of this study is to assess South Africans' level of awareness, attitudes perceptions of the costs and benefits of the NHI, and the intentions to use NHI.

4. Hypotheses

The following hypotheses were formulated for the study:

- H₁: South Africans are aware of the NHI.
- H₂: There is a positive attitude of South Africans towards the NHI.
- H₃: South Africans will agree to positively perceiving the NHI.
- H₄: South Africans will agree to perceiving benefits from the NHI.
- H₅: South Africans will perceive that NHI will reduce medical costs.
- H₆: South Africans will agree to having intentions to use NHI.

5. Literature Review

The literature introduces the NHI in South Africa and its benefits, defines, and discusses the studied constructs, i.e. perception, awareness, attitude, and intentions.

5.1 The introduction of the NHI and its objectives

South Africa faces several challenges in providing quality healthcare services to a large proportion of its citizens. This is amidst South Africa spending 8.9% of its GDP on health care (National Treasury, 2017, p. 57). This amount is high according to world standard. However, over half of this spending

exists within the private health sector, which represents less than 16 percent of the South African population (National Department of Health, 2017, p. 42). A large percentage of the country's population cannot afford private health services and must make use of public health services in a public sector that is already overcrowded, leading to delayed and less responsive services. This has turned health into a privilege rather than a moral right. The citizens most in need of public insurance are less likely than those who can afford private health coverage to provide access to affordable healthcare (Setswe et al., 2014).

The existing South African health care sector support structure consists of two components: a substantial proportion is funded by insurance services, hospital treatment plans and pocket fees. The other portion is financed by the monetary framework that includes mostly ordinary citizens who may not afford the insurance cover. This is the portion that needs to be converted into a single payer and equitable health care plan under the new NHI (Weimann, 2013, p. 15). This will not only yield to the call for universal health cover (UHC) by the WHO, but the implementation of the NHI program will satisfy the mandate of section 27(1a) of the South African Constitution (1996), which states that *“everyone has the right to access healthcare services including reproductive healthcare”*. The National Development Plan (NDP) 2030 suggests that the government must tackle the exorbitant fees of private health care and quality of public health issues (National Planning Commission, 2017). It is also expected that the NHI addresses both the quality of care and the affordability of care through strengthening activities in health systems and through the development of the NHI Fund (National Health Department, 2017, p. 42-43). The objectives of the NHI are outlined in Table 1.

Table 1: Objectives of NHI in South Africa

- | |
|---|
| <ol style="list-style-type: none"> 1. Ensure UHC for all South Africans; 2. Improve access to quality of health services irrespective of socio-economic status; 3. Promote equity and social solidarity through the pooling of risks and funds; 4. Create a single, publicly owned and administered health fund with adequate reserves and funds to plan for and effectively meet the health needs of the entire population; 5. Accelerate national health system transformation; 6. Create a single health purchaser that will ensure that health services and health products are purchased and procured at reasonable costs that recognise healthcare as a public good; 7. Promote efficient and effective service delivery in both public and private sectors that will be achieved through evidence-based interventions; 8. Strengthen the under-resourced and strained public sector so as to improve health systems performance; 9. Adopt appropriate, innovative health service delivery models to respond to local needs; and 10. Ensure continuity and portability of health service benefits across the country. |
|---|

Sources: NHI Green Paper (2011); NHI White Paper (2017); NHI Bill (2018)

The information in Table 1 are partly from a South African department of Health (NDoH) green paper released in 2011 with the intention of introducing the National Health Insurance (Weimann, 2013). The objectives of the NHI are to achieve universal health coverage through three phased implementation spanning over fourteen years that started 10 August 2011 and ending in 2025. Each phase was planned to be implemented in a five-year period.

5.1.1. Phases of the NHI implementation, successes and failures

Phase 1 of the NHI started in 2012 and ended in 2017. It involved piloting different health system while reinforcing interventions aimed at the primary health care level. Phase 2 started in 2017 and will be completed in 2022. Phase 2 aims to ensure that the NHI Fund is fully operational and has the requisite governance and management frameworks to allow the procurement of services and population registration to commence. This phase also includes adopting the NHI Bill and amending several parts of the bill. Phase 3 begins in 2022 through 2026 and will signal the emergence of compulsory prepayment and the contracting of approved private hospital and specialist services and the completion of the Medical Schemes Amendment Act (Department of Health, 2019, p. 12).

Phase 1 of NHI implementation included piloting 11 provincial districts. Districts were chosen on the basis of disease severity, socio-economic factors, health service performance and district management capability to introduce phase 1 NHI. During phase 1, numerous health programs were piloted to improve interventions at the level of primary health care (PHC) (National Department of Health, 2019 p. 12-22).

A survey evaluating phase 1 implementation interventions was conducted by NDoH in 2019 and it found that in areas where success was evident, strong political commitment, sufficient human and financial implementing resources, effective planning and cooperation and good management mechanisms were in place at the time of implementation. However, the interventions encountered a range of challenges that hampered implementation, i.e. poor planning, lack of funding, unreliable communication, lack of cooperation where necessary and insufficient processes to track progress and ensure the correction of courses. In certain cases, managers carried out programs in silos and tended to miss the overarching goal of the NHI project, which was to increase access to and efficiency of services at health facilities. In these situations, there was a shortage of frequent contact at various departmental level on progress towards achieving the NHI Phase 1 objectives. Additionally, the organizational culture within certain departments was viewed by staff as being overly bureaucratic. Culture also did not promote problem-solving and left no space for creativity or ingenuity. No recourse was made for poor performance, lack of transparency and insufficient use of data to track progress (National Department of Health, 2019, p.16).

Another study conducted during the introduction of phase 1 NHI revealed that while there was some public awareness of NHI, education and perception of the program was poor. There was also weak understanding of the cost to be borne by NHI and the public (Setswe et al., 2015 p. 228). Booyesen (2017, p. 7) also found that awareness and knowledge of NHI was relatively low among South African households with and without medical scheme cover during phase 1 stage. He recommended that a concerted effort is needed to establish a robust communication plan for disseminating information and gaining support for the national health insurance program of the country. Overall, the key recommendations for measuring NHI going forward include a shared common vision for NHI explicitly articulated in the plan, improved stakeholder communication, a well-defined results matrix, and strong monitoring and evaluation followed by corrective action (Zondi and Day, 2019 p. 56). These results can be achieved if there is adequate awareness, positive attitudes and the right perceptions of the benefits of NHI.

South Africa is currently in the third year of phase 2 adoption of the NHI (2018-2022), which entails the development of NHI legislation, the functional NHI Fund and its mechanisms, and the procurement of personal health facilities for disadvantaged communities (Zondi & Day, 2019 p. 55). There is not much literature and data published on this phase of NHI implementation. The dissemination of the results of the current study will inform awareness, knowledge, attitudes and perceptions of South Africans of the NHI and guide appropriate legislation development and resources allocations.

5.2 Definitions and Discussions on Constructs' Benefits Within the Marketing and Health Contexts

5.2.1 Awareness

Marketers describe awareness as the level of consumers' knowledge of a brand, an organization or company and its services and products (Kilei, Iravo & Omwenga, 2016). The awareness of a company or organization and what it offers as services, products or ideas is one of the initial and fundamental steps in not only customer buying process (Ishak & Zabil, 2012), but in the formation of perceptions, attitudes and resultant behavioural intentions (Duh & Dubula, 2021). Social marketers who strive to change behaviours lay enormous emphases on stimulating consumer and public awareness in order to elicit desired responses and behaviour from targeted audience. Financial resources, time and efforts are being invested to engender more awareness, change attitudes, beliefs and behaviour (Foroudi, 2019). A product, brand, service or organisation that enjoys significant levels of awareness among

consumers is usually regarded positively and associated with good and positive reputation (Asamoah, 2014); hence it is regarded as the cornerstone in transforming consumer attitude and behaviour towards products (Abdolvand, Farzin, Asl & Sadeghian, 2016).

In the health space, Sampogna, Bakolis, Evans-Lacko, Robinson, Thornicroft and Henderson (2016) examined how much awareness creation on anti-stigma mental health campaign in England assisted in lowering mental illness stigma. They found that increased awareness levels increased tolerance, support and acceptance of mental illness. In terms of NHI in South Africa, Weir-Smith, Mokhele and Dlamini (2022) speculate that South Africans will favour the programme more when knowledge and awareness of its benefits increase.

5.2.2 Attitudes

While sociologists see attitudes to be a mental inclination to act, expressed by evaluating a particular thing or person with some degree of approval or disapproval (Huang, Beatson & Lings, 2015), marketers describe it as a combination of consumers' feelings and beliefs capable of igniting behavioural intentions towards some objects assert that and emanating from the assessment of several facets in the consumer's mind. Attitudes results in either negative or positive images of companies, their products and ideas in the consumer's mind (Pande & Soodan, 2015). Depending on whether positive or negative attitudes are developed, consumers' spending and purchase behaviours are impacted (Griffin, Grace & O'cass, 2014).

For health-related behaviour, and using the social cognition theory, Lee and Li (2021) found that the publics' attitudes and perceptions of social distancing developed from transparent communication which comprises accountability, information substantiality, and participation predicted social distancing behaviour during the outbreak. Moreover, when there is organizational trust positive attitudes and perceptions are formed of their policies and actions (Lee & Li, 2021). Applying the theory of planned behaviour, Duh and Dabula (2021) found that positive attitudes toward a health-related behaviour is a strong predictor of behavioural intentions to act. The attitude in itself is determined by perceptions.

5.2.3 Perception

In consumer behaviour studies, perception is defined in terms of as a process of consumers receiving, selecting, organizing, interpreting stimuli and translating it into a meaningful and coherent picture or response (Kazmi, 2012; Endo & Roque, 2017). These activities happen after consumers are exposed and their attention are drawn to the stimuli. The interpretations and translations are subjective and depend on the receivers' socio-economic status, such as income/wealth, employment statuses, age, gender, race, education level, and place of residence (rural/ urban/regional location). In the health sector, what is perceived could be previous and expected experiences, healthcare service quality, activities and opportunities in healthcare (Weir-Smith et al. 2022).

In addition to various beliefs that patients may have that prevents them for undertaking desirable behavioural, the health belief model or theory posits that perceptions of susceptibility, self-efficacy, health benefits and costs may propel and prevent people from engaging in a health activity or behavior (Akhtar et al., 2018). The current study examines two types of these perceptions general perception, perceived cost and benefits of NHI. Weir-Smith et al. (2022, p. 3) contend that these perceptions matter in South Africa because of the high income inequalities and "the impact they may have on the two-tier private-public health system in the country", especially as it was found that the South Africa government is perceived to be more in favour of the public than the private sector. The government is also perceived to have inadequate administrative capacity and funding to enact the NHI.

5.2.4 Intentions

In marketing, technology adoption, pro-social and pro-environmental studies, intentions have been variously studied. Marketers study intentions in terms of purchase intentions while technology adoption and pro-social and pro-environmental studies view the concept in terms of behavioural intentions. Despite these contexts, intentions are viewed as either the willingness to act now or in the

future or to repeat a behaviour (Duh & Dabula, 2021). Intentions, also viewed as a good motivation to act have been consistently been found as a strong and positive driver of adoption and purchase behaviour (Lai & Cheng, 2016; Dilotsotlhe, 2021; Duh & Dabula, 2021). To comply in paying health insurance premium, Sunjaya et al. (2022) found that intentions are important and the intentions are driven by the people's internal factors such as awareness and knowledge of the NHI, attitudes and financial abilities and external factors such as perception of the health care quality and good operational health system.

From the literature reviewed, it can be concluded that when adequate awareness is created around the benefits and affordability of the NHI, positive attitudes and perceptions are built, which all lead to behavioural intentions, which is in turn a strong driver for purchase behaviour. The research methods to collect data and assess the awareness, attitudes, perceptions and intentions to use South Africa's NHI are discussed in the next section.

6. Research Methodology

Considering the nature of the research objectives, quantitative methods were used to collect and analyse the data. The analyses started with descriptive statistics, followed by a test of the construct reliability before assessing the mean in terms of the degree of agreement to the statements measuring the constructs.

6.1 Sample

The sample was both students and non-students in Gauteng Province. Specifically, the target population were University of Witwatersrand (Wits) students above the age of 18 and young adults (18-34) and adult workers mostly from Sasol (35-65), and both male and female who will be needing the national health insurance in the Gauteng Province. Since it was impossible to get the total number of the Wits students and the Sasol workers willing to participate in the study for a probability sampling technique, a non-probability convenient sampling method was used. A snowballing method was used for the Sasol workers. After obtaining ethics clearance from the Wits Ethics Committee with ethics number CBUSE/1574, fully completed data was collected from 201 respondents.

6.2 Measurement instruments and data collection

A self-administered questionnaire was used with scales and instruments from previous studies measurement to measure the constructs of this study. The questionnaire comprised of two sections: section A had ten (10) questions regarding the demographics of the respondents and section B had forty-two (42) questions regarding respondents' awareness, perception, attitude towards NHI and intentions to use NHI. The questionnaires were distributed electronically to the respondents. Respondents were informed that completing the questionnaires indicates their consent to participate in the study. This was done to ascertain that responses of the participants cannot be linked to their identity thus assuring their anonymity. Respondents completed the questionnaire over a period of two weeks in 2020. The link to the electronic questionnaire was sent to Wits students' emails obtained from course coordinators after obtaining permission from the registrar. For the Sasol workers, the link was sent to some few workers whose WhatsApp numbers were known and they later snowballed to other workers. All these methods were used due to the Covid-19 pandemic measures of non-physical contacts. Awareness and knowledge of the existence of NHI was measured with adapted items from Setswe et al. (2015) and Oladimeji, Alabi and Adeniyi (2017); attitudes (Setswe et al., 2015); perceived benefits (Kaufmann, Petrovici, Filho, & Ayres, 2016), perceived cost (Booyesen & Hongoro, 2018) and intentions (Dilotsotlhe, 2021). A five point Likert scale was used to measure the constructs whereby 1= strongly disagree and 5 = strongly agree.

Table 2: Descriptive Statistics

Gender	Percentage
Male	45.8%
Female	50.7%
Prefer not to say	3.5%
Respondents age distribution	Percentage
18 to 24 years	35.3%
25 to 34 years	24.9%
35 to 44 years	21.9%
45 to 54 years	17.4%
55 years+	0.5%
Total	100%
Level of Education	Percentage
Matric graduate	29.4%
Undergraduate	30.3%
Postgraduate	37.8%
Other	2.5%
Household Income	Percentage
Unemployed	32.3%
Less than R5000	6.5%
R5000-R10000	7%
R11000-R15000	5.5%
R16000-20000	9.5%
R21000+	39.3%
Health Spend	Percentage
Use medical aid	49.8%
Pay cash out of pocket	16.4%
Use free public healthcare	33.8%
Private Medical Aid Use	Percentage
Yes	48.3%
No	51.7%
Use Private or Public Health Facilities	Percentage
Private health use	57.2%
Public health use	42.8%

7. Results and Findings

7.1 Descriptive statistics

For the descriptive statistics, data was collected in terms of gender, age, highest level of education, household monthly income, health spend, use of private medical aid, use of healthcare facilities, and where health information is gathered. The results are in Table 2.

7.2: Constructs' reliability and hypotheses results

The constructs' reliability was measured with both Cronbach alpha and composite reliability before checking the means to assess whether there were high or low agreements to the studied constructs. The results are in Tables 3-8.

Table 3 Attitude towards NHI

Measurement items for Attitudes	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)
I am confident that the NHI is government's plan to take care of everyone's health in the future	14.9	19.4	22.4	31.3	11.9
I believe that the NHI Fund will belong to all South African citizens so hospitals and health care professionals can be paid for the service they provide	16.4	17.9	18.4	35.3	11.9
With the NHI, I am hopeful that both the	20.4	17.9	19.9	29.9	11.9

rich and the poor will receive proper healthcare of the same quality					
I have the feeling that NHI will allow people to have equal and fair access to skilled health professionals and equal and fair access to finance for healthcare	17.4	20.9	19.4	29.9	12.4
I am hopeful that under NHI, healthcare will be provided to all, whether you are employed or unemployed	15.4	19.9	18.4	34.3	11.9

Source: Own compilation

Table 3 shows that there was greater percentage of agreement to all the statements measuring attitudes, than neutrality and disagreement. This means that there are some positive attitudes toward NHI.

Table 4 Awareness and knowledge of NHI.

Measurement items for Awareness	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)
You have knowledge of what the NHI is About	5.0	7.0	17.9	59.2	10.9
You have knowledge of how the concept of NHI was developed in South Africa	6.5	12.9	28.9	43.3	8.5
You have knowledge of the meaning of "health insurance" in the NHI concept	6.0	7.0	23.4	53.2	10.4
You have knowledge of why South Africa needs the NHI	7.0	8.5	19.4	57.7	7.5
You are aware of the existence of the NHI green paper	8.5	16.4	16.9	49.8	8.5
You are aware and knowledgeable on the objectives of the NHI	9.5	10.0	14.9	55.7	7.0

Source: Own compilation

Table 4 indicates that there a greater percentage of agreements to the statements measuring awareness. Thus, respondents are aware of the NHI but not strongly.

Table 5: General perception about NHI

Measurement items for General Perception	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)
NHI will increase access to health care services	13.9	15.9	19.9	39.8	10.4
NHI will assist in health care costs that limits access to quality health services	13.9	16.9	18.4	38.3	12.4
NHI will increase access to health services for majority of people	14.4	17.4	17.9	37.8	12.4
NHI will improve quality of health services you receive	16.4	18.4	22.4	30.3	12.4
Majority of people will utilise health care services under the NHI system	12.4	17.9	18.4	38.8	12.4
Rollout of NHI should be a policy priority	15.9	16.9	16.9	33.8	16.4

Source: Own compilation

Table 5 indicates that majority of respondents agree to having a positive general perception about what NHI will do.

Table 6: Perceived benefits of NHI

Measurement items for Perceived Benefits of NHI	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)
There will be Improved quality of health care under NHI	12.9	19.9	25.9	35.8	5.5
There'll be reduced medical errors under NHI	13.9	23.9	31.3	26.9	4.0
There will be increased professionals' productivity under NHI	12.9	24.9	27.4	30.8	4.0
There will increased healthcare users' satisfaction under NHI	12.9	23.4	25.4	33.8	4.5
There will be reduced costs of medicine under NHI	12.9	16.9	23.9	39.3	7.0

Source: Own compilation

Table 6 shows that as much as there was agreement to the perceived benefits expected from NHI there were fairly neutrality and some disagreements. For example, there was more neutrality than agreement for the statement, “there'll be reduced medical errors under NHI”.

Table 7: Perceived Cost of NHI

Measurement items for Perceived Cost	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)
NHI will be more affordable	5.5	6.0	41.3	38.8	8.5
NHI will be cheaper than current medical aid cost	5.0	5.0	38.8	44.3	7.0
Your family will be financially better off under NHI	7.5	6.0	46.8	33.3	6.5
NHI will lessen your difficulties in affording cost of healthcare	8.5	5.0	43.3	36.3	7.0
Prescription medicine will be more affordable under NHI.	8.5	5.0	45.8	34.8	6.0

Source: Own compilation

Except for the statement, “NHI will be cheaper than current medical aid cost”, Table 7 shows that respondents were more neutral than agreement to the perceived cost of NHI. This shows that they are not confident that NHI will lessen their medical costs.

Table 8: Intentions to adopt NHI

Measurement items for Intentions to adopt NHI	Strongly disagree (%)	Disagree (%)	Neutral (%)	Strongly agree (%)	Strongly agree (%)
I will be happy to subscribe to NHI	20.4	12.9	26.4	31.3	9.0
I will be satisfied to be enrolled in the NHI program	18.9	12.9	27.4	32.3	8.5
Being a member of NHI will be the right thing to do especially as it would cost less	18.4	13.9	27.4	30.8	9.5
I will be happy to use the NHI services offered by the government	18.4	14.4	23.9	33.3	10.0
The acceptance of NHI will not be a problem to me	19.9	14.4	23.4	33.3	10.0

Source: Own compilation

Table 8 indicates that majority of respondents agree to having the intentions to adopt NHI than they are neutral or disagree. The overall mean scores of agreements to statements measuring the constructs are in Table 9.

Table 9: Constructs' Reliability and Mean

Constructs	Cronbach Alpha	Composite Reliability	Mean
Attitudes	0.963	0.971	3.03
Awareness	0.954	0.963	3.47
General perception	0.973	0.978	3.15
Perceived benefits	0.969	0.976	2.95
Perceived cost	0.953	0.964	3.32
Intensions to use NHI	0.987	0.990	2.98

Source: Own compilation

Table 9 shows that all the studied constructs had very good reliability. In terms of the agreement or disagreement to the statements (items) measuring the constructs, mean scores below 2.5 on the five point Likert scale indicates disagreement, between 2.5 and 3 indicate neutral and scores above 3 indicate agreement to the statements. According to Table 3, and with the exception of perceived benefits, intentions to use NHI and attitudes, which show that respondents are neutral, respondents are fairly aware of NHI (M = 3.47), fairly favourably perceive NHI (M = 3.15) and regrettably perceive NHI as costly (M = 3.32).

Table 10: Decisions on the Hypotheses

Hypotheses	Mean	Decision
H ₁ : South Africans are aware of the NHI.	3.47	agree
H ₂ : There is a positive attitude of South Africans towards the NHI.	3.03	neutral
H ₃ : South Africans will agree to positively perceiving the NHI.	3.15	agree
H ₄ : South Africans will agree to perceiving benefits from the NHI.	2.95	neutral
H ₅ : South Africans will perceive that NHI will reduce medical cost.	3.32	agree
H ₆ : South Africans will agree to having intentions to use NHI	2.98	neutral

Source: Own compilation

Although there were fair agreements and neutrality of South Africans to their awareness, attitudes, perceptions and intentions to use NHI, it is encouraging to know that they are not disagreeing to the statements measuring these constructs.

8. Managerial Implications

The World Health Organization (WHO) 2015 report shows that about 150 million people globally struggle with affordability of healthcare. Thus, nations are seeking ways to provide and improve affordable and quality healthcare for all their citizens. In South Africa, the private healthcare caters for only 16% of the population and the cost of medical insurance is increasingly becoming unaffordable (Weir-Smith et al, 2022). To achieve the Millennium Development Goals and comply with the WHO recommendation of a universal health cover for all, the South African government like many other nations are establishing a NHI which as reported by Weir-Smith et al. (2022, p. 2) is to “to integrate the various healthcare systems in the country by providing a healthcare system that improves access to healthcare services, provides quality healthcare for all, and reduces the inequalities in healthcare based on the ‘haves’ and the ‘have-nots’ reality”. For all to accept and comply with the terms of the NHI, Sunjaya et al. (2022) recommend the study of the publics’ internal factors such awareness, attitudes, perception of financial cost and affordability and intentions.

This study assessed the levels of awareness, attitudes, perceptions of cost and benefits and the intentions to adopt South Africa’s NHI. The results will inform the South African department of health on how much their efforts to create awareness and understanding has yielded results in changing perceptions and attitudes towards NHI. It specifically informs the department that although the NHI is at the last year (i.e., 2022) of its second phase, the level of awareness, perceptions, attitudes and intentions has slightly improved but still low.

9. Conclusion

This study questioned the extent to which South Africans are aware of, have developed positive attitudes, perceive the benefits and costs of NHI, and have developed the intentions to use the NHI. It was found that the respondents are neutral and fairly agree to the statements measuring these studied constructs. At the start of the second phase of the NHI, Booysen (2017) found that awareness and knowledge of NHI was relatively low among South African households. Regrettably and according to the findings of this study, the awareness, attitudes, perceptions and intentions to adopt South Africa's NHI have not improved much. As Booysen (2017, p. 7) recommends that "concerted efforts are required to develop proper communications strategies to disseminate information and garner support for the country's national health insurance policy, it is recommended here that greater reach communication strategies such as social media should be used. This is particularly important because Duh and Dubula (2021) found that social media communication positively impacted awareness, perceptions, attitudes, which in turn strongly drive behavioural intentions to donate blood.

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The Life Force Needed for the Force of Life: Strategy Implementation at a South African Water Board

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Keywords

Strategy implementation; water sector, challenges, commitment, government, stakeholders.

Abstract

Strategy implementation remains the most problematic aspect of strategic management, and implementation challenges impede on the successful roll out of intended strategy. This study highlights strategy implementation challenges at a South African water board, where strategy is compounded by the importance of water as a scarce resource, and by the agenda of government. The study was interpretive and qualitative in nature, with semi-structured interviews conducted amongst 16 senior managers at the water board. Findings show that this water board is facing immense challenges with implementation, stemming from the expectations of governmental bodies, which override the expectations and needs of other stakeholders, leading to an unhealthy situation where the water board is at risk of not fulfilling its primary mandate.

1. Introduction and background

Strategy implementation is regarded as the most challenging phase of the strategic management process. (Muthoni & Kavale, 2015; Greer, Lusch & Hitt, 2017). Successful strategy implementation has become a key issue for many organisations, and is viewed as a key contributor to a sustained competitive advantage (Bounds, Mbombo & Rossouw, 2018; Ferreira, Neto & da Silveira Batista, 2019). However, challenges surrounding strategy implementation persist, and it still gains much attention from researchers and practitioners alike (Cândido & Santos, 2015).

Mitchell (2015) concluded that 61% of organisations studied found it difficult to deal with strategy implementation challenges, while more than 50% of organisations believed their strategic endeavours were successful, and 88% of organisations believed that achieving their intended strategic initiatives was ‘essential’ for their competitiveness and sustainability. Another study (Carucci, 2017) concluded that 67% of well-developed strategies fail due to poor implementation, and that 61% of executives are not effectively equipped for the strategic challenges they are confronted with. This low ‘conversion rate’ of intended strategy into realised strategy is apportioned to senior managers not being equipped with the necessary skills, and difficulty in translating developed strategy into functional and operational activities. (Carucci, 2017). Further obstacles to strategy implementation include (*inter alia*): a lack of involvement during strategy development, a lack of effective communication about strategy, and a lack of resources devoted to strategy implementation (Engert & Baumgartner 2016; Cândido & Santos, 2019).

This paper focusses on strategy implementation issues at a South African Water Board. As a natural resource pivotal to our economy, water is essential to the daily running of households, businesses and industries (Landie, 2016). Therefore, water resources must be managed effectively to ensure water security and sustainable utilisation. Water is not only a national asset, but also a scarce resource and water resource management is vital to maintain a balance between social and economic needs and water sustainability (Masindi & Duncker, 2016).

According to Gumbo, Kapangaziwiri, Chikoore, Pienaar and Mathivha (2021), water resource management is one of the greatest global challenges of the 21st century, due to rapid population

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growth, as well as increased agricultural and industrial outputs. As a water-stressed country striving to adopt a rational, just and equitable way to manage water (Oosthuizen, Hughes, Kapangaziwiri, Kahinda & Mvandaba, 2018), South Africa faces growing water demands to meet the needs of a rapidly growing and urbanising population. Coupled with climate change, driving the country towards a warmer, drier future, less water will be available to meet water needs in future (Viljoen & van der Walt, 2018).

Business, government and policy makers need to work together to ensure water supply, improve the productive potential of current resources, and lessen the potential impact of climate change on water security (Viljoen & van der Walt, 2018; Rand Water, 2019). According to Masindi and Duncker (2016), there are various role players involved in the management of water services in South Africa, including the Department of Water and Sanitation, Municipalities, and government owned water boards. A feature that distinguishes the South African water sector is the existence of an important institutional tier between the national and local government, in the form of water boards. Water Boards have an essential role to play in terms of the purification of water, managing the regional bulk potable water distribution, and operating water resource infrastructure (Masindi & Duncker, 2016).

2. Purpose of the study

Water boards in South Africa provide an interesting context for the study of strategy implementation, as they experience challenges that are unique in the water sector, and they are a form of organisation unique to the South African water sector (Mosai, 2019). The constant changes experienced in the water sector in South Africa require these water boards to continually adapt and assess their strategies and implementation practices to address and overcome any challenges that might arise. This also assists water boards in achieving their mandate of supplying bulk potable water without interruption (Mosai, 2019).

The underlying problem this study is concerned with, is the apparent inability of organisations to bridge the gap between strategy development and strategy implementation, resulting in strategy implementation challenges and failure. Water boards too have strategic targets that need to be met to ensure water security, and they also run the risk of encountering strategy implementation challenges. Without effective strategy implementation practices, and if implementation challenges are not effectively addressed, the water boards' ability to achieve their strategic targets will be diminished.

With this research problem in mind, this study addresses the following research question:

What are the current challenges hindering strategy implementation at a water board in South Africa?

To answer the stated research question, the following research objective is pursued in this paper:

To understand the dynamics of strategy implementation at a South African water board in order to ensure more effective functioning and water provision.

This study aims to explore the strategy implementation practices at a water board, and focuses on implementation practices, but does not lose sight of the strategy formulation aspect of strategy.

3. Literature review

To understand the role of strategy implementation in the management of an organisations' strategy, this section will take a step back and briefly consider the strategic management process. Thereafter the implementation of strategy will be expounded upon and contextualised to the water sector in South Africa.

3.1 The Strategic Management Process

It would appear as though the contemporary, dynamic and turbulent business environment has compelled organisations to place greater emphasis on strategic issues (Misankova & Kocisova, 2014;

Mufudza, 2018). As such, organisations need to develop and implement strategies that can propel them to greater heights (Muthoni & Kavale, 2015). This implies that individuals or teams involved in the strategic management process need to decide upon strategies that are appropriate to remain relevant, competitive and sustainable. Effective strategic management is therefore a function of people actively considering strategy in day-to-day decisions that are required in an ever-changing world.

Strategy not only explains what an organisation's purpose is, it also defines an organisations long term direction, and acts as a guide toward achievement of its purpose (Misankova & Kocisova, 2014; Gamble, Peteraf & Thompson Jr, 2015). It is therefore essential that developed strategy is achieved as intended. However, research indicates, that this is not necessarily the case, and a significant gap exists between strategy on paper and the realisation of strategy (Kimotho, 2012).

3.2 Strategy Implementation

Strategy implementation is the execution of a crafted, developed strategy, and is considered the most significant, and undervalued, part of the strategic management process (Gamble, et al., 2015). Strategy implementation sets out to incorporate strategy into organisational 'life', to let it form part of the daily decision-making procedures of the organisation. It is therefore essential to ascribe suitable indicators describing organisational activities, and a method for assessing effective implementation.

Strategy implementation encompasses the total design of the organisation, to assign and manage people to take on responsibilities that will lead to the realisation of formulated strategies (Grant, 2016). Strategy implementation involves anticipating challenges that could negatively affect the outcome of implementation initiatives, and therefore needs to be linked to key aspects and functions of the organisation to find the most appropriate way to implement strategy (Rajasekar, 2014). Implementation is, therefore, also more challenging than strategy development, as it requires a coordinated effort from the entire organisation (Sull, Homkes & Sull, 2015).

3.3 Strategy Implementation Challenges

Support and coordination from internal and external role players are seen as obstacles to the implementation of strategy (Sull, et al., 2015; Ivancic, Mencer, Jelenc & Dulcic, 2017). Internal factors under the direct control of management are regarded as a fundamental challenge to successful strategy implementation (Candido & Santos 2019). These internal challenges mainly stem from top management over emphasising strategy formulation and strategic planning, but not paying enough attention to also adopting a problem solving mind-set for effective strategy implementation (Tawse, Patrick & Vera, 2019). In the process, strategy formulation and strategy implementation are misaligned, creating the impression that management knows where they want to go, but don't know how to get there, and that they are more committed to the goal itself than in achieving the goal.

Middle- and supervisory level managers often have requisite skills to help formulate strategy, but seldom possess the skills to implement it (Greer, et al., 2017). Managers therefore act reactively to implementation issues that arise, but lack the ability to proactively put measures in place to foresee and negate the effect of any potential issues associated with implementation (Sull, et al., 2015).

As strategy formulation and implementation go hand in hand, employees who are not part of the formulation of strategy, will not be able to effectively implement the strategy (Ramgulam, 2015). Therefore, employees at all levels of the organisation need to be involved in the entire strategic management process. Furthermore, here also seems to be a misalignment between strategic goals and operational goals in organisations, and this obstructs the process of strategy implementation, and can lead to dramatic drops in productivity and misallocation of resources (Viljoen, 2015).

Other factors such as persistent errors on the part of management, key personnel leaving the organisation, ineffective change management initiatives, excessive daily tasks that detract from strategy implementation, communication breakdowns centring around selective attention and

retention of key pieces of information, and conflicting organisational priorities all contribute to the complexity of strategy implementation (Speculand, 2014; Heracleous & Werres, 2016)

3.4 Key Success Factors for strategy implementation

Although various challenges may hinder strategy implementation, factors also exist that expedite strategy implementation. According to Mistry, Barrick, Kirkman & Hitt (2016) strategy implementation relies on engagement and communication at every level of the organisation. Easterling (2016) states two activities necessary for successful strategy implementation, namely to operationalise the strategy in terms of detailed functions, activities, and performance measures for employees, and to create an organisational structure conducive to implementing the actions that the strategy requires. Engert and Baumgartner (2016) add to this that organisational culture, leadership, control of activities, and employee motivation are key factors that reduce the gap between corporate strategy development and implementation. Misankova and Kocisova (2014) expand, *inter alia*, upon the employee motivation aspect, adding that personal involvement and sharing responsibility for actions assist in effective strategy implementation.

3.5 Strategy Implementation and the South African Water Sector

Water resource management plays a critical role in sustainable economic development of South Africa (Muller, Chikozho & Hollingworth, 2015). For water resource management, water boards are vital role players in water purification, the operation and maintenance of water infrastructure, and the provision of water, and emphasise the need to strategically manage this resource for optimal economic benefit (Masindi & Duncker, 2016). Climate change, people not having access to basic water and sanitation, mismanagement of funds, and degradation of infrastructure is not only stretching the resource, but also bringing to question how it is managed strategically (Ruiters & Matji, 2015).

All these challenges create compounded challenges when one speaks of trying to implement strategy expediently at role players such as water boards, as they continually have to adapt and assess their strategies and implementation practices (Mosai, 2019). This is echoed by the Mena Report (2018), stating that South Africa must close the gap between strategy planning and implementation in the water sector to focus on water provision and utilisation, and to expeditiously deal with the challenges the sector faces.

Despite capacity building initiatives from within the sector, requisite skill levels within the sector are dwindling, with a shortage of engineers, water scientists, technicians and artisans (Mvulirwenande, Wehn de Montalvo & Alaerts, 2013; Moyo & Wehn, 2017). This places doubts over the sectors' ability to provide services effectively (Masindi & Duncker, 2016). However, parastatals constitute key role players in the water sector, and are therefore subject to governmental agendas (Moyo & Wehn, 2017). Changes in government policies regarding these agendas will impact on strategy implementation, as these changes don't always align with the goals of water provision, but are more politically motivated (Kimotho, 2012).

Specific to water boards, certain key success factors need to be in place for strategy to be implemented successfully (Muthoni & Kavale, 2015). These include: intra and inter-organisational coordination, effective communication, streamlining of processes, aligning structure to strategy, motivating employees, and effective leadership. Of all the factors, Muthoni and Kavale (2015) single out effective leadership as the force that binds the other factors into an effective whole. In reality, however, these key success factors are seldom in place, due in part to overlapping responsibilities of key personnel and an inability to achieve stated objectives (Musonda, 2016), but also due to political infighting amongst different role players (Pahl-Wostl, 2019; Van Buuren, van Meerkerk & Tortajada, 2019).

Effective monitoring and evaluation are essential in the implementation of strategy, as it assists in understanding trends, and acts as input for adapting implementation plans as the need arises. However, current monitoring systems in the sector provide such poor data that it poses a risk to the achievement of organisational goals (Viljoen & van der Walt, 2018). In order for strategy to be implemented

properly, proper resource allocation (which includes funding) is required (Moyo & Wehn, 2017). The right mix of resources is needed – including financial, human, and otherwise – at the right time and place to fulfil the requirements in water provisioning and water services management (Kimotho, 2012).

4. Methodology employed in this study

This study employed an interpretivist paradigm, as the primary objective of the study focuses on understanding the dynamics of strategy implementation at a South African water board. Interpretivism focuses on understanding the world through first-hand experience and truthful reporting about the social world (Babbie & Mouton, 2014; Hallebone & Priest, 2017). In line with the interpretivist philosophy, the study used a qualitative research approach to gain an understanding of the challenges associated with strategy implementation at a water board in South Africa. Qualitative research provides rich, detailed and thick descriptions of social phenomena, as participants are encouraged to converse freely about their experiences with these phenomena (Collis & Hussey, 2014; Antwi & Hamza, 2015).

Furthermore, a single case study design was pursued in this study, and more particularly, a South African water board was selected as object of inquiry. Case study research is suited for in-depth investigation of current events in actual contexts (Yin, 2012), and in this case, the issue of strategy implementation is studied in the context of a water board. The selection of the case was purposive, as the water board selected is the largest water board in South Africa in terms of scope of operation, and can therefore be seen as an archetypal case of a South African water board.

From this water board, a sample of 16 research participants was selected on a purposive basis from the ranks of senior and middle management across various functional areas and geographic locations of the water board. Data collection was facilitated through the use of semi-structured face-to-face interviews, as they allow for deep probing of complex issues, and can realise rich, descriptive data (Saunders, Lewis & Thornhill, 2012; Babbie & Mouton, 2014).

Data were analysed by means of directed content analysis, which validates, refines and adds onto existing theory in new fashions and contexts (Mayring, 2014). Directed content analysis was facilitated by a four stage analytical process, as proposed by Erlingsson and Brysiewicz (2017):

- 1 – Identify and develop codes from raw data
- 2 – Develop relationships and connections between the codes
- 3 – Develop categories
- 4 – Develop themes from interrelated categories

This process allowed for the underlying meaning in the content to be expressed as well as in-depth conclusions to be made from the data obtained.

To ensure that ethical principles were upheld, ethical clearance was obtained from the College of Business and Economics at the University of Johannesburg, as this paper is extracted from an MCom study for which ethical clearance was needed. In addition to gaining permission from the water board in question to conduct this research, informed, voluntary consent was sought from research participants. Participants were reassured that data would be treated with the requisite confidentiality, and that anonymity would be ensured. It was also reiterated that participation was voluntary, with the right to withdraw at any stage.

5. Findings forthcoming

When this study was planned, face-to-face, semi-structured interviews were decided upon. However, with COVID-19 and the ensuing lockdowns, face-to-face meetings were not possible. It was decided to utilise Zoom to facilitate the interviews. This turned out to be advantageous, as the record function of Zoom seems to be less invasive than the presence of a recording device in a face-to-face interview, and no participant objected to being recorded on Zoom. Participants varied in age between 34 and 63

years, occupied middle and senior managerial positions, and had been employed for between two and 25 years, with two participants being employed at the water board for less than 10 years. Participants had occupied their current position for between three months and 24 years. Of the 16 participants, most had worked their way ‘through the ranks’ to their current position, and four participants were employed at the water board in the position they currently occupy. From the coding and analytical process employed, five key themes emerged, which will now be unpacked in turn. Evidence in support of the claims made has been kept to a minimum in the interests of brevity, but further evidence is obtainable from the authors.

5.1. Theme 1: Understanding strategy development and strategy implementation

This theme provided a detailed description of what strategy development and strategy implementation was all about at the water board. Participants seemed to give very theoretical ‘text-book’ explanations of strategy and the importance thereof, which seems to reflect more of what participants would like to see happening regarding strategy, and less of what is happening.

Participants opined that strategy development is a definite top management responsibility, whereas strategy execution was a definite middle or even operational level responsibility. Although this is a ‘textbook’ definition, it seems to absolve different levels of management from certain responsibilities insofar as formulation and implementation of strategy are concerned, which does not help in terms of overall buy-in and a sense of ownership in strategy. However, participants definitely do see strategy as a process and not a once-off event, with a definite link between formulation and implementation of strategy. (Gamble, et al., 2015; Mufudza, 2018).

Participants recognised the water board’s vision, mission, goals, and performance targets as the ‘visible’ elements of both strategy formulation and strategy implementation, which are devised during strategy formulation, but act as the target or goal that the strategy aspires to achieve through current activity. Thus, there is an awareness amongst participants that implementation implies transferring crafted strategy into action, which is consistent with the views of Gamble, et al., (2015), and Verweire (2019).

Research participants were all aware that strategy implementation is exceedingly complex, as it requires various internal and external elements, resources, good leadership, clear communication, and good stakeholder management to spell out the ‘road map’ of the organisation’s strategic intent. Literature also highlights this complexity (Sull, et al., 2015; Grant, 2016), stressing that strategy implementation requires design and coordination of effort across the entire organisation, as well as outside of it. In line with Misankova and Kocisova’s (2014) view that strategy implementation plays an important role in organisational competitiveness, some participants felt that strategy implementation is vital to ensure the success of the water board. Although this is what water board aspires to, it does not seem to be happening.

The table below contains quotations extracted from the interviews in support of the claims made above:

Participant 5: *“Strategy implementation follows strategy formulation. It’s often the most difficult and is dependent on many variables; for example, maybe the strength of the strategy, whether it’s focused enough, properly communicated with guidelines on how to operationalise or implement and monitoring and tracking performance against set objectives.”*

Participant 13: *“Well, before a strategy can be implemented it must first be crafted to set direction for the organisation. A vision of the organisation’s long-term goals must be set, a mission that describes the purpose of the organisation and a set of values to support the vision and mission must be set. Also, objectives must be set to convert the vision and mission into specific performance targets, to move the organisation along its strategic intent.”*

Participant 16: *“Yes there is. Strategy without implementation is just a nice idea on paper. Strategy has to be shared and implemented if it is to have a meaningful impact.”*

Participant 15: *“Strategy development can be seen as an analytical and systematic process of selecting the best course of action required for the organisation to achieve its objectives, prescribed by its vision, mission and values. Strategy implementation is more an operational process aimed at managing the various elements during execution to achieve success.”*

5.2. Theme 2: Stakeholder involvement in strategy development and strategy implementation.

This theme provides insights into research participants’ involvement in the organisation’s strategy development and implementation processes at various levels within the organisation, as well as their experience of how various stakeholders are involved in strategy development and implementation.

All participants mentioned that the water board has a dedicated strategy department known as ‘Strategy Portfolio’ or ‘Group Strategy’, and strategy development is conducted at executive level with the input of various internal and external stakeholders. Internal stakeholders include the CEO, the CEO’s team, the Strategy Portfolio and the Portfolio Integrating Committee. This coincides with views from literature that strategy is a top management responsibility (Greer, et al., 2017; Wheelen, Hunger, Hoffman & Bamford, 2017). However, literature stresses that successful strategic management requires total organisational effort, but several participants mentioned that strategy development takes place at executive level only, and does not involve the rest of the water board, which was problematic. This will be further addressed in Theme III.

Participants did mention external stakeholders, such as the Department of Water and Sanitation, who help shape the water board’s strategy, as it ultimately needs to align with the objectives of Government. This underscores Moyo and When’s (2017) sentiment that water boards are bound to the goals and vision of the ruling party, and shows participants awareness of the interconnectedness of external stakeholders to the management of strategy at the water board.

Due to the water board’s size, each portfolio, department, and division needs to ensure that they align their business plans to the overall organisational strategies, vision, mission, values and objectives of the water board, and that this is translated into realistic, workable and relevant Key Performance Areas. This seems in line with the views of Easterling (2016), who purports that successful strategy implementation requires strategy to be operationalised in terms of function, activities and performance measures for employees. Again, participants noted that only certain people had the opportunity to contribute to strategy during the development phase, which is disconcerting. This will be discussed further under Theme III.

Certain participants mentioned that due to strategy implementation being the concern of all employees, everybody needs to know, understand and buy into the strategy for it to work. However, this does not seem to be the case at the water board. Chroust (2014) mentions that leaders and managers play a substantial role in identifying the necessary implementation process, as they have influence on various strategic drivers that assist organisational performance, and it is therefore crucial for all concerned at the water board to break down silos that exist to work together in order to improve alignment between strategy development and strategy implementation.

The excerpts contained below are from the interviews support the findings presented above:

Participant 2: *“The Chief Executive, the strategy portfolio, the Portfolio Integrating Committee (PIC), General Managers (GM), planning crew and staff reporting to the GM’s. The PIC sets the mode of what is critical in a particular year and then the strategy portfolio will take it to a lower level for inputs and implementation as pillars and targets for the financial year.”*

Participant 7: *“Yes, we have the Group Strategy Portfolio comprising corporate planning, corporate research and development and financial and economic planning.”*

Participant 9: *“My involvement is in terms of developing strategies at a departmental, division level that supports the corporate strategy. In addition, I am involved in the implementing of these strategies to support the corporate strategy.”*

5.3. Theme 3: Challenges experienced with strategy implementation

Respondents delved deeply into the implementation challenges experienced at the water board, and many challenges emerged, indicating that this is an area of concern for respondents and that many of the things that go wrong in the water board seem to be attributable to strategy implementation issues.

All 16 participants eluded to numerous and immense internal challenges to strategy implementation faced by the water board. Resistance to change, lack of commitment to change, and lack of flexibility to respond to changes presented a huge challenge. Many participants have been employed by the water board for more than 15 years, and openly resist change. This not only hinders strategy implementation, but also created friction with others who are more open to change. Kloppenborg, et al., (2014) also found that the fears and concerns associated with a change event, such as the implementation of a new strategy, stem from the associated disruption that accompanies change. Also, many participants noted that a lack of skill and/or capacity to implement the developed strategy properly was a growing concern. This is indicative of a growing gap between requisite and current managerial capacity and skill levels at the water board, despite efforts to develop skills and capabilities of staff members. Mvulirwenande, et al., (2013) attest that deficiency of knowledge and capacity has been noted as one of the main challenges facing the implementation of water sector related strategies and policies.

Those research participants occupying managerial positions mentioned that insufficient communication was forthcoming regarding strategy from local and provincial government, and the Department of Water and Sanitation, which has resulted in confusion and a lack of understanding of what is expected from, and by, governmental bodies. This creates the impression that the water board's management are incompetent and unable to provide clear direction for employees to understand what is expected. It was stressed that this has resulted in costly mistakes and inefficiencies. Communication has been cited as essential for the success of strategy implementation (Heracleous & Werres, 2016; Cândido & Santos, 2019), as without open, transparent, two-way communication, the successful roll-out of any strategy is seriously impeded. Those in managerial positions also noted a lack of support for strategy implementation initiatives, which is symptomatic of a lack of buy-in to the water boards' strategy, as noted under Theme II. Inadequate performance measure and incentives were also mentioned as factors that inhibited support of the strategy at the water board. The adequacy of existing performance were questioned, as they were not linked to KPA's. Participants felt better performance measures could help create support for strategy implementation initiatives, which is a view that is also imminent in literature (Ho, Wu & Wu, 2014; Cândido & Santos, 2019).

On an organisational level, participants commented that the water board's preparedness for strategy implementation is hampered by a lack of resources, a lack of infrastructure, insufficient budgets and financial constraints, supply chain issues, and the availability of materials. Many of these issues are also cited in literature (Ruiters & Matji, 2015; Cândido & Santos, 2019), purporting that many of the challenges experienced at water institutions are attributed to insufficient investments, uncompromising government fiscal policies, high budget deficits, and a shortage of debt reduction strategies in the public sector, all of which have a direct effect on infrastructure development and strategy implementation. Participants also mentioned that the organisational culture seems not to be aligned with the strategy the water board is pursuing, with divisions working in 'silos', and much bureaucracy in approvals processes. This is consistent with Heracleous and Werres (2016) conclusion that strategy implementation is dependent on a conducive and supportive organisational culture and climate. An interesting observation was made about a COO who left the employ of the water board. This person was seen as pivotal to strategy implementation, and their departure left a definite void, underscoring the view that strategy implementation is often hampered by key people leaving the organisation (Heracleous & Werres, 2016).

Participants mentioned that the misalignment between strategy formulation and strategy implementation across different portfolios and divisions leads to functional objectives which yield results that do not link up with the overall strategic plan of the water board. This creates the impression that departments, divisions and portfolios are not working together and that no synergy

exists in support of one another when it comes to strategy both strategy formulation and implementation. All participants commented on a lack of feedback on implementation progress, stating that the only feedback received was when goals were not achieved, or if stakeholders were not aware of the consequences of not achieving goals. This is consistent with views in literature that insufficient feedback is a challenge to strategy implementation (Kloppenborg, et al., 2014; Heracleous and Werres, 2016),

Challenges emanating from outside the water board impacting on strategy implementation were also mentioned by the research participants. Due to the nature of its business as a water board, this particular water board is accountable to various stakeholders, and its strategic plans have to align to the agenda of the government. Trying to align to government often results in many of the water board's intended plans having to be abandoned (Moyo & When, 2017). Factors such as economic indicators, volatile exchange rates, political uncertainty, changing legislation, and Covid-19, forced a rethink of the strategic plans and reallocation of resources, as the water board considered its' role in stabilising the economy without compromising the integrity of existing business and meeting demand, a sentiment echoed in literature (Kapangaziwiri, 2018), as constant external changes in the South African water sector necessitated role players to adapt their strategies and implementation processes.

The table below contains quotations from the interviews in support of the findings presented above:

<p>Participant 7: <i>“In my opinion, the organisation is utilising sound management systems and processes in the development of the strategy and for it to transcend into implementation thereof. However, there may be room for improvement in monitoring and evaluating how effective the alignment and cascading of the corporate strategy is in an organisation that is divided into various portfolios and divisions.”</i></p>
<p>Participant 8: <i>“...the gaps possibly occur because as a water institution we are an essential service and thus answerable to our shareholder which is the water ministry now known as The Department of Human Settlements, Water and Sanitation. Therefore, the strategic plan has to be aligned with the vision, as set out by the government. In attempting to align to government quite often the operational plans become secondary.”</i></p>
<p>Participant 1: <i>“Another challenge I believe there is, is with regards to feedback loops. There must be well established committees tracking progress, providing direction and guidance, as well as approvals.”</i></p>
<p>Participant 6: <i>“As mentioned earlier, we have brilliant strategies but the environment and culture we operate in, is not conducive to its application.”</i></p>

5.4. Theme 4: Key success factors that contribute to the organisation's strategy implementation success

Participants tended to reflect on what should be done to improve efficiency and overall success of strategy implementation initiatives. These views can be translated into key success factors needed to successfully implement the water board's strategy.

Communicating the strategy effectively stood out as the most pertinent issue for participants. Not only should this communication be regular and transparent, but should also be inclusive of internal and external stakeholders. Transparent and effective communication with internal and external stakeholders is also cited in literature as essential to implement strategy successfully (Engert & Baumgartner, 2016; Jaoua, 2018). Effective change management was also mentioned as a key issue in order to react quickly to unexpected events and to be flexible enough to respond to changing demands of government. Participants mentioned, *inter alia*, that change management should focus on understanding the strategic intent of the water board, expectations of key role players and processes. It is felt that this would go far in reducing resistance to strategy implementation initiatives, as also cited in literature (Misankova & Kocisova, 2014; Jaoua, 2018).

Research participants also felt a key issue in the overall strategic management of the water board was appointing competent people in key positions with the requisite skills and experience of the water

sector, as confirmed by literature (Engert & Baumgartner, 2016; Bounds, et al., 2018) that having the right people with the necessary skills in key positions helps in achieving organisations' strategic intent. Another important issue mentioned by research participants was visible leadership and management support, stressing the value of managers who lead from the front by being visible and exemplary. This not only helps eliminate any uncertainties that might exist of what is expected, but it also helps create buy-in, which is also mentioned in literature (Simas, et al., 2013; Engert & Baumgartner, 2016).

Some participants mentioned rewards and incentives for staff to achieve set objectives as a key issue, which need to be coupled to clear implementation plans, linked to clearly defined KPA's. This reflects views in literature (Bounds, et al., 2018; Engert & Baumgartner, 2016) that incentives linked to clear performance indicators can improve employee motivation, which in turn contributes in achieving organisational objectives. Furthermore, greater employee involvement in the strategic management process was also noted as a key issue by research participants, as it will create greater buy-in, improve understanding of the strategic direction, and will provide employees with a sense of ownership. This is consistent with the views of Misankova and Kocisova (2014), and Birkinshaw, (2017).

The table below contains excerpts from the interviews in support of the claims made above:

<p>Participant 5: <i>"I would say a good clearly communicated strategy with enough resources to implement the strategy. In addition to this a clear framework to allow for alignment of the implementation plans with clear accountability and key performance area and indicators and also constant monitoring and evaluation of the latter is important."</i></p>
<p>Participant 10: <i>"...leadership and management support, participation and application, competent and professional staff to execute the strategic objectives, an enabling culture and also incentives and rewards for staff."</i></p>
<p>Participant 11: <i>"One of the key success factors that our organisation is successfully maintaining or improving through implementing its strategy is attracting, developing and retaining leading edge skills in water services."</i></p>

5.5. Theme 5: Suggestions to overcome strategy implementation challenges

Interviews tended to veer toward participants suggesting solutions to challenges faced by the water board, forming the basis of this theme. Most pertinent for participants was a need to conduct critical reviews of implementation progress, identifying implementation risks and developing measures to mitigate these risks at departmental and divisional level. Adversely, some participants suggested more proactive approaches, such as pilot projects before rolling out projects and strategies, or root cause analysis of all the business process barriers.

Some participants suggested the removal of bureaucratic processes and empowering divisions with more accountability, which overlaps with other participants desire to promote a culture of inclusivity for strategy development at all levels of management. It is hoped that this would increase buy in, commitment, and understanding of the strategic process.

Participants felt a need for feedback sessions to not only share results, progress, and post implementation lessons, but also to address questions and queries are addressed. The information forthcoming at such sessions can also be used as input for future planning. The need for feedback was expressed differently by some participants, expressing a need for communication in the form of roadshows to disseminate information regarding the water board's strategy, as well as training and education initiatives to empower employees to understand the strategy.

Some participants also suggested aligning organisational structure to strategy with policies and processes to govern and integrate the development of the strategic plans across the water board, with clear accountability and KPAs.

The table below contains excerpts extracted from interviews in support of the claims presented above:

Participant 3: <i>“A solution I would recommend is to promote a culture of inclusivity for strategy formulation that includes all levels of management. Another solution is to measure KPI’s and communicate results clearly, as well as reasons for not achieving goals.”</i>
Participant 8: <i>“I believe that one of the key challenges is people. In this regard, a route to take is to train, educate, equip and empower employees to feel confident when it comes to implementation of the strategy.”</i>
Participant 13: <i>“I would say, critically appraise the direction of the organisation. Leadership skills should be evaluated. Communication should be directed to all staff. There should be buy in and also staff should feel part of the process and the organisation. Also, measurable and objectives must be constantly monitored with corrective actions where needed.”</i>

6. Main conclusions resultant from the study

Emergent from the findings it is apparent that, however obvious it might seem, it must be emphasised that strategy development and strategy implementation are interconnected parts of a holistic, strategic management process. The importance of strategy, and the management thereof, needs to be emphasised at all levels of the water board, and to all stakeholders, in order to create greater understanding and buy in to the process, and in order to foster greater cohesion in working toward a common goal.

It is also apparent that the water board is experiencing a multitude of challenges in strategy implementation, including resistance to change, lack of direction and a clearly articulated implementation plan, lack of understanding of the strategy, as well as ill-defined roles, responsibilities, and expectations of staff responsible for implementation. There are not enough resources required, including employees with the necessary skills, to effectively implement strategy in the water board. There is also little or fragmented ownership and accountability for the water board’s strategy amongst those involved, and infrequent as well as ineffective communication regarding strategy development and implementation, which creates confusion. Insufficient feedback exists regarding implementation progress and achievements. All of this contributes to a pervasiveness of failure and results in costly mistakes and errors.

The impact of economic, political, and social forces requires a rethink of the water board’s overall strategy. As the water board is a parastatal institution, it is regarded an essential service and is answerable to public sector stakeholders such as National Treasury and The Department of Human Settlements, Water and Sanitation, which presents various challenges in itself. The bureaucracy, restrictive controls and regulations, and codes of practice reduces the water board’s autonomy and freedom to innovate.

At the end of the day, this case study seems to be an exemplary case of how strategy should not be implemented, as all challenges that could negatively impact an organisation as far as strategy implementation issues are concerned, seem to befall this particular water board. However, in the final analysis, an overall lack of direction seems to be at the heart of all these challenges the water board is facing. This lack of direction is mainly due to constant interference by governmental bodies, who themselves lack clear direction and focus. Unfortunately, as the findings have shown, the interests of the ruling party enjoy preference, and in so doing, the interests of stakeholders are not prioritised accordingly and the water board could run the risk of not fulfilling its basic mandate in future.

7. Recommendations and managerial implications

The water board needs to carefully and regularly assess its environment to fully understand the challenges they are faced with regarding strategy implementation. This should include an analysis of key success factors required to implement strategy effectively, and in-depth analysis of the solutions that need to be developed to overcome these challenges and ultimately achieve the water board’s mandate.

To successfully implement the water board's strategy and achieve its mandate, it is pivotal that an innovative culture is created and embedded, as such a culture will most likely foster more frequent and more effective communication with employees. It is hoped that this will translate into greater inclusivity regarding strategy development and implementation processes, which will nurture buy in. It is also vital for managers and employees to understand the interdependence between strategy development and implementation, and to understand the constant 'back and forth' between them, so that corrective action can be taken to ensure effective strategy implementation in the attainment of the water boards' goals.

All stakeholders have to work together and create synergy and alignment between strategy development and implementation in their respective areas. An emphasis on monitoring, evaluation and feedback is also essential, as it helps in understanding the progress of each process, in ensuring continuous improvement, and in assisting ineffective change management. It is crucial to continually attract, develop, upskill and retain employees with the necessary skills required to effectively implement the organisation's strategy. Having the right people with the right skills makes it easier for any organisation to work towards achieving its strategic intent.

8. Limitations of the study and avenues for future research

Although a single case study allows for detailed, in-depth understanding of a particular phenomenon, it is somewhat limited, and a fuller picture of strategy implementation across the entire South African water sector could be more insightful. For this, either more single case studies have to be embarked upon, or multiple case study research could be undertaken.

9. Concluding remarks

This study has provided evidence of strategy implementation challenges at a South African water board. It is clear that there are numerous problems at this water board, to the extent that this case can be seen as archetypal of how *not* to implement strategy. The disconcerting reality, however, is twofold. Firstly, that such challenges are actually quite commonplace, which is exactly why strategy implementation presents such a problem for organisations. Secondly, and more disconcerting, is the fact that this is the situation at a water board, who are tasked with providing water and sanitation to the citizens of the country. With electricity provision already being in such a state of ill-repair, South Africa cannot afford water provision to also teeter on the brink of disaster, as this will surely result in South Africa being a failed state.

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An Assessment Of The Relationship Between Entrepreneurial Orientation And Business Performance In Small Businesses In Selected Townships

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Keywords

Entrepreneurship,
Entrepreneurial
Orientation, Business
Success

Abstract

This study aimed to explore Entrepreneurial Orientation (EO) and business success in township-based small businesses. This study was administered through a survey to a target population of 100 small businesses. From the 100 questionnaires distributed electronically via email and WhatsApp, only 79 responses were received back, and statistical analysis was conducted. The survey reliability was tested and calculated using Cronbach Alpha Coefficients for all entrepreneurial orientation and business success variables. The standard deviations and the mean of individual responses for all the variables were calculated from the evidence. The information obtained from the survey was used in decision-making and in making recommendations. The study concluded with suggestions concerning future research and achieving the objectives.

1. Introduction

Amidst the initial business period, an entrepreneur should have specific characteristics that may comprise the will to act and bring out innovativeness (Littunen, 2000:20). Entrepreneurial orientation (EO) is a firm strategy. It relates to simple practices and policies enhancing entrepreneurial actions to create a competitive environment (Martens, Machado, Martens & Freight, 2017:255). It is important to note and understand that the dimensions of EO, which are innovativeness, risk-taking, pro-activeness, autonomy and competitive aggressiveness, can impact business performance and assist firms in gaining competitiveness (Martens *et al.*, 2017:255).

Entrepreneurial orientation dimensions are a crucial matter, as Lumpkin and Dess (1996:135) argued, stating that not all dimensions of EO will impact the business performance positively or directly under circumstances that are not similar. In agreement, Kraus, Rigtering, Hughes and Hosman (2011:166) state that EO dimensions should be evaluated separately. In addition, Lumpkin and Dess (1996:135) stated that EO variables might differ, and not all variables may contribute to business performance significantly.

The steady increase of small businesses has contributed to stable economic growth and stimulation of national development of most economies around the continent (Soiminen, Martikainen, Puumalainen & Kylaheiko, 2011:274). Jasra, Muhammad, Ahmed, Rana, and Raf (2011:274) add that most governments around the globe have realised the benefits of small businesses to their gross domestic product (GDP). Poverty reduction through creating jobs is one of the most critical roles of small businesses (Fatoki & Asah, 2011:170).

The study aimed to assess the level of entrepreneurial orientation and its impact on the business performance of township-based small and medium-sized businesses. According to The National Small Business Act (102 of 1996), a business is small if it has less than 50 employees, an annual profit of below R25 million and a total gross asset of less than R4.5 million.

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2. Problem Statement

The world is rapidly changing, and because of these changes, non-entrepreneurial organisations are faced with the risk of becoming obsolete. Many researchers continue to seek solutions regarding the factors that directly influence business performance (Ndang, 2017:5).

Furthermore, Ndang (2017:5) states that scholars attempted to define these factors by looking at the effects of different aspects such as managerial competencies, educational level, company characteristics, and business environment on small business performance. The contribution made by SMEs to the South African economy is remarkable, and their high rate of failure is a call for concern (Ndang, 2017:5). The rate of the loss of South African SMMEs is approximately between 70 per cent to 80 per cent (Brink & Cant, 2010:2).

Entrepreneurial orientation significantly affects performance and small business success (Amengot, Parellada & Carbonell, 2010:379). However, their study was focused mainly on African immigrant-owned small businesses. Rua *et al.* (2018:25) add that EO impacts the performance of an organisation when organisations deliberately secure, leverage and develop resources to exploit opportunities to gain a competitive advantage. Even though SMMEs are identified as critical correspondents to the current economy, the apprehension of this prosperity in a progressively competitive environment and growth attainment remains limited (Anderson & Eshima, 2013:413). Stouraitis, Harun and Kyritsis (2017:35) agree that the factors differentiating SMME growth should be thoroughly researched.

Conclusions on the relationships of entrepreneurial orientation on business performance of small businesses are still needed, varying from a significant positive relationship to a weak relationship (Ndang, 2017:5).

Wiklund and Shepherd (1999:39) further articulate that concerning the individual variables of EO, preceding research proposes that each dimension may significantly influence performance. A gap in literature still exists concerning the assessment of entrepreneurial orientation, mainly in township-based small businesses. This absence of research in township entrepreneurship could suggest a lack of knowledge in understanding township businesses. This paper assesses EO and its contributions to business success in township-based SMMEs.

3. Objectives Of The Study

3.1 Primary objective

The primary objective of this study was to assess the relationship between entrepreneurial orientation in selected township-based small businesses and the success of those businesses.

3.2 Secondary objectives

To support the primary objective, the secondary objectives included:

- To review entrepreneurial orientation and business success.
- To assess the relationship between entrepreneurial orientation and business success in selected small businesses.
- To suggest recommendations and managerial implications from the results of the study.

4. Literature Review

Lumpkin and Dess (2005:146) state that it is a necessity for entrepreneurs that wish to sustain successful small businesses to have an entrepreneurial mindset. Moreover, regardless of their size, all firms must expand their capability to differentiate the value of new ideas, integrate them, and employ them in business opportunities (Descotes & Walliser, 2013:178). Ndang (2017:81) further articulated that the entrepreneurial orientation concept attempts to elaborate the thinking of entrepreneurs in a context where strategy development is considered a central factor of economic operation. However, Venter (2013:12) states that researchers have not agreed on a uniform definition of an

entrepreneurially orientated firm. This may have resulted from the idea of positioning towards entrepreneurial activity has owned many names in preceding research (Covin & Wales, 2012:678).

Edmund and Wiklund (2010:143) argue regarding the entrepreneurial orientation dissimilarity as to whether the new aspects previously developed by Lumpkin and Dess (1996) should be considered together with the three main dimensions. Two new dimensions, autonomy and competitive aggressiveness were added to the previously existing dimensions: risk-taking, innovativeness, and pro-activeness (Lumpkin and Dess, 1996:136). However, the two new dimensions received criticism, particularly competitive aggressiveness, as it was said to fall outside the scope of the entrepreneurship realm (Venter, 2013:14). Edmond and Wiklund (2010:145) add that other EO dimensions have been challenged as well. Experts believe that autonomy is more relevant to the individual than to an organisation and is a precursor of an entrepreneurial orientation.

George (2011:1292) states that an area of perturbing for entrepreneurial orientation is whether its dimensions are independent or dependent and if they could be suitably tested against firm performance. Covin and Slevin (1989) worked on the concept of entrepreneurial orientation. They treated the dimensions as one-dimensional, and their findings indicated a strong positive relationship between entrepreneurial orientation and firm performance. Kwak, Jaju, Ruzakova and Rocereto (2013:143) later argued that their research showed that entrepreneurial orientation dimensions should be treated as a multi-dimensional concept instead. In this way, individual dimensions should be individually tested against firm performance. In agreement, Runyan, Ge, Dong and Swinney (2012:820) posit that researchers who deliberated on entrepreneurial orientation as a unidimensional, bi-dimensional and multi-dimensional phenomenon found a strong base on the multi-dimensional analyses process. Similarly, Vij and Bedi (2012:12) add that each of EO's sub-dimensions may have a different relationship with performance. A unified and sound methodology is yet to be absorbed to measure entrepreneurial orientation, so long these dissimilarities have led to various inconsistent findings (Rauch *et al.* 2009:763).

4.1 Dependent Variable

Many ways measure and define business performance depending on the purpose (Cho & Lee, 2018:128). South Africa is one of the emerging countries, and the main objectives are continuous development, which may be attained through constant innovation and entrepreneurial orientation (Urban, 2016). Urban and Verachia (2019:140) state that research in Africa holistically may be deemed highly valuable. Only a handful of studies have been conducted in the past which focused on the relationship between EO, business performance, and organisational performance antecedents. Business performance may be categorised into two categories, namely, financial and non-financial business performance (Cho & Lee, 2018:128). The authors add that financial measures are centred around short-term goals, and non-financial measures relate to long-term goals and growth potential.

Verheul, Thurik, Hessels and Van der Zwan state that for small businesses to achieve high performance, the business has to apply an entrepreneurial strategy which means having an entrepreneurially inclined mindset. Furthermore, this implementation process exists within small businesses participating in the market or product innovation, proactively tackling risk (Fatoki, 2012:122). Small businesses with a high level of EO should present high performance instead of those with a low inclination towards EO (Gruman & Saks, 2010:124).

A study previously conducted by Urban and Verachia (2019) on organisational antecedents of innovative firms in the African context revealed that the antecedents of the support from management, rewards and reinforcement notably influence entrepreneurial orientation, which in turn has a strong influence on firm performance (Urban & Verachia, 2019:140). Similarly, Hornsby, Kuratko and Zara (2002:254) conducted a similar study in the USA and Canada, and they concluded that support from management was indeed the most crucial factor in entrepreneurial orientation. Furthermore, the study's findings follow previously conducted research where entrepreneurial orientation dimensions are associated with high firm performance. According to Urban and Verachia (2019:141), innovation is more inclined towards high firm performance and often performs well when entering an unstable

market environment. These unstable market environments ignite demand for innovative gestures, resulting in higher firm performance. Research on 132 Swedish organisations revealed that EO influenced business performance for three consecutive years (Wiklund,1999:38).

In their study, Cho and Lee (2018:132) concluded that continuous innovation affected non-financial business performance and that risk-taking proclivity had no influence on financial and non-financial business performance.

A study by Campos, Acuna, Parra and Valenzuela (2013:16) pointed out that innovativeness is not necessary to maintain competitiveness regarding entrepreneurial orientation. In their research, entrepreneurial orientation only accounted for approximately 16 per cent of the firm's performance. Li *et al.* (2009:443) stress that a merger of financial and non-financial factors may result in a more holistic assessment of an organisation. Rodriguez-Gutierrez (2015:156) suggests that performance may be assessed by evaluating customer loyalty, employee satisfaction, brand equity and customer satisfaction. For firms to add value to their businesses and improve their planning in a dynamic economy, entrepreneurial orientation needs to be converted into practical and workable strategies (Ndang, 2017:71).

However, Hughe and Morgan (2007:652) posit that the impact of the dimensions of EO being competitively aggressive and contributing to firm performance is still questionable.

For this paper, the dependent variable Business Performance consisting of two variables, business growth and business development and improvement, will be assessed using all five entrepreneurial orientation dimensions: innovativeness, autonomy, risk-taking, pro-activeness and competitive aggressiveness.

Figure 1 displays the dimensions of entrepreneurial orientation (*Autonomy, Innovativeness, Risk-taking, Pro-activeness* and *Competitive aggressiveness*) hypothesised as influencing the dependent variable, *Perceived business success*. The dependent variable, *Perceived business success*, for the purpose of this study, has been measured by two variables, *Business growth* and *Business development and improvement*.

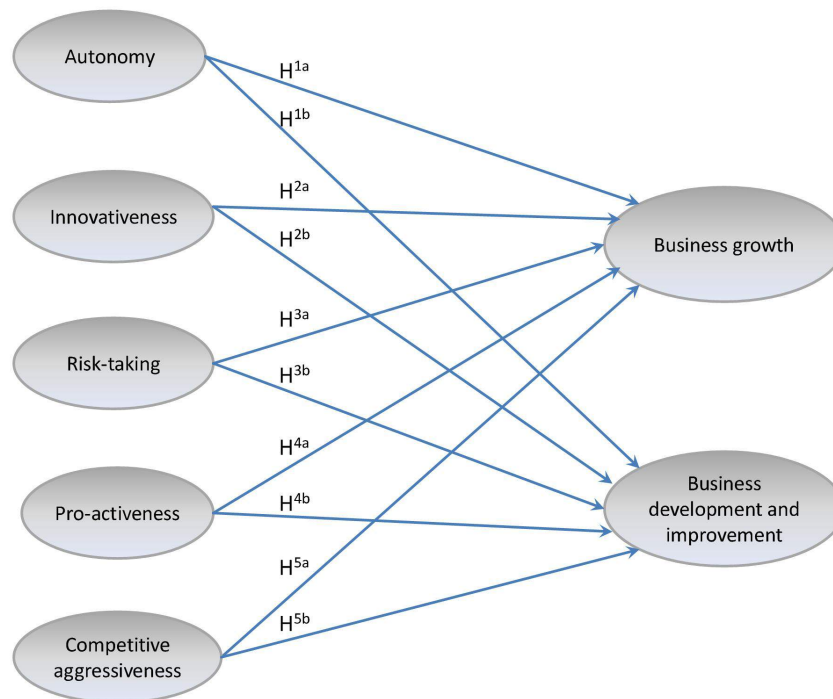


Figure 1: The theoretical model

4.2 Independent variables

Autonomy

Lumpkin and Dess (2001:431) defined autonomy as a self-sufficient measure taken by teams or individuals to bring forth a business vision and ensure its success. Within the entrepreneurial orientation realm, autonomy refers to one's ability to make autonomous and independent decisions based on thinking or reasoning (Venter, 2013:17).

By applying the term to the firm's context, autonomy refers to measures taken independently to suffocate the firm's restrictions (Lumpkin & Dess, 1996:140). This concerns the self-directed and independent pursuit of new opportunities through empowerment and motivation of individuals to uphold and contribute to business endeavours by promoting initiative development and independent action (Lumpkin *et al.*, 2010:251).

Quinn and Spreitzer (1997:38) indicate that, historically, entrepreneurship started as a result of individuals seeking the opportunity to exit the world of work and become independent through the initiation of their ventures, thus portraying some level of autonomy. As Janz and Prasarnphanich (2005:4) described, autonomy is the degree to which one person or several people have the privilege and choice of deciding what measures are needed and how to fulfil them better. Krauss, Frese, Frederich and Unger (2005:320) posit that autonomy orientation suggests that business owners appreciate making their own decisions and do not like getting orders. For a successful drive of entrepreneurial behaviour in an organisation, autonomy must be incorporated into everyday business operations because it drives an environment of intrapreneurship (Houh & Scheepers, 2008:20).

Autonomy does not only apply to those in a firm setting but may also include all stakeholders (Zellweger, Nason, Nordqvist, 2011:138). Lumpkin *et al.* (2009:47) argue that autonomy is a notable constituent of entrepreneurial orientation as it offers members of its organisation independence and flexibility to grow and act in entrepreneurial activities. Moreover, autonomy gives employees power as far as trust is concerned, motivating them (Ndang, 2017:69).

Furthermore, when employees are encouraged, they tend to perform better (Ndang, 2017:87). Lee and Peterson (2000:406) emphasise autonomy's importance by stating that independence and freedom are

catalysts in driving entrepreneurial activity and are necessary to create new ventures. Venter (2013:28) adds that entrepreneurial behaviour usually emanates from strategic leadership, thus making it critical for firms to support and evolve entrepreneurial orientation.

Autonomy gives individuals the independence and freedom to make critical decisions, develop new ideas, and effectively implement those ideas (Ndang, 2017:69).

For autonomy to function fully, inducement programmes are necessary for rewarding self-sufficient thoughts and autonomous decision-making (Chen & Sengupta, 2014:1091). Lotz and Van der Merwe (2013:18) state that the bottom-up and top-down management concepts should be applied to establish autonomy in business. Spies (2014:24) adds that firms use bottom-up and top-down management concepts to support autonomy. The top-down approach is a typical well-known organisational structure that hinders the initiation of autonomy (Kuratko, Hornsby & Ireland, 2001:61).

Many top managers and owners of businesses have conflicting views on which method better the possibility of introducing autonomy in an organisation (Quinn & Spreitzer, 1997:40). Lumpkin *et al.* (2009:49) state that strategies driving the bottom-up approach require special inducement and a supportive business structure.

Businesses must initiate autonomy and support their habits (Mumford, Scott, Gaddis & Stange, 2002:742). Dess and Lumpkin (2005:149) suggest that entrepreneurial thoughts in a business may be prompted by either the top-down or bottom-up management style. However, extra inducement should be for unique ideas because many best ideas come from the bottom in a business setting. Venter (2013:17) adds that organisations need to understand both these approaches, which may be used to identify the required actions to execute autonomy within a firm. Structural changes only form changes in the hierarchy, be it flattening it or authority delegation may not be adequate (Lotz, 2009:47). Dess and Lumpkin (2005:150) believe that autonomy should continuously be monitored and measured. A balance should exist between giving rise to autonomy and having a structure in place. To stop unsuccessful initiatives, these initiatives should be attempted to gain a sustainable competitive advantage (Spies, 2014:25).

The above research already indicates that there is to some extent a relationship between entrepreneurial orientation and perceived business success. It is therefore hypothesised that:

- H^{1a}: There is a significant relationship between *Autonomy* in the business environment and *Business growth* in the participating small businesses
- H^{1b}: There is a significant relationship between *Autonomy* in the business environment and *Business development and improvement* in the participating small businesses

Innovativeness

According to Antonites and Van Vuuren (2005:257), innovation refers to the actual execution of the notion to ensure the attainment of the set objectives of a business, profits are achieved, and the idea should be aligned with the concept of an identified market opportunity. In agreement, Lumpkin, Brigham and Moss (2010:247) state that innovativeness indicates an organisation's endeavours in finding new services and products in commercial markets while amplifying the existing systems and processes. Thereby, the quality of being original is sustained and ongoing problem solving through creative thinking and experimentation. Top management needs to facilitate experiments, risk management initiatives and encourage innovative gestures through systems and processes, indistinguishable at individual and team levels (Lumpkin, Cogliser & Schneider, 2009:49).

Venter (2013:29) emphasises the importance of innovation as an element and should be embraced by firms to intensify the firm's capabilities of realising improved performance over a long period. Bruderl and Preisendorfer (2000:46) affirm that innovation is a critical element that may lead to continued growth.

Innovation may not only be restricted to designing and creating a new product or enhancing what already exists. Innovation can also be considered a solution in administrative systems applied in decision-making (Li, Huang & Tsai, 2009:443). Similarly, Tayauova (2011:572) suggest that the approval of new ideas and the deviation from old and traditional practices could give rise to the recent propensity of a process of operation. Innovativeness usually carries considerable costs, which may decrease performance measures over the short term (Hughes and Morgan, 2000:653). However, innovation permits small businesses to grow in a monopolistic position which helps them improve business performance, so funding this innovative pursuit requires financial resources and an excellent economic history (Forseman & Temel, 2011:641).

According to Ndang (2017:63), innovation can be grouped into three main classes: product-market innovation perception, which requires marketing research, advertisement and promotion, and product design. Organisational innovativeness consists of a structural organisation, an innovative management style, and an innovative control system (Potocan & Mulej, 2009:4). A technology innovation perspective mainly comprises research and engineering inputs in developing new products or processes (Ndang, 2017:63). Entrepreneurial orientation can initiate change through the innovativeness of people who can come up with value-adding products. Xaba and Malidi (2010:77) add that the ability of the business to combine resources will determine this value addition. Resources are critical if businesses' intention is to thrive (Botha & Nyanjom, 2011:35).

Lumpkin *et al.* (2010:247) articulate that innovativeness is necessary for maintaining a firm's success. It is a crucial driver of new idea development, leading to new product introduction, service improvements, and managerial initiatives that aid company growth. Innovation quickly became necessary in the changing business environment due to shifting customer needs, product service, and technology. The competitive state of the firms is extremely vigorous (Kropp, Lindsay & Shoham, 2008:104).

Based on this background, the following hypotheses were formulated:

- H^{2a}: There is a significant relationship between the implementation of Innovativeness in the business environment and Business growth in the participating small businesses
- H^{2b}: There is a significant relationship between the implementation of Innovativeness in the business environment and Business development and improvement in the participating small businesses

Risk-taking

In the context of EO, taking a risk can be defined as activities that require taking courageous measures, such as stepping out of comfort zone and pursuing new ventures while acquiring significant amounts of funds or allocating necessary firm resources to ventures in environments of uncertainty (Vij & Bedi, 2012:21, Rauch *et al.*, 2009:763). Similarly, Lumpkin and Dess (2001:431) further elaborated on risk-taking as the likelihood of an organisation making brave decisions, such as taking on new markets and making commitments by investing large portions of the resources in ventures of uncertainty and borrowing large amounts of capital. Risk is the unpredictability of a decision, or whether it will be notable or disheartening when the idea comes to realisation (Dewett, 2004:258).

According to Morris *et al.* (2008:620), high risk is indirectly proportional to high entrepreneurial activity, and however, it is an instance of arbitrating the risk through a structured approach. Entrepreneurially orientated firms in the market are categorised by their risk-taking ability (Wang, Hermens, Huang & Chelliah, 2015:73). Furthermore, Tang, Tang and Katz (2013:1) found that entrepreneurial firms that practice risk-taking experience growth positively in the business. Also, Hoonsopon and Ruerom (2012:252) assert that risk-taking is a critical factor that prompts innovative measures to initiate growth and small business performance.

Risks should be manageable to control new products and resource development (Chang, 2015:3). Vij and Bedi (2012:21) add that risk management concerns the firms' actions to analyse, identify,

alleviate, and avert problems that could negatively affect the business status. SMMEs need to take more calculated and manageable risks to fully utilise their innovative and proactive abilities (Keith *et al.*, 2015:1166). Al-Swidi and Mamhood (2011:31) assert that when small businesses use their abilities, they become more inclined to entrepreneurial orientation, taking calculated risks with a higher potential of success during operation. Entebang, Harison and Cyril de Run (2010:76) are of the view that for small businesses to adopt the growth strategy as a way of doing business, they may follow risk-taking by venturing into unknown new activities (business risk); or investing their financial resources (financial risk) or taking a stand in favour of action (personal risk). Dess and Lumpkin (2005:152) warn that only careful management of risk can probably lead to a high competitive advantage. Actions taken without ample research, care, and thorough planning may cost the business.

Against this background, the following hypothesis is subjected to further testing:

- H^{3a}: There is a significant relationship between the practice of Risk-taking in the business environment and Business growth in the participating small businesses
- H^{3b}: There is a significant relationship between the practice of Risk-taking in the business environment and Business development and improvement in the participating small businesses

Pro-activeness

Short, Payne, Brigham, Lumpkin and Broberg (2009:14) state that pro-activeness is successfully crafting a business's strategic vision to seek different growth opportunities. Rauch *et al.* (2009:763) explained that pro-activeness is an opportunity to pursue a progressive perspective characterised by initiating products and services before the competitors and predicting demand for the future. Madsen (2007:187) agrees that pro-activeness anticipates future needs and wants in the market environment. When a firm is proactive, it seeks new ventures while taking advantage of the existing ones, while at the same time updating and tracking itself about different market changes in the business sector.

An organisation creates a competitive advantage by anticipating fluctuations in future demand, by changing the market by not becoming a nonparticipating observer or giving in to external pressures, but by being a diligent contributor in building their market environment (Kraus, Rigtering, Hughes & Hoseman, 2012:166). Lumpkin and Dess (1996:142) assert that despite an ongoing debate about which approach appears to be more successful, both methods carry their benefits concerning the fast follower and the first-to-market approaches. Sharma and Davi (2011:47) view that pro-activeness is limited to acting but anticipating customer expectations in the future and looking for new products well ahead of their competitors, which may or may not be related to the current business.

Pro-activeness also involves maintaining the lead over competitors by anticipating new issues or opportunities. Furthermore, pro-activeness recognises the importance of strategy in the entrepreneurial process (Ndang, 2017:65). Pro-activeness pivots on the firm's ability to continuously assess the marketplace, as demonstrated in 1) aggressive behaviour aimed at rival firms and 2) Pursuing organisational opportunities favourable to the business (Vij & Bedi, 2012:20).

A proactive attitude can ignite the entrepreneur's innovativeness since small businesses with such an orientation typically want to meet their customer's needs in a marketplace (Oni, 2012:94). Also, Alt, Diez-de-Castro and Llorens-Montes (2015:168) assert that this can magnify the identification and growth of the existing product and services related to the business. Ndang (2017:66) states that proactive firms can forecast trends and customer needs. Keith, Nakos and Dimitratos (2015:1165) add that these kinds of firms are in a quest for better ways to compete successfully and stay ahead of their competitors.

Advantages of pro-activeness are acquired by first-movers when new opportunities are identified and implemented while assuming the responsibility of the idea and ensuring its success (Wiklund & Shepherd, 2005:82). Kreiser, Marino, Dickson and Weaver (2010:960) hold that pro-activeness is

not a concept as simple as it is made to be. They state that the firm's capability to be proactive is usually influenced by societal and cultural characteristics among employees. Willingness to engage will always be welcomed by uncertain welcoming societies, while certainty-avoiding organisations reject engagement (Kreiser *et al.*, 2010:960). Gurbuz and Aykol (2009:323) summarised pro-activeness as a business owner who is more a figurehead than an acolyte. Spies (2014:30) add that these business owners plan to identify new opportunities even if they are not the first to move on it.

Against this background, the following hypothesis is subjected to further testing:

- H^{3a}: There is a significant relationship between the practice of Risk-taking in the business environment and Business growth in the participating small businesses
- H^{3b}: There is a significant relationship between the practice of Risk-taking in the business environment and Business *development and improvement* in the participating small businesses

Competitive aggressiveness

According to Lumpkin and Dess (2001:430), competitive aggressiveness is how firms generally respond to competition and trends. Vij and Bedi (2012:21) assert competitive aggressiveness is the firm's tendency to directly and intensely challenge its competitors while achieving entry or surpassing position. One common attribute of competitive aggressiveness is the aggressive attitude and aggressive response towards competitors to overcome the competitors' threat (Zellweger & Sieger, 2012:70).

Firms sometimes opt to be reactive, in that the business would apply price lowering strategies to challenge the competitor responsively. Blackfort (2014:143) states that businesses might begin a price reduction journey at the expense of their profit margin to gain more market share. The essence of competitive aggressiveness is no longer taking the uniform competitive pattern between firms (Ndang, 2017:68). Stambaugh, Yu and Dumbinsky (2011:51) add that businesses now lean towards unique competition techniques rather than standard techniques. In agreement, Spies (2014:30) complements that the willingness to act differently rather than following traditional competitive practices lines up with the competitive aggressiveness of the company. Lumpkin and Dess (2001:434) posit that this may pose a challenge to industry leaders through unconventional methods and strategies while exploiting competitors' weaknesses by analysing their approach and thus focusing on a value-added strategy. Although small businesses are more inclined to take risks than larger entities, entrepreneurs applying the usual traditional business technique often overlook the competitive aggressiveness aspect, which had to grow the business market through significant changes (Ndang, 2017:68).

Pro-activeness and competitive aggressiveness are usually combined as one variable (Venter, 2013:18). However, the difference with regards to pro-activeness was highlighted clearly by Lumpkin and Dess (1996:147), by stating that there exists a difference in the measures of a firm where pro-activeness aligns with the firm's response to a new idea and while competitive aggressiveness aligns with the firm's response to competitors. Small businesses need to acquire, create, integrate and retain knowledge to sustain a competitive approach (Ndang, 2017:68). Li *et al.* (2009:441) agree that employees could use the knowledge collected through knowledge retention. Keh, Nguyen and Ng (2007:596) assert that as much as learning is considered essential for business decision-making, it can be deemed worthless if not utilised properly.

It is important to note that the firm's strategy should define a company's competitive aggressiveness to perform better than its peers, not only by the marketing and operations divisions (Venter, 2013:18). Ndang (2017:68) states that information search about a market is a common practice by small businesses to compete aggressively. This early acquisition of information gives them a competitive advantage in terms of product performance or product categories in the market (Keh *et al.*, 2007:598). Furthermore, absorbing new ideas will enable the business to challenge its competitors and improve its market position.

In their study, Boso, Cadogan and Story (2012:17) found a positive relationship between firm performance and competitiveness. It is reasonable to note that firms can sometimes over or under-invest in the quest to outperform their competitors, which can lead to a damaging effect if the competitors retaliate.

Based on the literature review, the following hypotheses were formulated:

- H^{5a}: There is a significant relationship between the Competitive aggressiveness of the business and Business growth in the participating small businesses
- H^{5b}: There is a significant relationship between the Competitive aggressiveness of the business and Business development *and improvement* in the participating small businesses

5. Research Methodology

In this section, the research method will be discussed, focusing on the research method, the measuring instrument, the sample and population of the study, the data collection, and statistical analysis.

5.1 The research method

The researcher has chosen a quantitative method for this study to assess the relationship between entrepreneurial orientation and business success in selected township SMME's. Quantitative methods have generalisable results from structured information and follow the positivist approach.

5.2 Measuring instrument

There are a few methods of data collection that exist. From these methods, data collection through questionnaires, observation or interviews exists, to name a few. This study used a structured questionnaire to collect primary data. A questionnaire approach is considered the most effective and removes any possibility of the researcher influencing responses. The method also comes out to be less costly. Lotz and Van der Merwe (2013) developed a questionnaire that measures entrepreneurial orientation in a business using the five EO dimensions that may influence a business's success and performance. It is, furthermore, a cross-sectional study.

5.3 Study population and sampling

A population from a research project is a group from which the researcher chooses a sample (Kumar, 2012:194). The population target for the study consisted of small township-based businesses.

As Cooper and Schindler (2006:434) defined, sampling is the process of choosing sections within a study population, either by using a probability method, non-probability method, or combined methods to represent the targeted population in a survey. There is no database available with a list of businesses in townships. The researcher, therefore, used a convenient or purposive sample, and the snowball technique sampling was employed to conduct this research. Businesses were selected conveniently in the identified townships, and the population included product- and service-oriented businesses.

Approximately 100 small township-based businesses were approached to form part of the study to gather reliable data to realise the primary and secondary objectives. New ventures or new businesses were not part of the study due to the possibility of them not having entrepreneurial orientation history. Businesses of a year or more were considered suitable to form part of this research investigation.

5.4 Data collection

The data collection tool was distributed to the businesses of interest by personal delivery, while some were sent electronically via email. Participating businesses were assured confidentiality through a consent letter detailing the process in which data will be collected and ethical considerations of the study. Furthermore, the study only started after full ethical authorisation from the relevant ethical committee of the North-West University. Participants were given a reasonable amount of time to complete the questionnaire without help from the researcher. The hand-delivered questionnaires were handed out in an envelope, and participants were informed to put the completed questionnaires back

in the envelope and seal them. After approximately two weeks, the participants collected these envelopes, and only fully completed questionnaires were analysed for the study. Questionnaires received by email were safeguarded in a password-protected computer.

5.5 Statistical analysis

Babbie and Mouton (2001:237) state that all data gathered through research processes should be analysed and interpreted to conclude the research while achieving the study objectives.

Data collected were statistically analysed to realise the objectives of the study. The North-West University Statistical Consultation Service was approached to assist in capturing and analysing the completed questionnaires. The acquired data was then analysed using descriptive analyses, Cronbach Alfa coefficients and multiple linear regression analyses, as recommended by (Babbie, 2013:56). The presentation of the findings is through tables and graphs.

6. Results and Discussion

6.1 Biographical information results

The population is primarily characterised by the age group of **26-35** (49.4%), followed by **36-45** with 27.8% and the ages of **25 and below** with 12.7%. The age group of **46-55** followed with a percentage of 6.3%, and the smallest age group of the population was participants over the age of **55**, with a percentage of 3.8%. In addition, most respondents were females, with 50.6% and males at 49.4%. All 79 businesses that took part in this study can be referred to as small businesses with less than 200 permanent employees operating in the townships from different industries such as retail (26.6%), services (21.1%) and food (10.1%).

6.2 Reliability of the measuring instrument

Reliability refers to a study's outcomes, mainly concerned with the integrity of its findings (Welman *et al.*, 2005:145). Similarly, Zikmund (2003:11) defined reliability as the potentiality of the measure to yield constant outcomes and be free from mistakes. According to Maree (2011:215), there are different types of reliability, noted as follows: "an equivalent form of reliability, split-half reliability, internal reliability and test-retest reliability".

For this study, Cronbach's alpha coefficient was employed to measure the reliability of the questionnaire. Below are the accepted guidelines for interpreting Cronbach's alpha coefficients (Maree, 2011:212).

- "0.90 high reliability"
- "0.80 moderate reliability"
- "0.70 low reliability"

The following table represents Cronbach coefficients for entrepreneurial orientation variables and the study's perceived business success.

Table 1: Cronbach coefficients

Variable	Cronbach Coefficients
Autonomy	0.71
Innovativeness	0.90
Risk-taking	0.84
Competitive aggressiveness	0.78
Pro-activeness	0.89
Business growth	0.86
Business development and improvement	0.90

The results presented in the table above indicated that the questionnaire employed in this study to measure EO dimensions and business performance in township-based small businesses had acceptable

reliability. All the **Cronbach coefficients** were above the acceptable value of **0.7** with innovativeness and business development and improvement, with the highest coefficient of 0.90, followed by pro-activeness at 0.89.

6.3 Multiple regression analysis results

A multiple regression analysis was carried out to determine the effect of the EO dimensions (independent variables) on perceived business success (dependent variable). The respondents responded to all questions meaning no replacement values were necessary. Multiple regression results will be presented in two separate tables, with business growth and business development and improvement being the dependent variables of perceived business success.

Table 2: Multiple regression results: Impact of EO on Business growth

Model	Unstandardised Coefficients		Standardised coefficients	t-value	p-level
	B	Std. Error	Beta		
Constant	(2.755)	0.477		5.773	0.000
Autonomy	-0.360	0.165	-0.311	-2.182	0.032
Innovativeness	0.661	0.188	0.661	3.505	0.001
Risk-taking	-0.213	0.157	-0.224	-1.362	0.177
Pro-activeness	0.229	0.147	0.251	1.565	0.122
Competitive aggressiveness	-0.040	0.156	-0.257	-0.257	0.798

R square= 0.293 (p<0.05)

The results indicate that, in practice, a **significant percentage** (29.3%) of the variation in the dependent variable, *Business growth* in the participating small businesses in townships, is explained by the five entrepreneurial orientation variables, i.e. *Autonomy*, *Innovativeness*, *Risk-taking*, *Pro-activeness* and *Competitive aggressiveness*.

The multiple regression analysis indicates significant positive relationships between the independent variables *Innovativeness* ($p = 0.001$) and *Autonomy* ($p = 0.032$) and the dependent variable *Business growth*. No significant relationship emerged between the independent variables *Risk-taking* ($p = 0.177$), *Pro-activeness* ($p = 0.122$) and *Competitive Aggressiveness* ($p = 0.798$), and *Business growth*, respectively.

The hypotheses that there is a significant relationship between the independent variables *Autonomy* (H^{1a}) and *Innovativeness* (H^{2a}) and the dependent variable, *Business growth* respectively could therefore not be rejected. The hypotheses that there is a significant relationship between the independent variables *Risk-taking* (H^{3a}), *Pro-activeness* (H^{4a}) and *Competitive aggressiveness* (H^{5a}) and *Business growth* were rejected.

The table below represents the second multiple regression analysis between **EO variables** and **business development and improvement**.

Table 3: Multiple regression results: Impact of EO on business development and improvement

Model	Unstandardised Coefficients		Standardised coefficients	t-value	p-level
	B	Std. Error	Beta		
Constant	1.163	0.286		4.073	0.000
Autonomy	-0.106	0.099	-0.103	-1.078	0.285
Innovativeness	0.532	0.113	0.599	4.715	0.000
Risk-taking	-0.054	0.094	-0.064	-0.581	0.563
Pro-activeness	0.287	0.088	0.354	3.275	0.002
Competitive aggressiveness	0.058	0.093	0.064	0.622	0.536

R squared = 0.680 ($p < 0.05$)

The results indicate that, in practice, a significant percentage (68.0%) of the variation in the dependent variable, *Business development and innovation* in the participating small businesses in townships, is explained by the five entrepreneurial orientation variables, i.e. *Autonomy*, *Innovativeness*, *Risk-taking*, *Pro-activeness* and *Competitive aggressiveness*.

The multiple regression analysis indicates significant positive relationships between the independent variables *Innovativeness* ($p < 0.001$) and *Pro-activeness* ($p = 0.002$) and the dependent variable *Business development and innovation*. No significant relationship emerged between the independent variables *Autonomy* ($p = 0.285$), *Risk-taking* ($p = 0.563$) and *Competitive aggressiveness* ($p = 0.536$) and *Business development and innovation*, respectively.

The hypotheses that there is a significant relationship between the independent variables *Innovativeness* (H^{2b}) and *Pro-activeness* (H^{4b}) and the dependent variable, *Business development and innovation*, respectively could therefore not be rejected.

The hypotheses that there is a significant relationship between the independent variables *Autonomy* (H^{1b}), *Risk-taking* (H^{3b}) and *Competitive aggressiveness* (H^{5b}) and *Business development and innovation* were rejected.

7. Conclusions

The purpose of the empirical study was to determine the reliability of the measuring scales utilised in this study; to investigate the influence of an entrepreneurial orientation in small businesses on the perceived success/business performance of these businesses and, based on the findings, make recommendations to ensure the effective management of small businesses.

The results of this study suggest that the proposed instrument is reliable.

With regard to the relationships between the dependent and independent variables, the results show that small business owner-managers in the participating businesses believe that one independent variable measuring an entrepreneurial orientation, namely *Innovativeness*, influence both dependent factors measuring the perceived success of the businesses, namely *Business growth* and *Business development and improvement*.

The results also indicated positive relationships between *Autonomy* and *Business growth* and between *Pro-activeness* and *Business development and improvement*, respectively.

No significant relationships were found between *Risk-taking* and *Competitive aggressiveness* and the constructs measuring the perceived business success of the participating small businesses.

8. Managerial Implications

- Firstly, because an entrepreneurial orientation has its roots in the strategy-making process, it is recommended that entrepreneurship becomes the strategic way of thinking (dominant logic) within these businesses.
- Small businesses should actively search for innovation in the business. Innovation should, therefore, be part of the DNA of the business.
- The type of innovation, for instance process innovation, new products, services or results, should depend on the business environment in which the particular business operates.
- New opportunities and ideas, therefore, need to culminate into new products, services and processes.
- Goals and objectives need to be set for innovation.
- Small township businesses should furthermore, based on the findings of this study, should be pro-active and allow for autonomous behaviour in their businesses.
- Although no statistically significant relationships were found between *Competitive aggressiveness* and *Risk-taking Autonomy* and *Business success*, in this study, small business owner-managers should be aware of it.

9. Suggestions For Future Research

The questionnaire was distributed to only a few township-based small businesses in Gauteng. Therefore, because it was only distributed to a few businesses, it cannot accurately represent townships' entire small business sector. It is imperative not to generalise the findings of this study throughout the township's small business industry.

There is widespread agreement concerning EO dimensions and perceived success. However, the literature concerning township-based small businesses is relatively small. Therefore more comprehensive research must be done on this aspect. Data should be collected to bridge the existing gap. Future research may focus on wage distribution and turnover per business to highlight a few points.

The outcome of this study may only be referred to gain insight into the area under investigation and cannot be generalised to the entire small business sector. Small township-based businesses that choose to implement the recommendations of this study would be interesting for future research to track progress during and after the implementation process.

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Assessing Business Process Gaps Affecting Performance at a Selected South African Government Entity

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Keywords

Business processes, performance, operational gaps, Public Enterprises, Productivity SA.

Abstract

This paper reports on a study to assess business process gaps which affect the performance of public enterprises, in particular Productivity South Africa. Central to this effort was the re-examination of existing processes towards delivering more value to their customers whilst remaining cost-effective. The study utilised a mixed-methods research approach using two research instruments. A census and purposive sampling were adopted for the survey and interviews, respectively. Collected data were analysed via thematic analysis and inferential statistics. The findings revealed that the largest contributors to operational gaps were lack of planning, bottlenecks, inconsistent work levels, organisational politics, and human error. The recommendations included the need for integration of strategic objectives, improving utilisation of resources, reducing waste, implementing TQM, and motivating employees. This paper succeeds in assessing business process gaps which affect the performance of the organisation. The recommendations will assist the organisation by reducing inefficiencies caused by gaps within the process, therefore impacting organisational performance. As further research, this study could be replicated in other public enterprises.

1. Introduction

Public enterprises play a pivotal role in achieving service delivery mandates for the government, whilst still undertaking it in the most efficient and effective manner and remaining competitive. It is vital for such institutions to have their current operations evaluated, and their internal processes reviewed to ensure it remains functional. Public Enterprise's business processes have a great influence on service delivery for societal and public value creation. Thus, to ensure efficient and effective service delivery and realisation of the various organisational goals, it is imperative for Public Enterprises, like Productivity SA, to follow the various business processes as well as evaluate and monitor these existing business processes. This can be accomplished by removing non-value adding activities, or inefficiencies and wastes within the processes, thereby re-engineering processes where need be, and identifying improvement opportunities.

In February 2018, the South African President, revealed that many Public Enterprises, were experiencing severe financial, operational and governance challenges, which had impacted the performance of these entities, and the economy thereby placing pressure on the fiscus. He stated that government will take further measures to ensure that all state-owned companies fulfil their economic and developmental mandates, (South Africa, 2018).

The likes of South African Airways (SAA), who recently requested a further five-billion-rand bailout, have resulted in the country's leadership relooking at the functions, processes, governance, and viability of Public Enterprises. Whilst focusing on leadership from the Board level, operational efficiency, specifically business process efficiencies is essentially one of the largest influences on service delivery across the public sector.

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It is therefore imperative for Public Enterprises in South Africa, to re-examine their existing processes to deliver more value to the customer whilst remaining cost-effective. Therefore, Public Enterprises' current business processes must be evaluated to ascertain if these processes are efficiently and effectively meeting the entities mandate. A business process that is found to be ineffective should be strategically re-designed and re-engineered, whereas Public Enterprises decrease organisational layers and eliminate unproductive activities. Radical redesign of core business processes known as Business Process Redesign (BPR), is needed by Public Enterprises, as Browne and O'Sullivan (2013) mention to 'achieve dramatic improvements', real pronounced improvements in performance as many private organisations have done so in the past.

This study was conducted at Productivity SA which was established in terms of section 31 of the Employment Services Act, No. 4 of 2014 (South Africa, 2014), as a juristic person and an Entity of the Department of Employment and Labour (DEoL), regarded as a public enterprise. Its mandate is to promote employment growth and productivity, thereby contributing to South Africa's socio-economic development and competitiveness, AS its core business. When Public Enterprises, like Productivity SA, have service delivery mandates to achieve, whilst doing it in the most efficient and effective manner and remaining both financially viable and competitive, it's important that the entity evaluates its current business model and ensures that internal processes and systems are reviewed to be functional and optimal. Due to the changes in the external environment and the poor performance of Productivity SA in the past financial years, a review of the business model was a priority for the board of directors.

The essential contribution of this paper is to assess business process gaps which affect the performance of Productivity SA as a public enterprise. As such, this paper will aid Productivity SA by reducing inefficiencies caused by gaps within processes, therefore positively impacting organisational performance.

2. Problem Investigated

Public enterprises, including Productivity SA, face major financial challenges as they often do not have sufficient revenue streams to fund their operational costs. Productivity SA reports to Parliament, on the Annual Performance Plan (APP) targets set for the programmes which are linked to the entity's functions. In the past five years, these targets could not be achieved without major financial implications, with quality of work being questioned and time constraints on delivery have been affecting the reporting on the achievement of the APP targets. In 2015/16 the organisation made a loss of R5.6 million, by 2016/17 the loss grew to R23 million, with an annual performance of 41% and 53% respectively (Productivity SA, 2016). For Productivity SA to improve on its current financial situation, service delivery, quality of work and timeliness of reporting, it is imperative to determine key areas of weaknesses which are affecting their businesses' performance. The study aimed to assess the key business process gaps that are affecting productivity and overall organisational performance within Productivity SA, with the intent to provide recommendations that will lead to improvements in productivity, quality of work, and turnaround times.

3. Research Objectives

The research objectives of this paper are three-fold, namely, determining the key factors affecting operational efficiencies, identifying gaps and its impact on operational efficiencies, recommending strategies to improve efficiency and identifying the impact measures that will be used to evaluate the proposed changes.

4. Literature Review

The theoretical framework for this paper consists of a gap analysis, Productivity SA's actual performance, world-class performance standards, business performance measures, business process gaps, process analysis tools, and business strategies for performance. These are discussed below:

4.1. Gap analysis

Gap analysis compares organisations' actual performance with their potential performance. According to Uhl and Gollenia (2012), a gap analysis is a management tool which assists a business to identify both strategic and operational gaps. The gaps are said to be identified by, "analysing the difference between the target and probable development of its basic business." The steps of a gap analysis are identifying organisational goals, obtaining historical data of actual performance, analysing data to identify reasons for poor performance, and identifying improvement opportunities to achieve organisational goals, (Investopedia, 2018). Gap analysis, therefore, allows the researcher to review and analyse the gaps that might exist which affect the Balanced Scorecard of an organisation

Kaur (2022) states that gap analysis allows for the comparison between an organisation's actual performance with its potential performance. In the case of Productivity SA, their performance dropped from 49% in 2014/15 to 36% in 2015/16 but improved to 68% in 2016/17, and further improved to 71% in 2017/18 (Productivity SA, 2017). However, with such improvements, there is still a need to consider world-class standards. Kennedy (2018) indicates that the world class standard is to achieve an eighty-five per cent (85%) performance level.

4.2. Productivity SA's performance

According to Productivity SA's Annual Performance Plan (APP) (Productivity SA, 2018), The National Development Plan (NDP), Vision 2030 articulates that, for South Africa to stay competitive and to move up the value chain, the following three interventions are necessary:

- i) labour-market reforms aimed at promoting employment, particularly for young people.
- ii) action to promote productivity gains and new entry by firms; and
- iii) research and development for innovation.

Coupled with this, Government has, through the promulgation of the Employment Services Act, No. 4 of 2014 (South Africa, 2014) changed the legal form and expanded the mandate of Productivity SA to include promoting employment, growth, and workplace productivity. This mandate is aligned to and fits well within the mandate of the DEoL, which is to regulate the labour market through policies and programmes developed in consultation with social partners, which are aimed at, amongst others, "Improved economic efficiency and productivity." (Productivity SA, 2017).

Furthermore, the mandate and programmes of Productivity SA are acknowledged by the Portfolio Committee on Labour, to annually assess the performance of the Entity and hold it accountable for the delivery and attainment of its strategic goals and contribute to service delivery as well as financial accountability. To this end, the Committee has recommended in its Budgetary Review and Recommendation Report (BRRR), dated 27 October 2016 that, the Minister of Employment and Labour should ensure that Productivity SA is appropriately capitalised to be able to extend its services to areas where they are currently not operating and to ensure the entity is rendered more visible. Table 1 illustrates the APP results of Productivity SA from 2014/15 to 2017/18.

Table 1: Productivity SA's APP performance

Year	Planned Targets	Overall Achieved	Percentage Achieved
APP 2014-15	40	30	49%
APP 2015-16	42	15	36%
APP 2016-17	41	28	68%
APP 2017-18	28	20	71%

4.3. World-class performance standards

De Waal (2002) states that to be successful, organisations need to become and stay world-class in everything they do. De Felice, Petrillo and Monfreda (2013) assert that global competition has caused fundamental changes in the competitive environment of organisations. It is incumbent on organisations to develop strategic objectives which, upon achievement, result in a competitive advantage in the marketplace. However, for almost all organisations, increased productivity and better

overall efficiency are the most important goals. To identify if there are performance issues or factors affecting performance, the set standards or targets need to be clearly understood by employees.

Overall equipment effectiveness (OEE) is the premier standard for measuring efficiency and productivity (Trout 2022). This standard can be applied in any industry. The world-class standard is to achieve an eighty-five per cent (85%) performance level (Kennedy, 2018). Monitoring performance through the APP and Balanced Scorecards, allows organisations to identify areas for improvement and set targets accordingly. Rumburg (2020) states that implementing balanced scorecards, has the effect of reducing the total cost of ownership and improving customer satisfaction. With Productivity SA achieving a performance level of 71% in 2017/18, the improvement plan is to achieve the world class standard of 85% (Productivity SA, 2018).

4.4. Business performance measures

High-performing organisations in both private and public sectors invest in performance management and measurement systems. It is contended that there are different measures deployed to monitor organisational performance. One is “outcomes” (outputs) which are an assessment of the results of a program compared with its intended purpose, output, and impact. The other is “inputs” which are measures used to monitor the performance of organisations and employees, (Osano & Okwena, 2015). There are measurements which consist of complaints, customer satisfaction levels, timeliness or response time, adherence to schedule and responsiveness. For effective performance measurement, an organisation needs to include a mix of the outcome, output, and efficiency measures. These should be linked with the strategic business goals and should be integrated into an organisation-wide performance measurement system. These are considered key performance measurements that describe how an organisation is successfully achieving its goals, (Wang, Dang, Nguyen & Le, 2020).

Gopal, Rana, and Krishna (2022) state that organisations are facing increased pressure to improve their overall performance to gain a competitive advantage over rivals. Performance monitoring and evaluation is a strategic approach to management, which allows them to measure and review the performance of the organisation in terms of indicators for efficiency, effectiveness, and impact. Figure 1 provides an analysis of the performance indicators which indicate that Productivity SA has twenty-two output indicators and six impact indicators out of the twenty-eight APP targets.

4.5. Business process gaps

A business process is a set of activities that are followed to realise an organisational goal. Business process gaps are inefficiencies that make a business process less efficient than it should be. They are also inefficiencies or weaknesses which affect the process negatively, thereby resulting in it not functioning in the most effective manner. Spacey (2017) identifies fourteen causes of operational gaps of which the top five are a lack of planning, low-quality data, unnecessary dependencies, bottlenecks, and inconsistent work levels. These fourteen process gaps are the most common that have been identified within businesses in any sector. The questionnaire was developed using these fourteen process gaps.

4.6. Business process analysis

Proctor (2021) states that business process gap analysis is an important and powerful technique in business analysis and business systems. Businesses normally formulate and group their core business capabilities in processes which are measured and managed. Rosing, Scheel, and Scheer (2014) add that a business process is a collection of tasks and activities that have been structured in a way to design, create and deliver a product or service to the customer. Organisations that have efficient and effective processes enjoy a positive financial performance, reduced cost, high levels of quality, on-time delivery of their products and services thereby achieving competitive advantage. According to Brandenburg (2022), a business process model is a technique used for business analysis. It captures how a business process works and ultimately links how teams work to achieve a business goal. The use of a balanced scorecard, in a service industry, also allows businesses to measure and manage their performance, and ensure that actions to correct and align to objectives, can be taken. Businesses can use various theoretical frameworks such as lean systems theories or Lean Manufacturing, Six Sigma,

Total Quality Management (TQM), and Business Process Reengineering (BPR) to improve business process workflow.

4.7. Process analysis tools

Lean systems theory focuses on creating a lean organisation that can efficiently adapt to market dynamics and instability. Barret (2015) explains that organisations can use any of the lean theories on to base their workflow. They could use the basic concepts of the theory along with their own experiences and feedback to structure workflow. It speaks to experimenting and then analysing whether the introduced changes have been successful. Business process review with reengineering is the analysis and design of workflows and processes within and between organisations (Zhongyu, 2012). Every business contains processes to achieve an end goal, and there are several tools to analyse processes, for example, process mapping, value stream mapping and waste elimination.

4.8. Business strategies for performance

A strategic intent for Productivity SA is to decrease the amount of time and cost for service delivery and to increase the magnitude of the overall impact of all its programme interventions. Through the review of the business model, Productivity SA has sought ways to redefine its competitive advantage and link it to meet its developmental mandate which aligns with national strategic policy priorities espoused in the National Development Plan (NDP). When an organisation sustains profits that exceed the average for its industry, the organisation possesses a competitive advantage over its rivals. The goal of business strategy is to achieve sustainable competitive advantage. Kotler and Keller (2015) indicate that an organisation can achieve higher profitability over its competitors either through cost leadership, focus and differentiation.

Capabilities refer to the organisation’s ability to utilise its resources effectively. Such capabilities are embedded in the routine of the organisation, are not easily documented as procedures, and thus are difficult for competitors to replicate. These are termed best practices. The organisation’s resources and capabilities together form its distinctive competencies. These competencies enable innovation, efficiency, quality, and customer responsiveness, all of which can be leveraged to create a cost advantage or a differentiation advantage. By combining the two types of competitive advantage with the organisation’s choice of scope, broad market versus narrow, Porter (2008) has defined five competitive strategies for staking out a market position, operating a business and delivering value to customers. These are shown in Figure 2 below:



Figure 1: Five competitive strategies
Adapted from Porter, (2008)

To assess the business process gaps that affect performance of public enterprises, there was a need to understand the topics reviewed in the literature above.

5. Research Methodology

5.1. The research design and instrument

The research design consisted of a mixed-methods research approach using evaluative research. The quantitative phase of the study utilised a positivism approach whilst the qualitative phase used an interpretivism approach. The study made use of a survey questionnaire and an interview schedule which were compiled using indicators from the literature review and aligned to the research objectives. This enabled the researcher to come to conclusions and to make recommendations regarding the assessment of key business process gaps affecting productivity and organisational performance at Productivity SA. The collected data were analysed via thematic analysis and inferential and descriptive statistics.

The research instruments were piloted and amended for inaccuracies. The questionnaire was sent via email and the participants were given one week to complete the questionnaire and return. The interview participants were contacted, and dates set for face-to-face interviews. A note regarding confidentiality was added in the cover letter.

5.2. The population and sampling in the study

The target population of the study reported in this paper was composed of selected employees (n = 106) of which forty were in the operations department of Productivity South Africa. A census and purposive sampling were adopted for the survey and interviews, respectively. Hence, the questionnaire was sent to all forty employees of the operations department. The interviews comprised of four senior managers/executives, representing the operational units. The response rate for the questionnaire survey was 78% and was found to be acceptable for the purposes of this study.

5.3. Data collection and analysis

Data was collected by means of a survey questionnaire and an interview schedule. The questionnaire was utilised to elicit responses to the assessment of key business process gaps that affect productivity and performance at Productivity SA. The quantitative phase included inferential and descriptive statistical analyses were used to identify and show patterns in the data. Descriptive and inferential analyses of questions were performed to look at the distribution of the respondents. The results were analysed and interpreted from responses generated through the questionnaire. SPSS was then used to do inferential statistics. Correlations between two variables were also considered.

The qualitative phase utilised a thematic analysis to link the objectives to the responses within themes. Content analysis was then used to categorise verbal data to classify, summarise and tabulate the data. The key factors affecting performance were further reviewed by analysing the operational data, to identify the largest contributors to poor performance.

6. Results and Findings

6.1 Presentation of analysis and findings

The findings and results are aligned to the objectives and the three main constructs of this study. It includes results and findings from both qualitative and quantitative phases.

6.1.1. Analysis of data:

Objective 1: To determine the key factors affecting operational efficiencies at Productivity SA.

6.1.1.1. Key factors affecting operational efficiency:

In the qualitative phase, respondents were asked 3 sub-questions relating to most common causes of inefficiencies within the organisation, factors contributing to these causes and recommendations to address each cause. The themes which emerged were:

Table 2: Thematic analysis

Core-theme	Sub-themes	Interpretation
Strategy Integration and planning	Need for a strategic focus, building cohesive teams, having common objectives, integration, proper planning, and accurate decision making.	<p>Strategy needs to be integrated into the operational planning. There is a lack of cohesion. Integration would lead to having common objectives, which drives the strategy. This affects planning and execution of the strategy. Also directly affects the performance. Regarding individual contracting and targets: an average of 64% answered positively, knowing their quarterly and yearly income targets.</p> <p>Actual APP results reflect that operational units achieved an average of 75%. A total of 34% confirmed that their units made a deficit. The planning failures resulted in overproduction, seen where units exceed on APP targets but still are in a deficit.</p> <p>Lack of planning or planning failures, which result in under achievement or over-achievements were number 1 with 77% responses agreeing.</p> <p>Based on the findings, planning, and the integration of the strategy to the operational plan need to be addressed to ensure performance targets are met and ensure financial stability.</p>
Leadership and communication	Need for good leadership, skills cohesion, eliminating bureaucracy, being decisive, encouraging empowerment, and improving communication.	<p>The results indicated that there is no cohesion at leadership level. Excessive bureaucracy, with “in-fighting”, priorities are not set by Executive committee, which reflects indecisiveness, lack of empowerment of staff and, communication failures.</p> <p>On average, 20% were unsure of their unit’s overall performance. 19% indicated they were uncertain if the business unit exceeded their performance targets, and 37% were uncertain if their units made a deficit.</p> <p>Only 63% positively responded that performance results are captured on a centralised system and updated weekly. The remaining 37% were either uncertain or disagreed.</p> <p>Systems were not in place to support processes efficiently, with an average of 40% indicating the uncertainty and lack thereof.</p> <p>Politics within a team was the fourth highest reason for gaps that affect the business unit’s operations.</p> <p>Leadership plays a huge role in communication, empowerment, and authority, which are gaps that exist. An average of 40% reflected negatively to problem solving. Staff are empowered to solve problems as they occur, which results in a slow decision-making process.</p>
Execution and service delivery	Need for improving service offerings, Improving processes and policies, Proper standard operating procedures (SOP’s), understanding your market; flexibility; and improve knowledge.	<p>Review of service offerings are necessary. Not all projects have clear and defined processes, including SOP’s and work instructions.</p> <p>Markets are changing, and we need to understand the needs of the customer. Due to market flexibility, we are unable to deliver relevant service offering and improve knowledge.</p> <p>As much as 55% agreed that the service offerings were reviewed in the past year and 52% positively responded that they are meeting clients’ needs.</p> <p>Bottlenecks, relating to slow or overloaded resources, inconsistent work levels, when targets are not the same according to work levels, and human error are three of the five gaps highlighted. These gaps directly affect execution and service delivery.</p> <p>Customer satisfaction is not measured, therefore even with flexibility and review of products and services, they are unable to gauge if they meet client needs or not.</p> <p>The performance results highlighted in the literature review, indicated 2014/15 APP results dropped from 49% to a dismal 36% in 2015/16. The following year 2016/17 it improved to 68% and a further improvement to 71% in 2017/18. The world class standard is to achieve 85% or more, therefore the researcher can confirm service delivery has been affected.</p>

In the quantitative phase, using Spacey’s (2017) operational gaps, the survey highlighted common causes within the business that the participants may identify and relate to, in terms of common causes of operational gaps. The gaps were further categorised into three areas, namely: Planning and Performance; Skills, Systems and Tools and Products, Services and Quality.

Planning and performance:

The unit’s performance for the last financial year: the analysis indicated that on average 20% were unsure of their unit’s overall performance. A high 97% had a positive response to knowing the business unit’s annual performance plan and 42% indicated their business unit exceeded their performance targets. Actual APP results as per Productivity (2018), reflects that operational units achieved an average of 75 of APP targets.

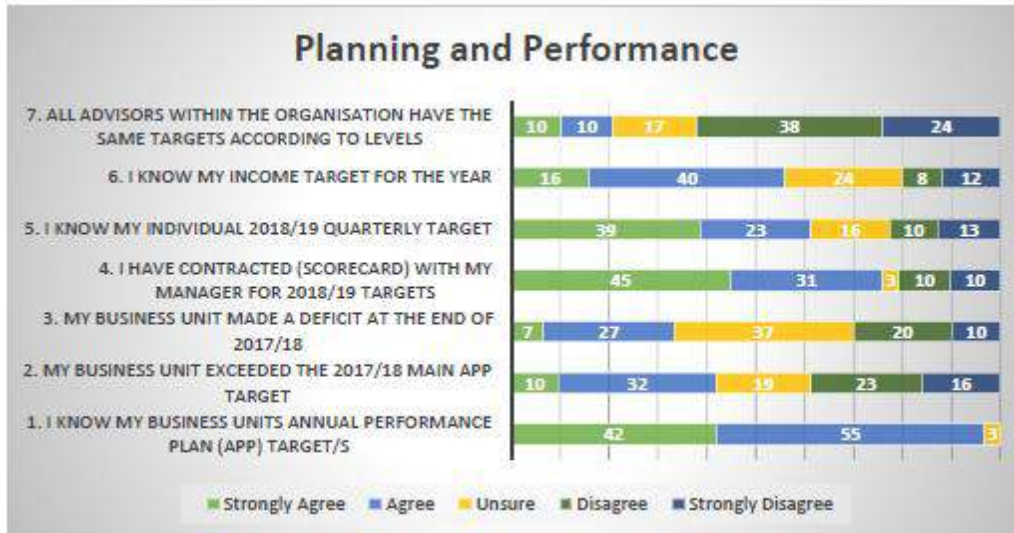


Figure 2: Planning and Performance

Skills, Systems and Tools:

All (100%) indicated that they knew the tools required for their jobs. A high 66% added that they had been trained on tools and processes. Regarding standards and skills, 87% indicated that they knew the standard time to deliver on their targets. A total of 60% indicated that the systems and tools that support the process efficiently. Similarly, 58% indicated that there is a centralised database of clients that is kept to access client information and status. As much as 60% indicated that problems are solved within 48hrs by managers and 63% added that performance results are captured on a centralised system available for anyone to view and having performance results updated weekly.

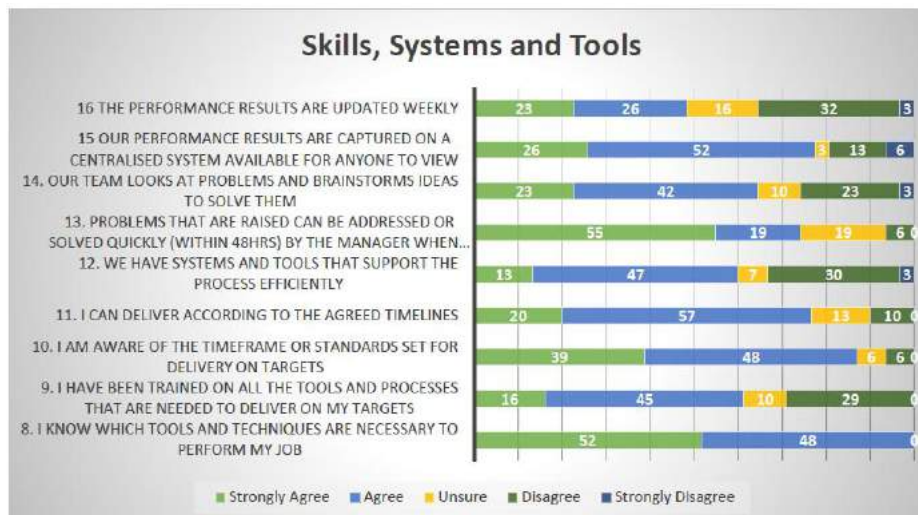


Figure 3: Skills, systems and tools

Products, services, and quality:

Regarding products and services, 55% agreed or strongly agreed that the service offerings were reviewed in the past year. The findings indicated that 83% agree that they are flexible to expand/

change their service offerings according to the client’s needs. Only 52% indicated that they are meeting clients’ needs. A high 77% indicated that clients do evaluate the service offerings at the end of a project. When evaluating the quality, 71% agreed that there are standard templates for reporting, whilst 58% indicated that quality controls are in place.



Figure 4: Products, services, and quality

Objective 2: To identify the gaps within the business processes at Productivity SA.

6.1.1.2. Identify gaps within processes:

In the qualitative phase, respondents were requested to reply to three questions relating to whether processes were standardised within the organisation, were processes within your unit standardise and what are the gaps within your unit’s business processes?

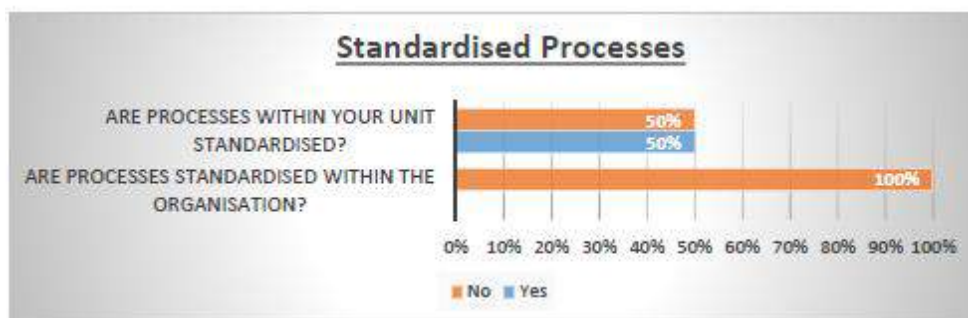


Figure 5: Standardised Processes

Figure 5 indicates the responses to SOP’s. All (100%) of respondents agreed that processes are not standardised within the organisation. Respondents further explained that there was no “attempt for integration”, they have ISO in place, but it’s not integrated into the processes. There is “total fragmentation”. Half (50%) indicated that processes are standardised within their own business units. The results indicated that one of the top five operational gaps are human error, where errors are a result of process, system or training gaps that allow people to make mistakes. With only 50% of qualitative study respondents indicating processes are standardised within their own business units, the human error gap can be addressed with SOP’s and templates being used.

In the qualitative phase, using Spacey’s (2017) 14 most common operational gaps, respondents provided feedback on gaps within their unit and the factors it may affect, which were quality and efficiency, utilisation or/and cost.

Gaps:

The following top five operational gaps emanated from the findings:

- Lack of planning or planning failures, which result in under achievement or overachievements, (77%);
- Bottlenecks, relating to slow or overloaded resources, (77%);
- Inconsistent work levels when targets are not the same according to work levels, (74%);
- Politics, when teams may slow a process down due to political/ulterior motives, (71%); and
- Human error, when errors that are a result of process, system or training gaps that allow people to make mistakes, (68%).

Impact on quality/efficiency/utilisation/cost:

Planning: The gaps in planning have the highest effect on efficiency (32%), followed by quality and cost (23% respectively) and on utilisation (21%). The impact of these gaps on all the above stated measures directly affects the achievement of targets. According to Spacey (2017), lack of planning or planning failures can result in overproduction, as well as underproduction/ not meeting targets on time.

Bottlenecks: According to Antony, Vinodh, and Gijo (2017), bottlenecks relate to a process which stops or slows down the flow of work and they could have a huge impact on efficiency. A total of 33% respondents indicating that bottlenecks exist in their processes. This was followed by quality and utilisation of resources with 27% and 25% of respondents agreeing, respectively. Only 15% of respondents indicated it would affect cost, which indicates that bottlenecks might not directly impact the cost as much as it would impact quality, efficiency, and utilisation.

Inconsistent work levels: These refer to resources that have little to do, constant overworking and when targets are not the same according to work levels or job grades. The largest impact of inconsistent work levels would be on utilisation of resources. A total of 41% of respondents indicated that utilisation would be affected. Efficiency was also highlighted by 27% of respondents as another factor to be influenced. As much as 20% and 12% of respondents agreed that quality and cost respectively, would also be affected.

Effects of politics: Politics, in the context of this study refers to instances when teams slow down a process due to political motives and/or informal leadership. This affects efficiency, drive up costs, and impact utilisation as well as quality of service or products. The largest result was the impact on cost. A total of 28% of respondents indicated that cost had been affected, 23% indicated that both quality and utilisation had also been affected by politics within a team and 26% responded that efficiency was also affected by politics within their business units.

Effects of human error: Human error contributes to efficiency, cost, quality, and utilisation. Spacey (2017) mentions that human errors are a result of process, system or training gaps that allow people to make mistakes. A total of 27% of respondents agreed that efficiency and cost had been affected, whilst 25% indicated that quality was affected, and 20% indicated that utilisation was also affected.

7. Limitations of the research

Only forty of the one hundred and six population partook in the study. This meant that the sample size was too small for factor analysis to be employed and due to the nature of business at Productivity SA. The literature was found to be limited since the nature of this study was a first for public enterprises. The location of respondents was another challenge. Staff are based at multiple sites nationally, therefore responding to the questionnaires and planning the interviews were more time consuming, than those based in the same office as the researcher.

8. Conclusion and Recommendations

The conclusions of this study are based on the research findings in line with the objectives of the study. The following note-worthy conclusions were drawn from the findings:

8.1 Research objective 1: *To determine the key factors affecting operational efficiencies at Productivity SA*

It can be concluded that there are key factors that affect operational efficiencies, namely planning, performance measurements, skills, systems and tools, products, services, and quality. Planning impacts that of achievement/non-achievement of targets. The feedback can relate to lack of planning or planning failures, lack of communication and commitment. The planning failures can result in overproduction, seen where units exceed on APP targets but still are in a deficit. There was a lack of commitment to perform their duties and meet targets or their lack of interest in the sustainability of the organisation.

The gaps that may exist are having low quality data, due to the lack of customer information or too many databases, with no clear one database. Also, systems are not in place to support processes efficiently. Empowerment and authority are another gap that do exist. Staff may not be empowered to solve problems as they occur, which results in a slow decision-making process. Regarding quality control, the conclusion is that staff are unsure and disagree that the organisation has formal quality control procedures in place as per the Productivity SA quality policy (Productivity SA, 2016). Furthermore, poor quality control result in compromised service. Human errors can contribute to low quality of service delivery since templates and standards are not in place.

8.2 Research objective 2: *To identify the gaps within the business processes at Productivity SA.*

It is concluded that Productivity SA experiences all fourteen of the common gaps within processes, with thirteen confirmed by majority of the operational respondents. The top five operational gaps are, lack of planning or planning failures, which resulted in under achievement or overachievements; bottlenecks, relating to slow or overloaded resources; inconsistent work levels, when targets are not the same according to work levels; politics, when teams may slow a process down due to political/ulterior motives; and human error, when errors that are a result of process, system or training gaps that allow people to make mistakes, mainly due to standard operating procedures not in place for all programmes.

8.3. Research objective 3: *To recommend strategies to improve efficiency and identify the impact measures that will be used to evaluate the proposed changes.*

The following recommendations will assist the organisation by reducing inefficiencies caused by gaps within process, therefore impacting organisational performance.

To recommend strategies to improve efficiency and identify the impact measures that will be used to evaluate the proposed changes. A competitiveness strategy will need to be selected; therefore, the cost leadership strategy is recommended to improve efficiency and impact the organisations performance. A cost leadership strategy strives to achieve lower overall costs. Cost leadership can be achieved through various means, namely:

- Capacity utilisation by streamlining the process and eliminate waste;
- Implement TQM, which controls and reduces variations;
- Economies of scale, using lower input costs without sacrificing quality to get more services/output;
- Automation/Production technology and design;
- Cost advantage of outsourcing or vertical integration and;
- Motivating employees through performance management systems.

Further recommendations speak to the following:

Integration of strategic objectives with the operational plans: The organisation must ensure that there is an integration between the strategic objectives and the operational plans. Also ensure that

operational plans are actionable and communicated to the achievement of both performance targets (APP) and financial targets (viability).

Improve utilisation of resources: Improve utilisation of resources by setting performance targets according to work levels (same across the board), breaking down performance targets into quarterly, and monthly individual financial and programme/project targets, and using dashboards to monitor both individual and business unit performance weekly, monthly, and quarterly.

Reduction of waste within processes: Reduce/eliminate waste within processes, streamline processes, approve SOPs, train staff on approved SOPs, use dashboards to monitor timelines on the project, review the strategy for implementation, and create templates for the deliverables to reduce rework.

Implement TQM: TQM visible efforts include controlling and reducing variation and empowering their workforce. Implement a structured approach to overall organisational management through dashboards, to measure and manage performance, ensure that improvement targets are set and reviewed, worker control, processes are determined and controlled by the workforce, without reliance on a separate function, problem solving, cross functional teams solve problems instead of individuals from a specific discipline, and evaluate customer satisfaction consistently.

Motivate and empower employees: Empower staff and give them the freedom and authority to solve problems and make decisions, remove unnecessary dependencies of approval within processes, create platforms for communication through weekly meeting/ and monthly team meetings, create and implement performance incentives/ rewards and recognition policies and top management to communicate more often on overall organisational performance.

9. Managerial Implications

In summary of the meaning of the results, it is incumbent upon management of the organisation to take necessary actions to address poor performance. Management needs to integrate their strategic objectives in line with the results of this study to improve performance. Furthermore, management need to compare the results with the need to improve the utilisation of resources, reduce waste, implement TQM, and motivating and empower employees.

10. Final conclusions

The research study assessed business process gaps that affect performance of Public Enterprises. The strategic intent for Public Enterprises is to decrease the amount of time and cost for service delivery and to increase the magnitude of the overall impact of all its programme interventions.

For Productivity SA to improve on its current financial situation, service delivery, quality of work and timeliness of reporting, it was imperative to establish the key areas of blockages and weaknesses that are affecting the businesses performance. The study concluded that there are several operational gaps that exist within processes, which can be resolved using the process analysis tools and recommendations to address the gaps. The study thus identified and assessed the process gaps, by using process analysis tools.

The assessment of business process gaps, initiates the need for strategically designed and reengineered processes, ensuring efficiency and effectiveness of an organisation, resulting in enhanced business performance and service delivery.

This study is original, and the paper succeeds in assessing business process gaps which affect the performance of the organisation. As further research, this study could be replicated in another Public Enterprises.

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What Influences Generation Y Students To Become Ecopreneurs?

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Keywords

Ecopreneurship;
Intentions; Generation
Y; South Africa

Abstract

The world as we know it is facing several highly complicated environmental issues. It has been argued that the earth's environmental problems are directly linked to mankind's continuous endeavour for global urbanization. As a result, consumers environmental concerns coupled with their need to preserve the environment has increased. This had led to increased pressure on the corporate sector to become more environmentally responsible and sustainable in their day-to-day operations. Similarly, traditional entrepreneurs have been driven by environmental concerns for the environment and not just by profits, and the term "ecopreneur" was born. Characterised as one of the largest and most educated generations to date, the Generation Y cohort has also said to display high levels of environmental concern and entrepreneurial intent. This paper collected data from 520 Generation Y students in South Africa. To assess which factors, influence ecopreneurship in Generation Y students, various statistical methods were employed. The findings indicated that attitudes towards ecopreneurship, subjective norms and environmental knowledge positively influence intention to become ecopreneurs. Furthermore, no real statistically significant differences were detected regarding gender. As such, when marketing to Generation Y students in South Africa emphasis should be placed on education and increasing ecological awareness.

1. Introduction

The world as we know it is facing several highly complicated environmental issues. It has been argued on several occasions that the earth's environmental problems are directly linked to mankind's continuous endeavour for global urbanisation (Wang & Dong, 2019; Jeff, Marla, Jha, Levy & McEntee, 2015). Several environmental issues such as natural resource depletion, water contamination, global warming, carbon dioxide emissions and climate change have thus emerged due to persistent industrialisation (Jeff *et al.*, 2015; Mayerl & Best, 2019; Taufique & Vaithianathan, 2018). Increased pressure has therefore been placed on the corporate sector to become more environmentally responsible and sustainable in their day-to-day operations. (Nikolaou, Tsagarakis & Tasopoulou, 2018; Oláh, Aburumman, Popp, Khan, Haddad & Kitukutha, 2020). The traditional entrepreneur has taken on a new shape in the late 1900s, the new term "ecopreneur" are entrepreneurs that are driven by environmental concerns for the environment and not just by profits ecopreneurs (Farinelli, Bottini, Akkoyunlu, & Aerni, 2011; Schuyler, 1998). In recent years, a growing understanding of the importance of ecopreneurship has become apparent as market innovations such as green buildings, natural products, and renewable energy become more common. (Li, Long, Chen, Chen & Wang, 2020; Kibert 2016). Along with being characterised as one of the largest and most educated generations to date, the Generation Y cohort is also said to display high levels of environmental concern and entrepreneurial intent (Fry, 2020; Iwu, Ezeuduji, Eresia-Eke & Tengeh, 2016; Malebane & Swanepoel, 2015; Marire, 2015). To add on, Ottman (2011) explains that the youth are the future of the environment as they are the future leaders, policy makers and governmental figures which will have a tremendous influence on the environment. To date, however, research regarding Generation Y's intentions to become ecopreneurs is still in short supply, especially within the South African context.

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2. Research objectives

The following research objectives have been set out for the study:

- To determine Generation Y students' attitude and subjective norms towards ecopreneurship
- To determine if Generation Y students show an inclination towards environmental knowledge and intent to become ecopreneurs.
- To test a causal model of factors that influence the intent of Generation Y students to become ecopreneurs in the South African context.

The proceeding section delves into the literature of ecopreneurship and Generation Y students.

3. Literature Review

3.1. Ecopreneurship

As increasing scientific evidence links the deterioration of the natural environment to anthropogenic activity, pressure on the corporate sector to become more sustainable and environmentally responsible in business practices has also intensified. (Nikolaou *et al.*, 2018; Oláh *et al.*, 2020; Ripple, Wolf, Newsome, Galetti, Alamgir, Crist, Mahmoud & Laurance, 2017; Wolfgramm, 2016). Despite greater government restrictions, environmental advocacy activities, and business greening plans introduced in recent years, much more must be done to reverse existing environmental harm around the world (Barbier & Hochard, 2018). Innovation is therefore required to effectively manage the earth's natural resources and ensure sustainable growth at present and for future generations (Lee & Trimi, 2018; Rodríguez-García, Guijarro-García & Carrilero-Castillo, 2019). Authors Panackal, Singh and Sharma (2016) observe that a strong correlation exists between entrepreneurship and environmentalism as eco-innovations are predicted to be a competitive advantage for both businesses and countries. By developing new technology that benefits the environment, ecopreneurs play a significant role in preserving natural resources for present and future generations (Hestad, Tåbara & Thornton, 2020). According to existing literature, ecopreneurship can be defined in both broader or more limited terms as no consensus has yet been reached on a single all-encompassing definition (Santini, 2017). For the purposes of this study, McEwan's (2013) broader definition is applied: "any entrepreneurial action that contributes to preserving the natural environment".

3.2. Ecopreneurial intention

Some say that people can only act effectively to bring about preferred outcomes once they have sufficient knowledge (Ajzen, Joyce, Sheikh, & Cote, 2011). This holds true for pro-environmental behaviour and ecopreneurship as well. Authors such as Li, Li, Jin and Wang (2019), Panackal *et al.* (2016), Latif, Omar, Bidin and Awang (2013) and Fielding, McDonald and Louis (2008) agree that a positive correlation exists between environmental knowledge (EK) and pro-environmental behaviour. In other words, the higher the levels of environmental knowledge a person possesses, the more likely they are to engage or behave in a pro-environmental manner. Similarly, Li *et al.* (2020) and Mostafa (2007) found that perceived environmental knowledge was a good predictor of positive attitude and behaviour towards the natural environment. A lack of knowledge proved to be a barrier towards pro-environmental behaviour.

According to the theory of planned behaviour, personal attitude (PA) refers to an individual's overall assessment of the desirability of engaging in a specific behaviour, whether positive or negative in nature (Chipeta, 2015; Fielding *et al.*, 2008; Ajzen, 1991). Researchers suggest that having a positive attitude toward a particular behaviour increases one's desire to engage in that behaviour, whereas a negative attitude has the opposite effect (Li *et al.*, 2019). Studies pertaining to eco-behavioural intention as well as entrepreneurial intention have also found a robust relationship between personal attitude and intention (Chipeta, 2015; Fielding *et al.*, 2008).

A study by Lee (2008), regarding the prediction of green purchasing behaviour of adolescents, stated that the greatest predictor of green purchasing behaviour was social influence. The theory of planned behaviour defines subjective norms (SN) as the degree to which a person perceives their peers, family

and society support or do not support a type of behaviour (Chipeta, 2015; Fielding *et al.*, 2008; Ajzen, 1991). This variable premises that a person will be more likely to behave in a given way if they believe that major social influencers approve of or promote it, and less likely if they do not (Li *et al.*, 2019).

3.3. Generation Y University Students

The necessity of environmental awareness and ecologically responsible behaviour has been taught to Generation Y individuals from as early as pre-school through higher education. (Williams, 2017). This is considerable as the youth are often considered to be the world's future leaders and subsequently, hold the future of the environment in their hands (Gruzina, Firsova & Melnichuk, 2020; Ottman, 2011). Generation Y members are more likely to take part in large protest movements and promote environmental causes because they feel that by working together, they can make the world a better place (Barton, Fromm & Egan, 2012). Earlier research conducted in the South African context have revealed strong levels of entrepreneurial intention among Generation Y students (Iwu *et al.*, 2016; Malebane & Swanepoel, 2015; Marire, 2015). Furthermore, A study by Abina *et al.* (2015) indicated that university students display positive intentions towards ecopreneurship. For the purposes of this study, members of the Generation Y cohort include individuals born between the years of 1986 and 2005 (ages 15–34) in accordance with the research of Bevan-Dye (2016) and Markert (2004). Since this study focuses on Generation Y university students, however, participants' ages only range from 18 to 34 years.

Based on the literature explained in prior sections the following theoretical is proposed:

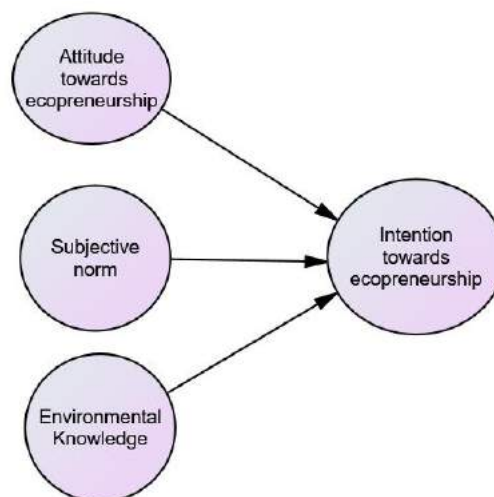


Figure 1: Proposed Theoretical Model

4. Research Methodology

The following section highlights the methodology used for this study.

4.1. Sampling procedure

The sample for this study was selected by incorporating a mix of convenience and judgement, non-probability sampling techniques. The convenience method involved intercepting and selecting sample units that were opportunely accessible in high-traffic areas, which in this case, meant drawing a sample from students conveniently available in proximity to university campuses (Burns & Bush, 2014). The judgement sampling technique was also utilised by only drawing a sample of students that formed part of the Generation Y cohort. The original sample size was made up of 600 university students. Once the questionnaires had been screened a final number of 520 viable questionnaires remained for analysis. Considering the sample size for this study, an historical reference approach was followed. This approach entailed observing comparable studies and using its sample sizes as a guide. Similar studies concerning entrepreneurial intention and environmental concern include Marire (2015) with a sample size of 400 students; Synodinos (2014) with a sample size of 500 students; Cheah and

Phau (2011) with a sample size of 600 and Minton and Rose (1997) with a sample size of 500. The sample population comprised both male and female students, ranging from the ages of 18 to 33, who were enrolled in one of three registered public South African higher education institutions (HEIs) at the time. Of the three HEIs, one was a traditional university, the second a comprehensive university and the third a technical university.

4.2. Data collection

As the data needed to be collected from a relatively large sample numerically, a single cross-sectional, descriptive, quantitative research approach was considered the most suitable means of collecting and quantifying the required data for the study. Self-administered structured questionnaires were designed and used to obtain primary data from the sample population. A cover letter was included in the questionnaire which contained a brief explanation of the study's purpose as well as assurance of the participants' anonymity. Participation in this study was entirely optional, and students were free to withdraw at any point in time. The remainder of the questionnaire consisted of three sections. Section A set out to gather demographic information from participants pertaining to their field of study, level of study, gender, home language and current age. Section B aimed to collect information relating to factors known to contribute positively to intentions towards pro-environmental behaviour, such as environmental concern; environmental behaviour; perceived effectiveness of pro-environmental behaviour; and perceived environmental knowledge. The scales used in Section B were adapted from Mostafa (2007) and Lee (2008). Finally, Section C aimed to extract information regarding participants' overall intention towards becoming ecopreneurs. Questions included in this section relate to the student's attitude towards ecopreneurship, subjective norm, perceived behavioural control and ecopreneurial intention. The scales in Section C were adapted from Fielding *et al.* (2008) and Liñán and Chen (2009). All scaled responses were measured using a six-point Likert scale ranging from (1) strongly disagree to (6) strongly agree.

5. Results and Findings

To analyse the captured data IBM's Statistical Package for Social Sciences (SPSS), version 27 was used. To achieve the set-out objectives various statistical methods were conducted including internal-consistency reliability, descriptive statistics, correlation analysis, regression analyses and an independent sample t-test.

5.1. Internal-consistency reliability

Reliability analysis is used to validate the astuteness of the measuring scale, this is done as a precaution for disseminating accurate results to the general population. The reliability of this study was assured using the Cronbach alpha statistic (a widely renowned measurement tool). The range of the Cronbach alpha values are as follows: $\alpha \leq 0.50$ are unacceptable and considered unreliable; $\alpha \geq 0.60$ shows acceptable reliability and $\alpha \geq 0.70$ implies good to excellent reliability (Zikmund & Babin, 2013; Malhotra, 2010). Table 1 below presents the Cronbach alpha values for the measuring constructs.

Table 1: Reliability analysis

Constructs	Items	Cronbach alpha
Attitude towards ecopreneurship	5	0.87
Subjective norm	3	0.76
Environmental knowledge	4	0.75
Intention towards ecopreneurship	6	0.93

Source: Own compilation

As indicated in Table 1, all measuring constructs recorded a Cronbach statistic of above 0.70, this is indicative of good to excellent internal-consistency reliability. The intentions towards ecopreneurship construct achieved the highest value of 0.93 ensuing excellent reliability for that construct. As the remaining constructs achieved values greater than 0.70, it may be inferred that the measurement instrument possesses good internal-consistency reliability. The following section details the descriptive statistics of the data.

5.2. Descriptive statistics

Descriptive statistics characterises the captured data using various statistical tools such as means, standard deviations (SD), skewness and kurtosis. In addition, a samples t-test was carried out on each of the constructs means to test for their significance. Owing to the use of a 6-point Likert scale in the study, an expected threshold mean was set at 3.50 with a significance level of $\alpha = 0.05$. the results are tabulated in Table 2.

Table 2: Descriptive statistics

N=520	Means	SD	t-value	p-value	Skewness	Kurtosis
Attitude towards ecopreneurship	3.95	1.11	80.73	0.000	-0.38	-0.29
Subjective norm	3.97	1.06	85.29	0.000	-0.37	0.12
Environmental knowledge	4.03	0.94	96.80	0.000	-0.29	-0.14
Intention towards ecopreneurship	3.30	1.32	56.89	0.000	-0.05	-0.87

Source: Own compilation

The results in Table show that each measuring construct recorded a mean greater than the expected mean threshold of 3.50. Furthermore, the samples t-test of each measuring construct returned a statically significant value of 0.000 at the $p \leq 0.05$ level. These results bode well for the future of ecopreneurs as Generation Y students have favourable attitudes towards ecopreneurship and value the opinions of their peers regarding environmental issues. Furthermore, these individuals regard themselves as knowledgeable over environmental issues which would aid in their future consumption decisions and methods of operations should they become entrepreneurs. In terms of intent to become ecopreneurs, Generation Y students show positive intent for incorporating environmentally friendly practices in future ventures.

Skewness and kurtosis values of the data set were all in the acceptable range and warranted to cause for concern. The distribution was considered normal as the skewness values were recorded between the recommended range of -2 and +2 and between -7 and +7 for kurtosis indicating normally distributed data (Kalkbrenner, 2022; Berndt & Petzer, 2011).

5.3. Correlation analysis

A correlation analysis is a good tool to evaluate if any relationships are present amongst constructs of a measuring scale. As such a correlation analysis was undertaken using the popular Pearson's Product-Moment coefficient. This statistical tool utilises the average means to produce Pearson values (r) which range from 0 (no relationship) to 1 (perfect relationship). The strengths of the r values are represented as follows: a weak relationship, $0.10 \leq r \leq 0.29$; a medium relationship as, $0.30 \leq r \leq 0.49$, and a strong relationship as $0.50 \leq r \leq 1.0$ between measuring constructs respectively (Pallant, 2016). The correlation matrix can be found in Table 3.

Table 3: Correlation matrix

Constructs	1	2	3	4
Attitude towards ecopreneurship	1			
Subjective norm	0.59**S	1		
Environmental knowledge	0.46**M	0.44**M	1	
Intention towards ecopreneurship	0.69**S	0.523**S	0.40**M	1
**Correlation is significant at the 0.01 level (2-tailed)				
W = Weak relationship; M = Moderate relationship; S = Strong relationship				

Source: Own compilation

The correlation matrix in Table 3 demonstrates statistically significant positive relationships amongst all measuring constructs at the $p = 0.000 \leq 0.01$ level. The relationships were evenly split between medium and strong correlation strengths. The strongest relationship was recorded between attitude and intention towards ecopreneurship ($r = 0.69$, $p = 0.000 < 0.01$), this association was expected and follows the current literature (Li *et al.*, 2019; Zhang *et al.*, 2019; Pan *et al.*, 2018). The weakest yet still significant, ($r = 0.40$, $p = 0.000 < 0.01$), relationship was found between environmental knowledge

and intention to become an ecopreneur. The results from the correlation analysis showcase that the independent factors of attitude, subjective norm and environmental knowledge have a positive influence over Generation Y students' intent to become ecopreneurs.

The Pearson's Product-Moment coefficient also bodes as a multicollinearity detector tool between construct relationships. Owing to that no (*r*) coefficients were greater than 0.90, no concerns for multicollinearity were present. In addition, each correlation relationship was significant at the 0.01 level, thus it may be inferred that the data set has nomological validity (Malhotra, 2010).

5.4. Regression analysis:

The influence of independent variables on dependent variables is determined through the use of regression analysis. The study made use of a regression analysis to determine the how much predictability the factors of attitude towards ecopreneurship, subjective norms and environmental knowledge have towards intention of ecopreneurship of Generation Y students. The results are tabulated below.

Table 4: Regression analysis

Constructs	Standardised Beta	Adjusted R2	t-value	Significance level
Dependent variable: Intention towards ecopreneurship				
Independent variables: Attitude towards ecopreneurship	0.67		14.17	0.000*
Subjective Norm	0.19		3.89	0.000*
Environmental knowledge	0.12	0.50	2.31	0.021*
*Significance at the 0.05 level (2-tailed)				

Source: Own compilation

As can be seen in Table 4, Generation Y students' intentions towards ecopreneurship is significantly positively influenced by attitude towards ecopreneurship ($\beta = 0.67, p = 0.000 < 0.05$), subjective norms ($\beta = 0.19, p = 0.000 < 0.05$) and environmental knowledge ($\beta = 0.12, p = 0.000 < 0.05$). It is notable that attitude towards ecopreneurship played the largest role towards the intention of becoming an ecopreneur, these results are echoed in the current literature (Li *et al.*, 2019; Zhang *et al.*, 2019; Pan *et al.*, 2018; McEwen, 2013). Unexpectedly, environmental knowledge had the weakest predicting effect, this result warrants further investigation as generally a higher knowledge over a subject often results in a higher predictability thereof. Collectively, the three independent variables explained 50 percent of the variance in the intent to become an ecopreneur. Therefore, it may be inferred that the independent variables of this study successfully predict Generation Y students' intention towards ecopreneurship.

5.5. Independent samples t-test

Often gender bias plays a role in environmental issues in which females have been seen to more prone to saving the environment versus their male counterparts. Therefore, it is pertinent to assess if this sentiment holds true for the intent of ecopreneurship of today's Generation Y cohort. This comparison was done using an independent samples t-test and the results have been tabulated in Table 5 below.

Table 5: Independent samples t-test

Constructs	Gender Differences						
	Male Mean	Male SD	Female Mean	Female SD	t- value	p-value	Cohen's D
Male n=241 Female n=263							
Attitude towards ecopreneurship	3.83	1.17	4.04	1.06	-2.16	0.03	0.19**
Subjective norm	3.94	1.08	3.98	1.03	-0.50	0.62	*****
Environmental knowledge	4.00	0.97	4.03	0.92	-0.44	0.66	*****
Intention towards ecopreneurship	3.21	1.33	3.35	1.30	-1.15	0.25	*****
Note: 16 respondents did not indicate their gender and were subsequently excluded from the analysis.							
*	Statistically significant at $p < 0.05$						
**	Small effect, practically non-significant						
***	Medium effect and moving toward practical significance						
****	Large effect, practically significant						
*****	Cohen's D-statistic not calculated as the variable was not statistically significant						

Source: Own compilation

As Table 5 shows, there was no statistically difference between subjective norm ($p = 0.62 > 0.05$), environmental knowledge ($p = 0.66 > 0.05$) and intention towards ecopreneurship ($p = 0.25 > 0.05$) of male and female students. However, attitudes towards ecopreneurship amongst Generation Y students showed a statistical difference in gender ($p = 0.03 < 0.05$). Therefore, female students display a slightly more positive attitude towards becoming ecopreneurs than male students. To ascertain if this difference in attitude between the two genders was statistically significant a Cohens D calculation was performed. The attitude towards ecopreneurship construct achieved a Cohen's D statistic of 0.19, this value represents a small effect which is practically non-significant.

6. Managerial Implications

Despite the increase of knowledge and awareness in the environmental movement that has led to the increase of environmentally friendly business practices (Dean & McMullen, 2007), at the current rate, the natural environment will reach it's breaking soon if more is not done. Even though governments, policy makers and non-governmental institutions have implemented regulations to minimise natural environmental degradation, more emphasis must be placed on increasing mass awareness in ecological preservation which can start from entrepreneurs researching and finding solutions. Furthermore, this environmental notion should be made available in the early schooling system to make future generations accustomed with these problems. Installing these notions at a young age would increase the likelihood of an entrepreneur to become an ecopreneur or in the very least apply environmentally friendly business practices in their day-to-day operations.

Currently, Generation Y consumers show a high level of entrepreneurial intent which could possibly manifest into ecopreneurial intent. However, barriers such as lack of knowledge and governmental assistance may hinder the intent building process to become an ecopreneur. Therefore, it is imperative to increase ecopreneurship amongst the Generation Y student cohort. This may be accomplished by implanting campaigns to the masses for the purpose of conveying positive attitudes amongst consumers and their peers alike. Furthermore, this would make environmental problems a social norm that needs be addressed.

Environmental problems affect both males and females, as such, talking these problems should then be done by both genders. Despite, Generation Y student females showing a slightly higher positive attitude towards ecopreneurship, the difference is of no significance. As a result, any campaign or activity that seeks to increase ecopreneurship should not be gender bias and focus on both genders equally.

7. Conclusion

This study showed that Generation Y students show high intent to become ecopreneurs. They display favourable attitudes and are influenced by their peers in a positive manner. Generation Y students are more knowledgeable over environmental issues than their predecessor generations cohorts which bodes well for future entrepreneurs to incorporate environmental practices and processes into their

business operations. Environmental problems must be solved through the use of innovation and not merely regulations or policies. Innovation stems from youthful, energetic minds that have a tenacious hunger and passion for problem solving. Therefore, it is up to young ecopreneurs to tackle this problem head on. This cohort is the future of ecopreneurship and are seen the agents of change within the organisation and business sectors, furthermore, this cohort will pave the way for future generational ecopreneurs. Finally, it is imperative to educate future leaders in these matters from a young age as this will create a culture norm in which solving environmental problems is a necessity.

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A Case Study Analysis of The South African Chrome-Ferrochrome Industry

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Keywords

Chrome and ferrochrome value chain, mining industry, strategic, export taxation, beneficiation.

Abstract

The South African Reserve Bank (2021) reported December 2013 as the commencement date of the longest downward phase in the South African business cycle since 1945, when such analyses commenced — this is the longest downward phase since World War II. Like most African countries, South Africa finds itself challenged by the so-called ‘resource curse’. Although the continent holds the majority of the world’s known resources, African countries have not been able to leverage these assets to create prosperity for their people.

Various ministers, and, over the past few years, also President Cyril Ramaphosa of South Africa, have expressed support for the industrialisation of the South African value chain. The government started to introduce mechanisms such as export taxation in the scrap steel industry to increase local beneficiation. A chrome ore export tax was approved by Cabinet in October 2020 but is yet to be implemented.

Taking the lead, the North-West Business School conducted extensive multi-disciplinary scientific research to study the merits of a proposed export tax on chrome ore and the influence thereof on the chrome–ferrochrome value chain. This document gives a synopsis of the research report. The research approach was one of the mixed methods, and, because of the multi-disciplinary nature of the problems facing the industry, the PESTEL analyses technique was followed.

From the research, it is evident that there are mostly positive but also some negative effects of the proposed chrome ore export taxation. Currently, many South Africa platinum producers sell South African chrome ore as a by-product in their mining process into the world, mostly China, at very low prices without beneficiating the ore in South Africa. This being the Chinese producers' main cost drivers and the only item over which South Africa has control over blessed with over 72% of the world's chrome resources together with the energy crisis and, specifically, Eskom pricing creates a major challenge for South Africa, but also for energy-intensive industries such as ferrochrome smelting. The rising electricity pricing resulted in China overtaking South Africa as the largest ferrochrome manufacturer, although South Africa holds over 72% of the world’s chrome resources.

The research made use of the Revealed Trade Index developed by Vollrath in

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1991, which showed that South Africa has a high level of competitiveness in both chrome ore and ferrochrome. However, it disturbing is to note that the level of competitiveness in ferrochrome shows a decreasing trend over time, whilst chrome ore is increasing. The opposite would be more favourable from an economic development perspective.

Making use of the SMART software (Software for Market Analyses and Restrictions on Trade), the analysis shows that chrome exports will decrease depending on the level of taxation but could potentially increase domestic ferrochrome production by between 53% and 107%, again depending on the level of taxation.

The study revealed that it is important to differentiate taxation between the various types of chrome ore — cheap UG2 (low-grade chrome ore produced as a by-product in the platinum process) should be levied at a higher rate than traditional mining of chromite seams. From the research, a differentiation of between 30% to 40% should be considered. Using the proposed taxation percentage of TIPS (2019, updated 2020) of 30% would result in 30% export taxation on traditional chromite seams and 60% to 70% on the by-product low-grade seams. Similar, using 10% as a base for the traditional seams will result in a 40% to 50% taxation on the low-grade seams.

Of late, case studies on interventions in countries such as Indonesia, India, Russia, Zimbabwe, and many others have shown that, when specific criteria are met, interventions such as export taxation are, overall, positive for the country.

The latest taxation applied as an interventionist measure is Indonesia, which has already banned several unprocessed ore exports, including nickel, tin, and copper, to stimulate downstream industry development, including batteries for electric vehicles and the aluminium industry. The country's president, Joko Widodo, said the country is planning to "hit the brakes" on the export of all commodities, to encourage investment and create jobs in the domestic economy.

With more detail given in this synopsis, it is evident that export taxation on chrome ore can be successful if it meets the following criteria: South Africa has significant market power, there is beneficiation capacity downstream, South African chrome ore cannot easily be displaced, and the country has the necessary know-how, knowledge, and capacity to beneficiate. From the research, it is apparent that South Africa meets these criteria in terms of the chrome sector. This said taxation should only be used as a short- to medium-term intervention to create a period within which to address domestic challenges such as energy.

In a question-and-answer session between President Ramaphosa and the North-West Chamber of Commerce and Industry on 8 October 2021, President Ramaphosa confirmed the government's intent to implement export taxation on chrome ore, to improve the chrome–ferrochrome value chain beneficiation narrative in South Africa.

“It is our time to proudly have South African decisions made for South Africans, which will, in turn, benefit the ailing South African economy.”

– Gadifele Mokgabudi (2021)

1. Introduction

Mining remains a sunrise sector that can still sustainably develop our country – DMRE, 2021

The sustainable development and subsequent growth of the chrome-ferrochrome value chain and its integration into the world economy becomes relevant in the context of South Africa losing out on its

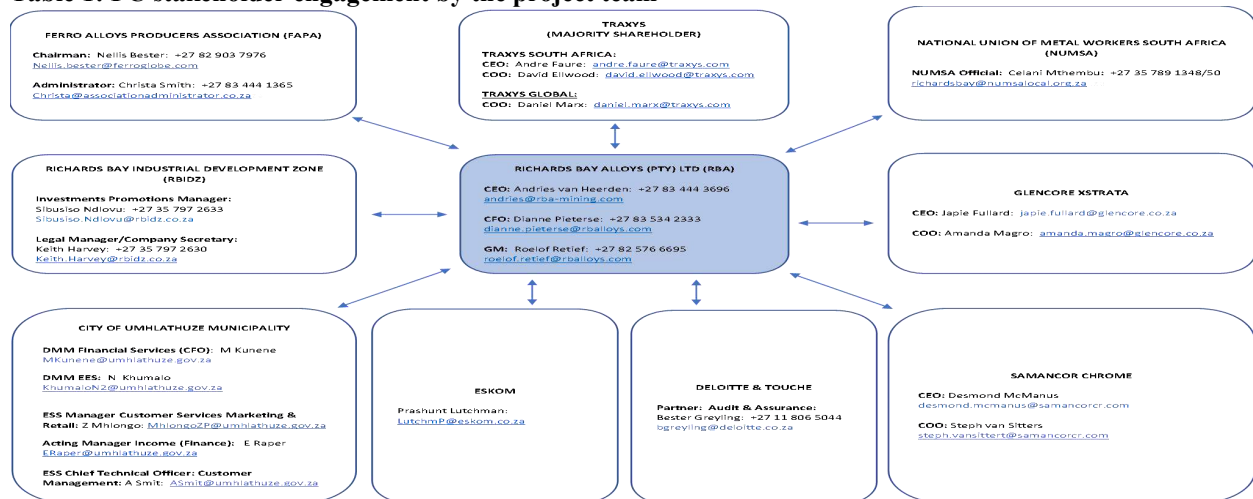
competitive position in terms of mineral raw materials reserves and related production. This research report argues the strategic importance to develop a sustainable and thriving ferrochrome industry in South Africa. The focus was on the broad (external) environmental context that affects the business of ferrochrome and its industry incumbents. Some of the research results from the Master Report (Lotriet et al.,2021) are documented in the next number of sections with its focus on some political developments, the macro economy, the micro-economic focus on export tax and the ferrochrome industry as such, some social issues, technology in this smelting space and the environmental changes that are going to be a big driver going forward.

2. Research Methodology

The research approach was one of the mixed methods, where secondary data were mined and qualitative data were generated through interviews with several influencers including C-suite executives, local government, organised labour, investors, a special economic zone representative and financiers of the broader ferrochrome ecosystem. The figure below illustrates the main stakeholders in the CFcVC-ecosystem.

The research team surveyed a comprehensive range of scientific publications (industry-specific news clips, textbooks, journals, authoritative websites, and existing datasets). It only included studies that have direct relevance to the title of the research project and reviewed cases where export taxes have been successfully utilised to further and protect the narrative of socio-economic beneficiation. Because of the multi-disciplinary nature of the problems facing the ferrochrome industry, the PESTEL analysis technique (Political, Economic, Social, Technological, Environmental, and *not* Legal factors) was followed to clarify the dominant threats to and opportunities for the industry going forward. Limitations to the study are also noted in the master report. The research focus on the context of the FC industry stakeholders – both from the private and public sectors of the economy, as a micro-economic consideration of the issues arising.

Table 1: FC stakeholder engagement by the project team



3. Political Issues²

The political landscape research spans the period from 2022 to 2029. Each society's political culture reflects the importance of the government, the legal system, the independence of the media, the nature of civil society, the formal and informal economies, and the architecture of the informal political economy. Issues for foreign investors include the governing party's views on sovereignty, political risk, taxes, equity dilution, and expropriation. When perceived risks are high, countries find it challenging to attract foreign investment. Political risk is, to a significant extent, impacted by economic risk. Despite beneficiation being official government policy, most South African commodities are exported with very limited beneficiation or benefit to the fiscus. President

² Only SOME of the issues are highlighted in this report. The full report is available.

Ramaphosa and the Minister of Trade, Industry, and Competition, Ebrahim Patel, have expressed, through numerous policy documents, support for the industrialisation of the South African value chain. With an unemployment rate of 34.4% in the second quarter of 2021, it seems logical and obvious that government would use all statutory means possible to encourage beneficiation. The ideal is for capital owners to find value in an evolving value chain.

It is assumed that the optimistic scenario of the current leadership being re-elected will prevail and justifications are provided. The political risks to stability are measured as high. The identified risks emanate from economic conditions of prolonged contracted growth and policy instability. The potential impact of stable supply chains and diversified value chains are presented as solutions, especially in mining and manufacturing. The political interests of the government weighed heavily on the mining and manufacturing industry. From 1990 to 2020, mining houses would gradually disinvest from the local economy as capital and shareholders sought more investment-friendly destinations. Value chains and beneficiation stabilize local political systems, allow communities access to socioeconomic mobility, and increase the prospects for a greater good negotiated between contending interests or adversaries. Disruptions in operations due to labour instabilities have always been a significant impact on the productivity of the South African mining industry. However, disruptions due to wages and conditions of employment are generally well managed by both unions and the mining industry. Bargaining forums and cyclical wage agreements mitigate prolonged strike actions.

The *Globaleconomy (2021)* assessment - see table 2, reflects the reason for concern in several indexes compiled to measure government frailty. With a value of 70/120, it is evident that the South African government is vulnerable to societal and economic instability. It is also apparent that the government's institutional capacity to pre-empt instability and manage volatility is challenged by budgetary constraints, poor management, and inadequate human resources. Factionalised elites (6.30/10), a result of government capture and the fragmentation of the governing party, security threats (6.40/10), uneven economic development (6.70/10), economic decline (8.30/10), and demographic pressures (7.10/10) culminated in the combustion that left the government disempowered and businesses exposed to violence and destruction – and as a consequence, disinvestment out of South Africa.

Table 2: Fragile Government Index

Fragile state index	Measure	Latest value	Reference
Fragile state index, 0 (low) - 120 (high)	index points	70.00	2021
Security threats index, 0 (low) - 10 (high)	index points	6.40	2021
Factionalized elites index, 0 (low) - 10 (high)	index points	6.30	2021
Group grievance index, 0 (low) - 10 (high)	index points	5.90	2021
Economic decline index, 0 (low) - 10 (high)	index points	8.30	2021
Uneven economic development index, 0 (low) - 10 (high)	index points	6.70	2021
Human flight and brain drain index, 0 (low) - 10 (high)	index points	4.90	2021
State legitimacy index, 0 (high) - 10 (low)	index points	5.90	2021
Public services index, 0 (high) - 10 (low)	index points	6.90	2021
Human rights and rule of law index, 0 (high) - 10 (low)	index points	4.20	2021
Demographic pressures, 0 (low) - 10 (high)	index points	7.10	2021
Refugees and displaced persons index, 0 (low) - 10 (high)	index points	4.20	2021
External interventions index, 0 (low) - 10 (high)	index points	3.20	2021

Source: (*Globaleconomy, 2021*)

Perhaps the most concerning indicator is the Fragile Government Index, which is a general assessment of a large number of defining variables reflecting the durability of the government or democratic regime. At 70/120, the government is considered vulnerable — at the high end of the measure - see the aggregate report for further deliberations on risk indicators, and the subsequent strengths and weaknesses of the South African political-economic environment.

4. The Broader Macro-Economic Context

The economic section of the report provided a comprehensive view of the South African economy as a whole, and the position in which the ferrochrome industry finds itself. The decline in the quality of services and logistical infrastructure and the exponential increase in energy cost exacerbated the almost impossible circumstances for exploration, manufacturing and beneficiation. South Africa remained a primary exporter of raw materials and an importer of luxury, finished products.

Major weaknesses exist in the South African economy, of which electricity generation and supply problems are the most important. Economic performance for 2020 is distorted owing to extended periods of Covid-19 lockdown, with an accompanying increase in unemployment to disturbing levels. With subdued growth, a downward phase of the business cycle and population growth at some 1.5% per annum, South Africa will not overcome current problems without renewed growth in investment. *Consequently, the most dismaying outcome of the disinvestment in the mining industry and investor hesitance in the other spheres of the South African economy is the absence of the urge to invest in value chains. Value chains result in a multiplier effect that generates employment opportunities and is at the heart of economic growth as it creates an environment conducive to reimagined economic opportunities.*

Changes in real GDP and other measures of the performance of the economy are shown in Table 3. One of the most disconcerting trends in the last few years has been the slow growth or decline in gross fixed capital formation, i.e. fixed investment in the economy. Low rates of investment lead to a reduced rate of increase in productive capacity in the economy and lower productivity, harming the future growth of the economy. Real investment spending fell by 3.5% in 2016, followed by a small increase of 1.0% in 2017, which was insufficient to eradicate the decline recorded in 2016. Since 2018, a declining trend was recorded (South African Reserve Bank, 2021). The sharp acceleration in the declining trend in 2020 can, in part, be ascribed to the impact of the Covid-19 pandemic regulations.

Table 3: The South African economy: Summary of performance 2015–2020

	2015A	2016A	2017A	2018A	2019A	2020A
Real GDP (% change)	1.3%	0.6%	1.2%	0.7%	0.1%	- 7.0%
Real gross fixed investment (% change)	2.5%	-3.5%	1.0%	-1.4%	-0.9%	- 17.5%
Exports (% change)	2.8%	1.0%	-0.1%	2.0%	-2.5%	- 10.3%
Imports (% change)	5.4%	-3.8%	1.6%	3.8%	-0.5%	- 16.6%
Inflation (average) CPI	4.6%	6.4%	5.3%	4.7%	4.1%	3.3%
Unemployment rate (annual average)	25.3%	26.7%	27.5%	27.1%	28.7%	29.2%
Current account: % of GDP (annual average)	-4.6%	-2.8%	-2.4%	-3.7%	-3.7%	2.2%
Interest rates						
Three-month JIBAR annual average	6.6%	7.4%	7.2%	7.2%	6.9%	4.4%
Prime overdraft rate end of period	9.75%	10.50%	10.25%	10.25%	10.00%	7.00%
Long-term bond annual average	8.17%	9.02%	9.09%	9.55%	9.15%	9.83%
Exchange rates						
US\$/ZAR (average)	12.77	14.71	13.26	13.19	14.50	16.46
€/ZAR (average)	14.10	16.22	15.06	15.61	16.18	18.77

Sources: Statistics South Africa, South African Reserve Bank, and own calculations from various sources

Lower economic growth plus lower tax collections put government revenue under pressure, which resulted in substantial borrowing to fund government deficits as expenditure continued unabated. This has brought South Africa close to the brink of the *fiscal cliff*, i.e. the point where civil service remuneration, social grant payments, and interest on government debt will exceed 100% of government revenue (Joubert & Rossouw, 2021). This measurement is done on the revenue side, rather than on the expenditure side, as overspending by the government has the perverse outcome of expenditure items, expressed as a percentage of total expenditure, improving for statistical reasons, without any real improvement taking place. The growth in government debt as a percentage of GDP is shown in Figure 1.

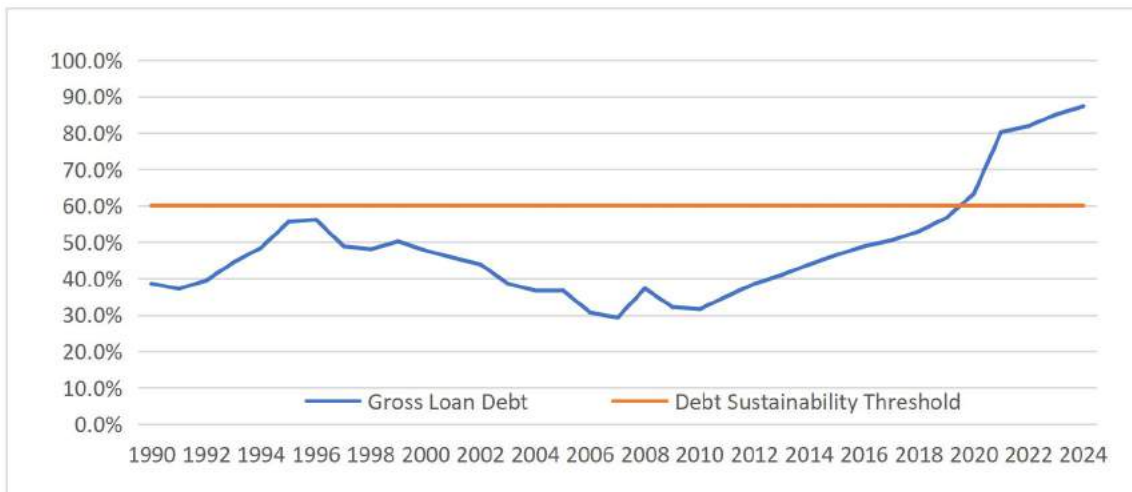


Figure 1: Government debt as a percentage of GDP since 1990 (South African Reserve Bank and National Treasury — Budget Review (various issues))

The growth in government debt is the result of escalating annual budget deficits of the government. The government recorded a surplus of revenue over expenditure in the years running up to the global financial crisis but subsequently ran substantial budget deficits, *inter alia*, in a failed attempt to rejuvenate and stimulate economic growth. However, the strategy focused on consumption expenditure, rather than investment expenditure, and did not deliver the desired result of increasing the rate of growth in the economy. It resulted in a substantial increase in government debt as a percentage of the GDP, depicted in Figure 1, above.

Using the above technique, unemployment as a function of various macroeconomic variables was modelled, including GDP and inflation. Also included in the model are various qualitative binary variables, often referred to as ‘dummy’ variables. These variables are essentially a device to classify data into mutually exclusive categories, and often assume values of zero and 1 (Gujarati & Porter, 2009). Dummy variables are included to capture large fluctuations in the level of the unemployment rate observed for the various years in the analysis period, notably from 2000 to 2003 (strong surge) and 2003 to 2008 (decline). These movements are likely linked to structural effects in the economy (qualitative aspects such as labour laws, ‘sentiment’, etc.), which are extremely difficult to capture in quantitative modelling, therefore justifying the inclusion of dummies. Figure 2 illustrates how the unemployment rate in South Africa has been generally trending upwards since the country became a democracy, while sharp (up and down) fluctuations are evident from 2000 to 2008.

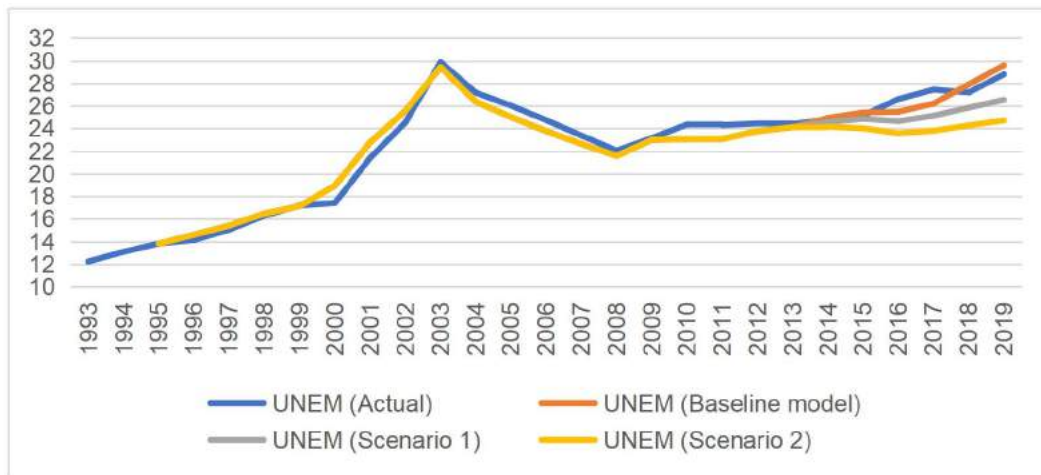


Figure 2: Model of unemployment and scenarios, 1993–2019 (Statistics South Africa and own estimates and calculations)

With more rapid economic growth, the growth in government revenue would have been higher than what has been recorded since 2014. By again using co-integration econometrics techniques, the impact of GDP growth on revenue could be analysed. Macroeconomic variables used for this purpose included the GDP, real interest rates, and money supply. *Two scenarios* were included, namely a constant GDP growth of 2.5% and 4.0% per annum respectively for the period 2014 to 2019. As expected, a positive correlation was found between GDP and government revenue, i.e. the amount of revenue collected is expected to rise as higher GDP growth is achieved (see Figure 3).

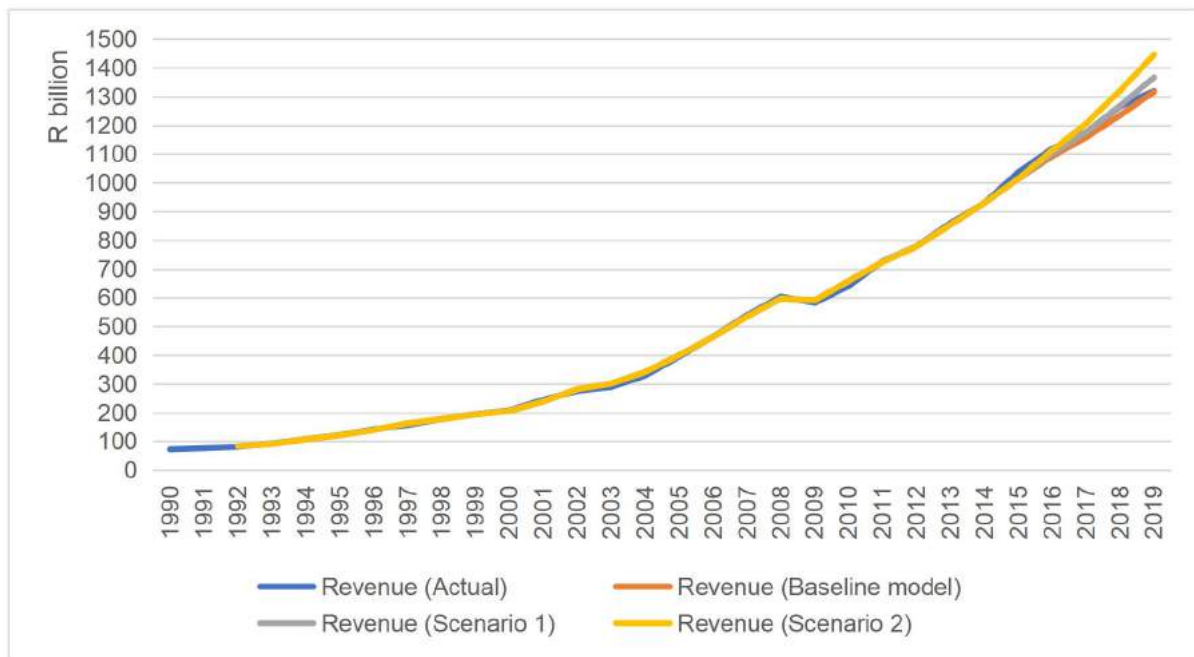


Figure 3: Model of revenue and scenarios 1990–2019 (National Treasury and own calculations)

- For **Scenario 1 (constant GDP growth of 2.5% for the period 2014 to 2019)**, the additional government revenue from actual tax rates for the respective years was estimated to rise from R0.1 billion in 2015 to R50.5 billion in 2019. On average, this was about 1.5% higher than the actual revenue collected in those years.
- For **Scenario 2 (sustained 4% economic growth rate for the same period)**, the impact was even larger, with as much as R129.3 billion (or 9.8% above actual collections) collected in 2019.

This highlights the importance of achieving sustained higher growth economic rates to have a meaningful impact.

5. Broad Mining Industry

Many parts of Africa have long been known to be rich in mineral resources. Eleven of its countries, especially in southern and western Africa, rank among the top ten sources of at least one major mineral. Many African countries have been perceived as posing high political and economic risks for investors, and subsequently, now less appetite for the relatively high risk that usually comes with mining. According to the latest South African Reserve Bank Quarterly Bulletin (SARB, 2021) the mining sector as a whole contributed about 55% to South Africa's total merchandise exports. This figure alone indicates that South Africa is resource-driven and highly dependent on this sector. South Africa dominates in connection with more than one resource holding in the Top 10 globally. The mining value chain in South Africa is the historic bedrock of South Africa's economy. It directly contributes more than 300 billion Rands to GDP, employs more than 450,000 people and is the economic anchor of many communities around the country (Cassim *et al.*, 2019). Unfortunately, much of the news about South African mining in recent years has been negative. Total mining employment has fallen by approximately one-tenth in the last 10 years—a net loss of more than 50,000 jobs. Moreover, McKinsey analysis shows that the productivity of South African mining operations for key commodities has declined over the past five years, even as mining companies in other regions have made rapid gains in productivity. *To date, resource-driven countries have tended to underperform those without significant resources*: almost 80% of the former have a per-capita income below the global average. More than half of these countries have failed to match the average growth rate of all countries. Only one-third have maintained growth beyond the resource boom

In the main, South African minerals have been extracted, subjected to processing and then, the majority of that exported as ores without beneficiation. In this regard, SEZ (Special Economic Zones) have been established some years ago, but are found lacking in the development of value chain businesses. The SEZ programs should be part of the national or regional development strategy and based on the most suitable model which depends on the local comparative or competitive advantages. One of the key objectives of SEZs is to overcome the constraints of doing business in an economy. In line with the operational realities on the ground, the World Bank's latest metrics indicate that South Africa has deteriorated further in this regard. South Africa is ranked 84 among 190 economies in the ease of doing business, according to the latest World Bank annual ratings (Trading Economics, 2021). The Ease of Doing Business Index ranks countries against each other based on the extent to which the regulatory environment is conducive to business operations and the strength of protection of property rights. Economies with a high rank (1 to 20) have simpler and more friendly regulations for businesses. The rank of South Africa deteriorated to 84 in 2019, from 82 in 2018 (Trading Economics, 2021, World Bank).

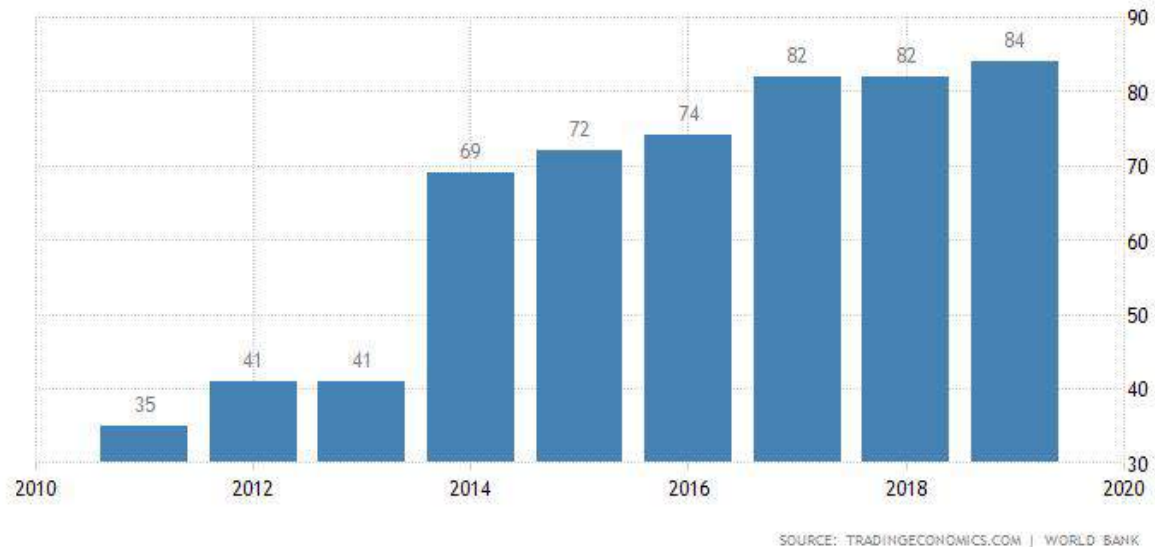


Figure 4: The ease of doing business in South Africa (Tradingeconomics,2021)

In the pioneering Chinese zones, all basic infrastructures are provided with high quality and with one-stop-shop services and efficient aftercare. In the case of SA, our SEZs are not that special after all. The key driver of ferrochrome demand is the Chinese stainless steel demand, and ferrochrome supply is highly dependent on electricity supply and pricing. The chrome ore sector is not very power intensive. However, beneficiation of ore, i.e. FeCr sector is high power dependent. This said it stands to reason that since the kwh/USc stayed flat and since SA switched off furnaces, not due to constraint in power but rather due to China being cheaper, the issue lies somewhere else. In this regard a mining executive commented - *SA has the potential to control one of the highest expenditures of Chinese FeCr, i.e. ore price. Especially also considering that you need to transport 2.2t of chrome ore across to the far east to make 1 tonne of FeCr. To be honest, I don't know of one smelter in SA that closed because Eskom did not have power. Secondly, since 2010 (i.e. before we were pushed down from the biggest to second biggest producer of FeCr, electricity pricing in USD terms stayed relatively flat).*

SA dump millions of tonnes of UG2 chrome ore at very low price levels, hence SA reducing China's COP on behalf of China. Power stays an issue, but not the biggest contributor to the demise in the beneficiation industry is the dumping of ore.

This research confirms South Africa's strong market position in the chrome and ferrochrome industries, with China being the dominant export market. Even though South Africa has a high level of revealed competitiveness, the country experienced a slowly declining trend over time for ferrochrome production, while chrome ore production is increasing. *This means that the country's level of specialisation is now higher for raw materials than for the processed products.* As one mining executive remarked- *"Power is a concern, however we exported the industry to China, by making its highest cost component dirt cheap by dumping ore in China. With subsidising power to their smelters and having low-cost labour they could take over the industry"*. The revealed level of competitiveness of South Africa's exports of chrome ore and ferrochrome for the period 2002 to 2020 is calculated with the Revealed Trade Index (RTA). *The concern is that since 2012 the country's level of specialisation in raw materials is now higher than for the processed product.* This is cumbersome from an economic development perspective as the opposite would be more favourable.

One of the options that have been proposed for South Africa to regain its competitive position in the ferrochrome industry, is the implementation of an export tax on specific chrome ores. The report argues that an export tax can only be beneficial in cases where the country has significant market power with no real substitution options and, according to industry executives no significant retaliation is expected as a backlash. Hence, countries with dominant ore reserves have the incentive to apply an

optimal export tax rate that maximises welfare. “Producers of FeCr in SA reduced production as it could not compete against China. Interestingly we now see the subsidies for power in China are removed, smaller smelters are closed down (look at South of China), and labour is not as cheap anymore. SA should be able to beat them hands down as we control ore” (Mining executive, 2021).

Even though export control measures can have a positive effect on countries with market power, the question is whether it leads to increased downstream-, side-stream-and upstream processing in the domestic market. Export taxes have had varied effects in different countries around the world and in certain instances, they did not have the desired effect to increase downward processing or value-added activities, as an export tax alone cannot drive such an effect. An export tax can achieve the goal of decreasing the volumes of products exported to the foreign market, but to gain in the domestic market the product retained domestically should be converted into a successful domestic downstream industry.

Figure 5 shows South Africa’s broad product³ composition of chrome exports for 2002, 2010 and 2020. Exports have been dominated by chrome ores and ferroalloys with >4% carbon. In 2002 there were some exports of ferroalloys with <4% carbon as well as some other chromium products, however, their proportion in exports has diminished by 2020. The main structural trend derived from the Figure is the significant proportional contribution of chrome ores. In 2002, only 7% of chrome exports consisted of ore and by 2020 this share increased to 40%. Hence, the contribution of processed ferroalloy (HS720241) became much smaller over time, indicating that South Africa is exporting more raw materials and less processing is being done locally for these products.

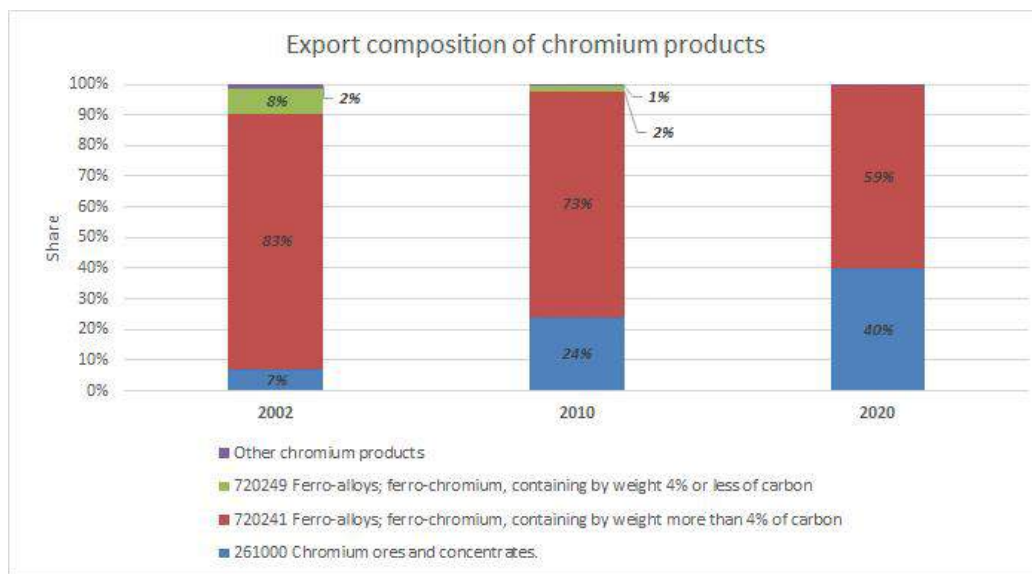


Figure 5: South Africa’s export composition of chromium products: 2002, 2010, 2020 (Source: Authors’ own compilation based on data from UNCOMtrade, 2021)

In 2020, China was still the dominant export market, but its share decreased slightly to 61%. and a small share directly to Indonesia (4%). Compared to 2002 and 2010, the proportion of exports to other markets decreased to 11% by 2020. Overall, the export markets for chrome ore have become more concentrated over time. This would indicate that all processing of chrome ores is now occurring in China, and as indicated in the previous graphs, the processing of ferrochrome has been moving to the Chinese producers over time. It clearly emphasizes the “export” of the ferrochrome industry to China, with more ore sold than beneficiated ferrochrome.

³ Classified at the six-digit level of the 2020 version of the Harmonised System (HS)

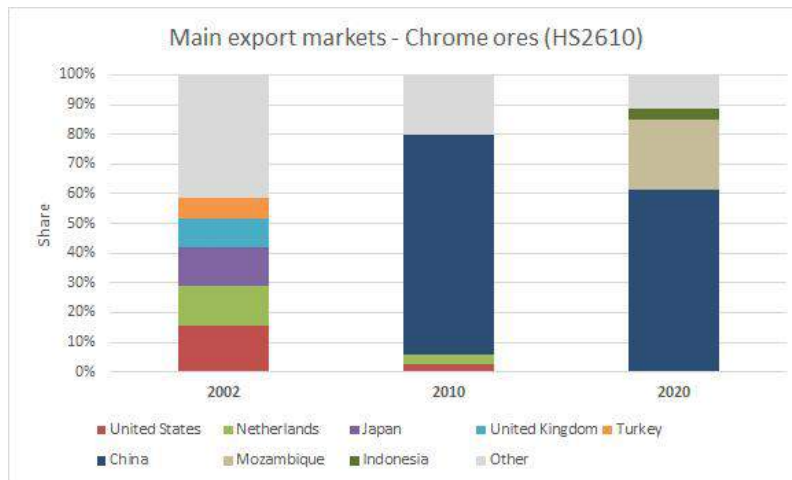


Figure 6: Trend in SA's main export markets of chromium ores (2002/2010/2020) (Source: Authors' own compilation based on data from UNCOMTrade (2021))

Revealed competitiveness

The revealed level of competitiveness of South Africa's exports of chrome ore and ferrochrome for the period 2002 to 2020, was calculated as the Revealed Trade Index (RTA). The RTA index is deemed a good proxy for the revealed level of a country's product specialisation. An index value of more than zero implies a revealed specialisation in production. Figure 7 presents the results of the analysis. Given the relative level of the RTA indices, it is an event that South Africa has a high level of revealed competitiveness in both chrome ore and ferrochrome. The level of competitiveness in ferrochrome shows a slowly decreasing trend over the depicted period, while the level of competitiveness of chrome ores shows an increasing trend. In 2012, chrome ores surpassed ferrochrome in terms of competitiveness. **This implies that since 2012 the country's level of specialisation in raw materials is now higher than for the processed product.** This is cumbersome from an economic development perspective as the opposite would be more favourable.

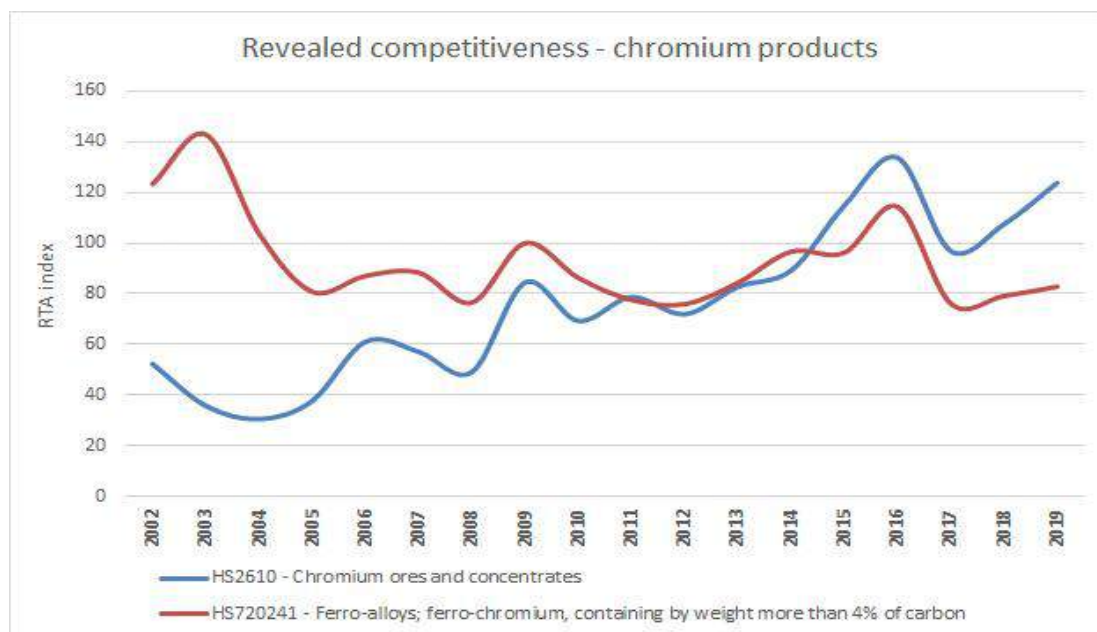


Figure 7: Trend in South Africa's revealed competitiveness of selected chromium products (2002 - 2019). Source: Authors' own calculations based on data from UNCOMtrade (2021)

China is South Africa's main export market for chrome and ferrochrome. For chrome ores, South Africa's closest competition is Turkey and Zimbabwe (see next figure), however, these suppliers have not been able to come close to the export figures of South Africa in the last decade. *This could*

indicate that South Africa can not easily be displaced as a global supplier, and should in theory be a price setter globally.

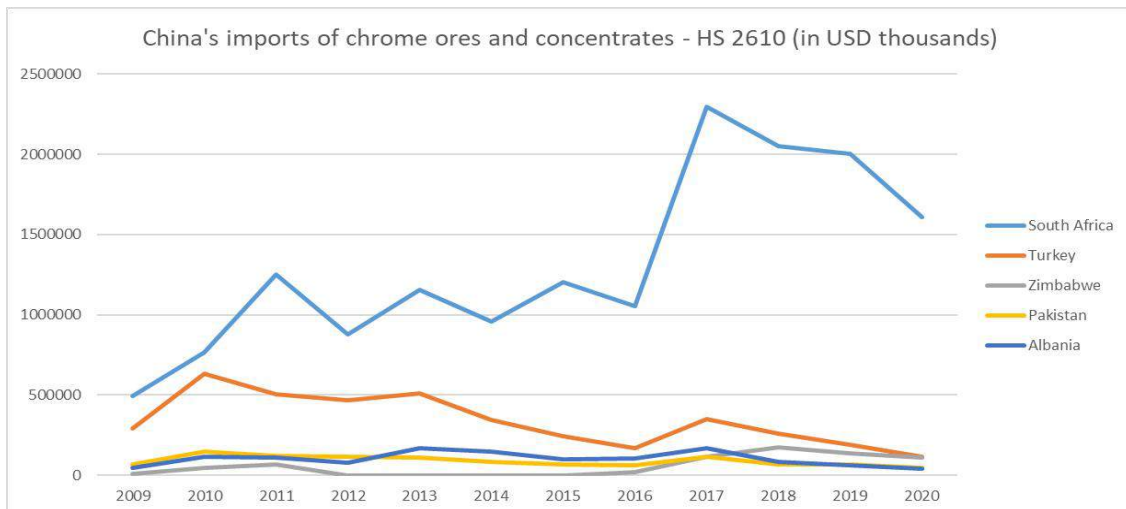


Figure 8: China’s imports of chrome ore and concentrates – HS code 2610 (2009 - 2020) *Source: Authors’ own calculations based on data from ITC (2021)*

With South Africa’s strong global position in the chrome sector, as a clear market leader, it is crucial to sustaining this industry, especially the production of ferrochrome in the local market to increase South Africa’s competitiveness. But, the above graph indicates again. Thus, the suggestion to implement export taxes as a means to grow local beneficiation and further developments of the sector. It is also important to consider how the export tax should be implemented: it would be best to implement it as an ad valorem tax, and it would be economically efficient if it is kept simple and could utilise existing legislative and operational frameworks such as the new Customs & Excise Act of 2020. An export tax does not sever the link between domestic and global markets but rather creates a wedge between domestic and international prices. This gives domestic consumers a cost advantage. Due to the vast differences between the cost of producing UG2 and the cost of production of traditional chrome ore, it follows that export tax rates or tariffs would have to differentiate between different seams. It will also be necessary to create new HS-codes for the different forms of ferrochrome since it does not exist in the current taxation framework of SARS⁴.

It now seems that South Africa has exported its competitive advantage in the production of ferrochrome to China. The next section focuses on issues in the ferrochrome industry.

Some issues in the Ferrochrome Industry in South Africa

Data from Trade and Industrial Policy Strategy (TIPS) (Unpublished Report, 2021) indicate that chrome ore export prices have eroded, which can be explained by the increase in the availability of a low-cost by-product — UG2 chrome concentrates — produced by operational platinum mines. Trends in the pricing of chrome ore are detailed in the table below.

⁴⁴ This also limits the data analysis that could be done up to this point, as current export and import data for ferrochrome is only captured at a high level (as indicated in the economic section of the report) and the data does not distinguish between UG2 and other levels of ferrochrome.

Table 4: Chrome ore pricing history

Year	40/42 UG-2 Publication	38/40 ROM ⁵ Publication	Premium/Discount to UG2	40/42 ROM Publication	Premium/Discount to UG2
2017	US\$215/Mt	US\$201/Mt	-US\$14/Mt	US\$219/Mt	US\$4/Mt
2018	US\$190/Mt	US\$182/Mt	-US\$8/Mt	US\$202/Mt	US\$12/Mt
2019	US\$155/Mt	US\$152/Mt	-US\$3/Mt	US\$168/Mt	US\$13/Mt
2020	US\$135/Mt	US\$140/Mt	\$US5/Mt	US\$154/Mt	US\$18/Mt

Source: TIPS (2021)

TIPS (2021) also provided a comparison of Chinese and South African ferrochrome production costs for the period 2017 to 2019. The 2019 figures were used to create the table below. As can be seen from this table, based on the 2019 figures, at least USc/lb of 3.70 is required to even out cost. This relates to an 11% increase in the 2019 ore price based on a USc/lb basis.

Table 5: Ore price increase to even out costs based on TIPS (2021)

	China 2019		South Africa 2019		% Difference China vs SA
	USc/lb	%	USc/lb	%	
Ore	33.3	45.00%	16.3	20.98%	51%
Power	15.7	21.22%	23.4	30.12%	-49%
Labor	2.8	3.78%	3.7	4.76%	-32%
Reductants	11.3	15.27%	15.4	19.82%	-36%
Other	9	12.16%	12.3	15.83%	-37%
Delivery Cost	1.9	2.57%	6.6	8.49%	-247%
Total	74	100.00%	77.7	100.00%	
Requirement to get prices equal USc/lb				3.70	
New ore price required in China				37.00	
% increase in ferrochrome ore input cost required based on 2019				11%	

(Source: Reworked table from TIPS, 2021)

These tables indicate the impact of increasing electricity prices and reductions on the price of ore imported by China. China and others have consequently been able to produce ferrochrome at costs lower than those of South Africa. Electricity pricing remains a concern, as the South African electricity price is not only relatively higher than that of China and Indonesia but is increasing while others have been able to contain these costs. This, together with the low-cost ore supplied into China, resulted in a continuous decline of the South African ferrochrome industry.

The sector is a significant contributor to the South African mining sector, and South Africa plays a significant role in China's stainless steel value chain. Mining Weekly (2021) indicated that China is responsible for 53% of global stainless steel production, using several inputs, including ferrochrome, and, South Africa is the main supplier of ferrochrome. However, China's local ferrochrome production has continued to increase, while South Africa's production continues to fall, mainly due to rapid increases in the cost and the unreliability of electricity supply, as well as the selling⁶ of UG2 ore.

⁵ ROM = Run-of-mine ore, referring to unbeneficiated or untreated ore.

⁶ Note: Information is drawn from CRU cost data which has been calculated as weighted average based on total production and individual company costs)

Export composition

Figure 5 earlier indicated South Africa's broad product⁷ composition of chrome exports for 2002, 2010, and 2020. Exports have been dominated by chrome ore and ferrochrome with > 4% carbon. In 2002, there were some exports of ferrochrome with < 4% carbon and other chromium products; however, their proportion in exports diminished by 2020. The main trend evident from the figure is the significant proportional contribution of chrome ores. In 2002, only 7% of chrome exports consisted of ore, and, by 2020, this share had increased to 40%. Hence, the contribution of processed ferroalloy (HS720241) became much smaller over time, indicating that South Africa is exporting more raw materials, and less processing of these products is being done locally.

Export markets in chrome

Overall, the export markets for chrome ore have become more concentrated over time. This is shown in Figure 9, which depicts the number of export markets and their respective share in chrome exports for 2002, 2010, and 2020. In 2002, the export destinations for chrome ore were relatively diversified, with the USA, the Netherlands, Japan, and the UK as the main destinations. In the same year, a large proportion was also exported to a wide range of other countries (41%). By 2010, the number of export markets was much more limited and was dominated by China, which absorbed 74% of total South African chrome ore exports in that year

In 2020, China was still the dominant export market, but its share decreased slightly to 61%. Figure 11 also shows that Mozambique was the second-largest export market in that year with a share of 24%. It is important to note here that the ultimate destination for chromium exported to Mozambique is mainly China. This is also evident from the Tax Report (October 28, 2021) that indicates that, in 2020, an amount of 11 723 104 tonnes was exported to China, out of a total of 14 321 951 tonnes. Therefore, South Africa's direct and indirect exports to China added up to 85% in 2020. Furthermore, in 2020 a small share was exported to Indonesia (4%), mainly because of tax-like interventions by the Indonesian government (in line with the argument of this report).

Compared to 2002 and 2010, the proportion of exports to other markets had decreased to 11% by 2020. Overall, the export markets for chrome ore have become more concentrated and more focused on China over time. This indicates that the processing of chrome ore in China has increased - aggravated through the woes of Transnet, implying that Mozambique (the Maputo port) is just the "new" gate increasingly servicing China

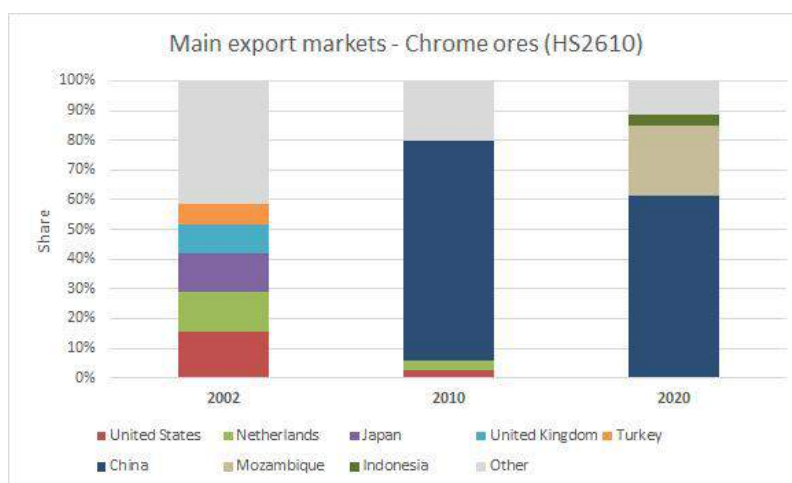


Figure 9: Trend in SA's main export markets of chromium ores (2002/2010/2020) (Own compilation based on data from UN ComTrade, 2021)

Figure 10 shows the changes in the export patterns for ferrochrome. In 2002, most ferrochrome was exported to Japan, Germany, Italy, and France. Combined, these markets absorbed 52% of South

⁷ Classified at the six-digit level of the 2020 version of the Harmonised System (HS)

Africa's exports. In 2010, the proportions exported to Japan and Germany decreased, and exports to China and South Korea gained momentum, with shares of 25% and 11% respectively. Exports to Italy and France had halted by 2010. By 2020, exports to Japan had also diminished, and exports to Germany had ceased. However, new export markets such as the USA, the United Arab Emirates (UAE), and Indonesia surged to a combined share of 32% of exports. China had consolidated its position as the dominant export market by 2020, with a share of 41% in South Africa's ferrochrome exports.



Figure 10: Trend in South Africa's main export markets of ferrochrome: 2002, 2010, and 2020 (Own calculations based on data from UNComTrade, 2021)

Comparison with other chrome producers

The following graph shows that South Africa remains the largest exporter of both chrome ore (HS Code 2610) and ferrochrome containing more than 4% carbon (HS Code 720241). Note that China is the largest ferrochrome producer; however, China uses ferrochrome directly in its downstream stainless steel industry, leading to insignificant chrome ore exports from China. South Africa's exports of chrome ore are significantly larger than those of any of the competing nations, i.e. Turkey, Pakistan, Kazakhstan, and Zimbabwe. Zimbabwe banned all exports of lump ore, and will ban all concentrate exports from June 2022 — this will reduce imports into China from Zimbabwe by at least 568 843 tonne, based on 2020 figures. Furthermore, Kazakhstan exports only to Commonwealth of Independent States (CIS) countries, mainly Russia, which explains some of the declining trends illustrated in Figure 12. The graph does, however, show a large spike in 2017, and thereafter a significant decline up to 2020 (note that, although China is not in the top 10 countries exporting chrome ores, it was added to the graph for purposes of comparison between South Africa and China). Therefore, *displacement of South African chrome ore will not be easy*, especially when considering interventions implemented by many countries.

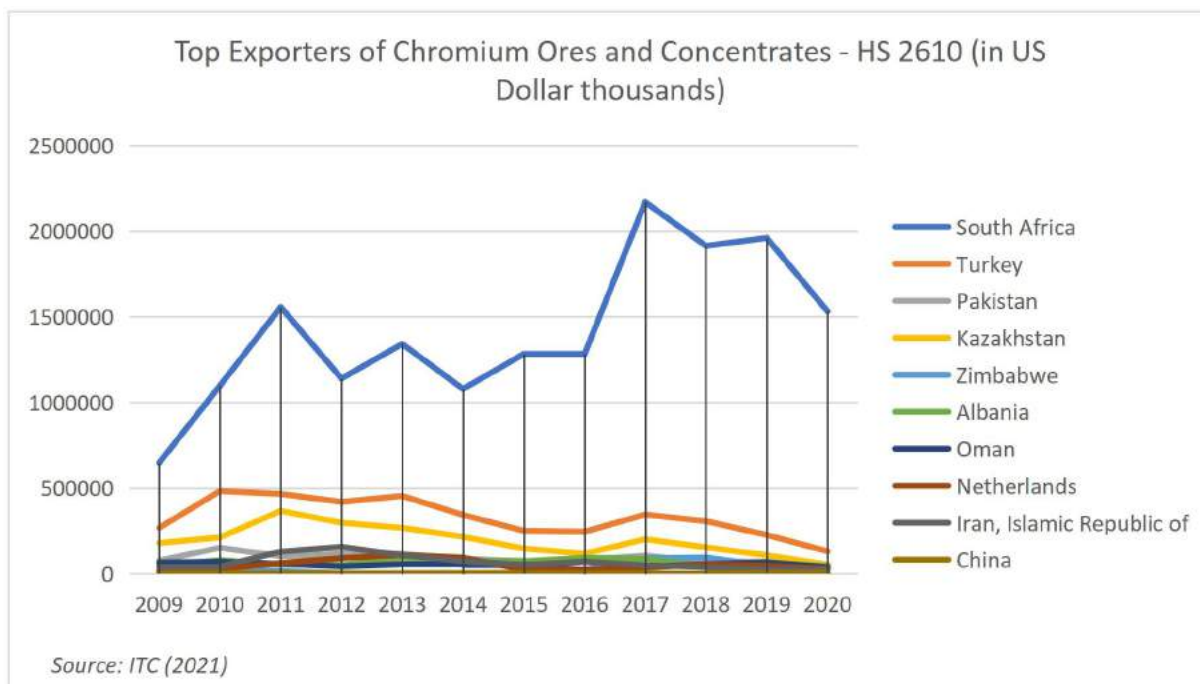


Figure 11: Top exporters of chromium ores and concentrates (HS code 2610) 2009–2020. (Own calculations based on data from ITC, 2021)

South Africa has been the leading exporter of ferrochrome (containing > 4% carbon — HS Code 720241); however, the competing nation of Kazakhstan was able to match South Africa’s export figures in 2012. Thereafter, South Africa remained in the top position, but the data show a declining trend over time.

6. Export Restrictions

Genesis Analytics contradicted the TIPS (2020a) report significantly in their unpublished report (“GA 2020”). GA 2020 highlights the potential impact that a decrease in exports due to an export tax could have on mining employment, especially in non-integrated mining. They also indicate a series of “leakages” that would undermine the goal of increasing the global ferrochrome prices, including the exercise of countering power by Chinese purchasers against SA chrome exporters, the absorption of the additional cost by the government-supported Chinese ferrochrome and stainless steel industries to retain market share, and retaliatory measures by the Chinese government against South African ferrochrome exports.

The GA 2020 analysis predicts significant impacts on employment in the South African non-integrated chrome mines and no compensating increase in employment in the integrated mines. This, together with no guarantee that the downstream industry will benefit from an export tax, will therefore not necessarily achieve the intended outcome. GA 2020’s analysis also suggests that South Africa is not immune to competitive constraints and that the introduction of a 30% export tax would materially impact the competitive structure of global supply.

In contradiction, the 2021 TIPS issued a response to the GA 2020 report in which they argue that the export tax would be an incentive to local ore producers to sell their product locally and for the chrome ore to be beneficiated locally rather than incurring an export tax. Domestic ferrochrome producers would have a price advantage over ferrochrome importers which are reliant on SA ore. The objective of the tax would be to create the conditions to add more value to chrome ore in South Africa, and further develop South Africa’s mineral wealth.

Besides the two counter-arguments by TIPS and Genesis Analytics, there have been several other voices in the media raised for and against the export tax on chrome exports. SaveSA Smelters have

been very vocal in terms of the large number of jobs that are on the line if the government fails to implement the export tax (Mining Review, 2021).

The main argument is therefore to stop the exports of raw materials so that it can benefit local production through local development of the industry. In the past, South Africa was a leader in the supply of steel and they argue that South Africa can again be repositioned as a country of choice to international investors in the steel and stainless steel value chain. The export tax can be used as a mechanism to establish such a local value chain.

The main advantage of the PE vs the Computable General Equilibrium (CGE)⁸ approach, which analyses all markets simultaneously, is that relatively few data items are necessary. The only required data for a PE analysis is trade flows, the trade policy (e.g. tariffs), and values for some behavioural parameters (mainly elasticities). Another advantage is that it permits analysis at a relatively disaggregated level so that the decision-maker can focus on a particular product (e.g. a specific tariff line). Moreover, PE models look at the market for one product at one time, ignoring cross-product effects and ignoring general equilibrium effects (such as changes in wages, GDP, aggregate demand, etc.) and how those variables may, in turn, affect the markets for chrome ores. If the shifts in the markets in question are small concerning the overall economy, this is a somewhat reasonable simplification.

The next figure presents the likely impact of three simulation scenarios on South Africa’s exports of chrome ore to China. *It is evident from the figure that the impact will be significant for all three scenarios and ranges from potentially 32 to 65% less exports.* Recall that 61% of South Africa’s exports of chrome ore in 2020 was destined for China. The export levy will thus have a relatively large impact on total chrome exports as well.

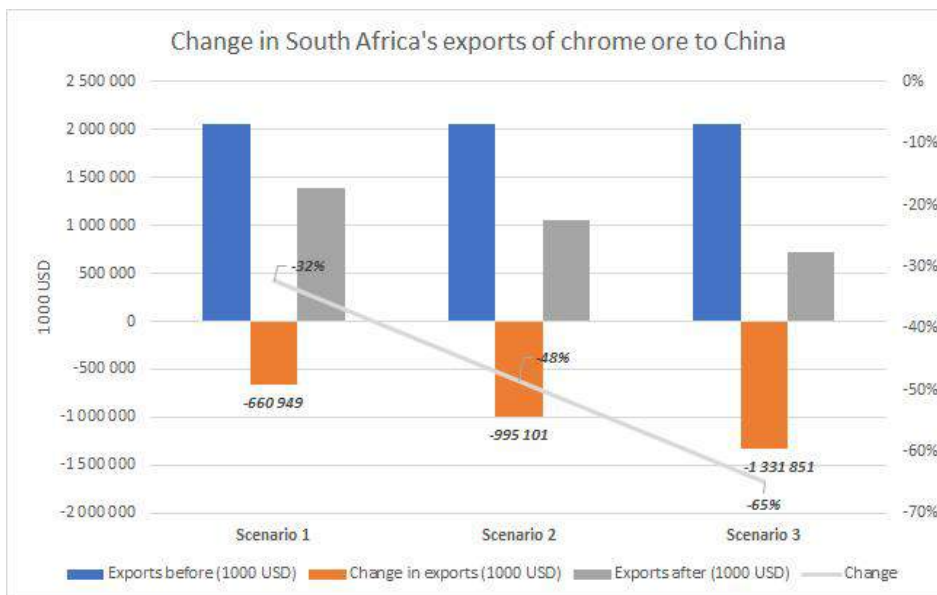


Figure 12: Simulation results of changes in South Africa’s exports of chrome ores
(Source: Authors’ own calculations based on SMART simulations, 2021)

The impact of the likely increase in the local supply of chrome ores on the production of ferrochromium is depicted in column five of the next table. The proportional effect of this increase on South Africa’s total ferrochrome production is shown in the last column. Hence, an export levy of 20% on chrome ores will likely lead to an increase in local ferrochrome production of 5%, a levy of 30% to an increase of 80% and an export levy of 40% to an increase of 107%percent.

Table 6: Potential impact of the trade effects on the local chrome industry

⁸ In a general equilibrium setup, all markets are simultaneously modelled and interact with each other.

	Potential decrease in total chrome ore export value (% change)	Potential volumes of chrome ore available for the local market (Kt)	Potential increase in chrome ore volumes available for the local market (% change)	Potential increase in ferrochrome production (Kt)*	Potential increase in total ferrochrome production (% change)
Scenario 1-20%	-28%	3 982	18%	1 731	53%
Scenario 2-30%	-43%	5 995	26%	2 606	80%
Scenario 3 80%	-57%	8 023	35%	3 488	107%

Note: *chrome ore / ferro-chrome production ratio: 2.3 (Source: authors' own calculations based on data from SMART model, CRU and DMR, 2021)

Finally, Figure 14 breaks down the total trade effect of the three scenarios into *trade creation and trade diversion effects*. From the perspective of South Africa, these are both negative but from China's perspective, only the trade creation effect would be negative. It is evident that the negative trade creation, which reflects the effect of South African chrome exports becoming more expensive, contributes the most (73% of the total effect) to lower export levels in all three scenarios. Trade diversion, which reflects the effect of relative prices between South Africa and other chrome ore exporters to China, has a lower impact (28% of the total effect). The latter thus reflects the extra export flows to China from other suppliers because South Africa's exports have become more expensive as a result of the proposed export levy, but only true if the other countries have the material to supply.

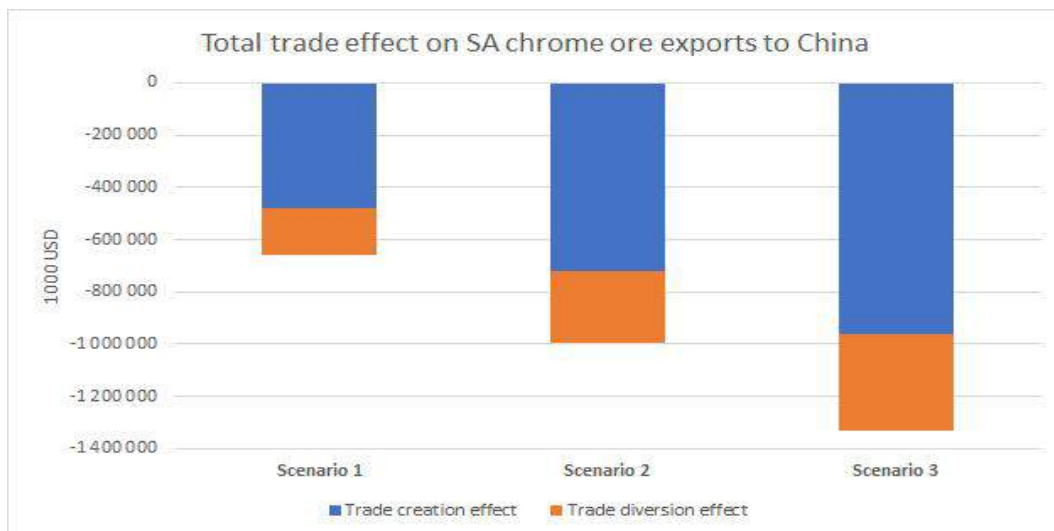


Figure 13: Simulation results of the trade effects on South Africa's exports of chrome ore to China (Source: Authors' own calculations based on SMART simulations, 2021)

Some reflection on other countries to eliminate competition

Countries apply export restrictions as trade policy instruments, to either control or ban the exports of certain products. These restrictions can have a direct impact on the volume of the products' export, or indirectly by increasing the cost of exporting the product. Direct measures usually include export quotas, which restrict the volume of products exported, or export bans, which completely prohibit the exports of products (Estrades *et al.*, 2017). Indirect measures mostly take the form of export taxes. These can be explained as an *ad valorem* rate, a specific rate, or a combination of both and in many cases, a combination is used. Other export restrictions can include non-automatic export licenses, refusal of reimbursement of value-added-tax (VAT) on exports, or mandatory registration of exporting firms, among others.

In England, export taxes were applied to raw wool and hides as early as 1275 to 1660 to promote domestic industry processing. As wool-manufacturing capacity grew in England “so did the export duties, until England had the sufficient production capacity to process all the wool they produced” (Reinert, 2008: 80). Many have attributed the Tudor Plan as being the foundation of England’s industrial greatness. The Florentines were not able to compete with their English counterparts because the export duties on English raw wool ensured that raw wool was going to domestic producers for processing (Reinert, 2008: 80). Like Venice and Holland, and by the same methods, England had acquired the same triple rent situation: a strong industrial sector, a raw material monopoly (wool), and overseas trade.

Meanwhile, the United States was attempting to develop a smelter industry; however, they needed to import raw tin from the British Colonies. The larger export tax made this difficult for the US and eventually all the new smelters in the US were forced to shut down since the industry was not able to compete. According to the Governor of the Federated Malay States, the export tax had accomplished its intended objective. He stated that the export tax was exacted “*for the purpose of preventing the transfer of the smelting industry to the United States*” (James, 1924: 57).

Therefore, the implementation of an export restriction or export control measure, is greatly dependent on the sector itself, other local factors that contribute to the cost of exports, as well as the country’s position in the world market. However, as indicated earlier, in theory, countries that have market power in a certain product, may gain from implementing an export tax measure. This is the case of the Chrome Iron Ore sector in South Africa, from trade figures depicted in the previous sub-section, and it is possible that the implementation of such a tax in a sector where South Africa is a market leader, may have potential benefits.

The implementation of an export tax has had varied effects in several industries and countries around the world. Data from the World Bank in the table below indicates the % of export taxes in total tax revenue in several countries from 2000 to 2017. The data was sorted from the highest to lowest and the table shows the top 20 countries according to the contribution of export taxes to total tax revenue. South Africa is added for this report’s focus.

Table 7: Export taxes as % of total tax revenue: 2000 – 2017

Country	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017
Solomon Islands				18.55	18.30	17.03	19.72	21.04	22.28	21.99
Russian Federation	16.44	37.63	41.84	44.61	43.37	43.31	43.73	31.59	26.02	20.94
Kazakhstan	0.05		17.46	15.69	11.08	25.42	26.88	22.89	17.35	20.61
Cote d'Ivoire		21.00	13.31	17.38	12.23	13.95	14.17	16.01	16.25	16.79
Belarus		3.74	5.95	15.98	13.69	10.63	6.69	23.48	18.40	16.22
Guinea-Bissau										11.37
Argentina	0.12	15.23	20.78	19.30	17.99	13.08	14.00	9.76	7.06	5.56
Papua New Guinea	13.12						2.68	3.45	3.49	3.25
Uzbekistan								0.00	0.00	1.65
Central African Republic			2.30	2.45	2.13		1.41	1.44	1.55	1.26
Tanzania					0.56	0.38	0.30	0.63	0.41	0.91
Cameroon					0.43	0.59	0.68	0.72	0.70	0.91
Afghanistan			0.03	0.17	0.21	0.07	0.11	0.11	8.45	0.87
Malaysia	2.12	2.59	1.65	1.54	1.30	1.24	1.15	0.63	0.58	0.76
Bahamas	1.52	1.57	1.44	1.10	1.29	1.28	0.87	0.63	0.77	0.51
Fiji		1.05	0.72	0.49	0.44	0.25	0.48	0.42	0.43	0.35
Togo		0.20	0.58	0.60	0.48	0.52	0.44	0.58	0.50	0.32

Cambodia		4.76	2.53	3.56	2.69	2.94	2.29	1.68	0.26	0.32
Indonesia			1.23	3.30	2.17	1.47	0.99	0.30	0.23	0.31
Vanuatu					0.00	0.01	0.01	0.05	0.07	0.28
South Africa		0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Source: World Bank (2021)

The table indicates that the top 5 countries that gain some advantage from export taxes as revenue, are the Solomon Islands, Russia (although there is a declining trend between 2010 and 2017), Kazakhstan, Cote d'Ivoire and Belarus (which has seen a drastic increase in export taxes as a % of tax revenue). South Africa, on the other hand, has only imposed export levies on unpolished diamonds, and some agricultural goods (Sandrey, 2014) and recently on the export of scrap metal. The data shows that some countries gain some revenue advantages from export taxes, and South Africa not really utilising this trade intervention despite being a resource-rich economy. If we calculate for 2020 the contribution of the mining sector to total merchandise exports (R767422 / R1394346), then this sector alone contributed 55% to our total merchandise exports (SAResbank, 2021)

Zimbabwe has the world's second-largest reserves of high-grade chromium ore after South Africa (12% of the global total). Z banned the exports of chrome ore in 2011 and removed the export restrictions in 2015. Z has banned exports of raw chrome ore with immediate effect this year and will ban exports of *chrome ore concentrate* from 2022 **to secure its ferrochrome industry**. Although the ban on chrome concentrates is yet to be effected (The Standard, 2022) it is reported the Chinese are currently producing chrome concentrates in Zimbabwe which finds its way outside the country. The export ban of chrome in Zimbabwe also emphasizes the rationale of an export tax for South Africa – **with a total of 22 smelters now operational and are shared among several foreign and local mining companies**. It was pointed out that unless chrome mining capacity is expanded, the smelting operations could face the challenge of insufficient feedstock. The balance of what is not consumed domestically by the ferrochrome industry, is exported to China (4% of China's chrome ore imports of roughly 14 million tonnes). The competitive price of Zimbabwe's ore – similar to that of Turkey, Albania, Iran and Pakistan) had gained it an increasing amount of interest from Chinese buyers recently. Briefly, the consequence was that Turkish chrome ore prices increased and the export ban increased prices further. Subsequently, production costs for Chinese smelters will be higher as well, according to ferrochrome producers in China. Market analysts believe that the FC sector could attract more foreign investment. China's Tsingshan Holding Group is developing a \$1 million composite project for a steel plant, an iron ore mine and a ferrochrome plant in Zimbabwe.

The South African National Treasury announced on 11 March 2020 a call for written comments on the proposal considering the taxes to alleviate pressure from unfair trade practices on domestic metals industries. Subsequently, South Africa's government announced in July 2020 that it is banning all exports of ferrous and non-ferrous scrap metal for two months to safeguard domestic supply while it considers measures to support the domestic industry (Murphy, 2020). The following figure illustrates the vast amount of ferrochrome scrap that is being sold by South African dealers -

The implementation of an export tax has had varied effects on several industries and countries around the globe. Overall, the results from the data analysis show that the implementation of an export tax can potentially result in a significant reduction in exports of chrome from South Africa to China. The analysis can however not simulate for how long that will be the case, and it is also not possible to establish from this analysis what effect a possible retaliation from China might have. The results must also be considered in conjunction with the desired policy goals. If the goals are to direct more chrome and ferrochrome to the domestic market for further production of value-added products, then an export tax can be one mechanism to create the desired effect, as the analysis clearly shows a significant potential reduction in exports to China.

For South Africa, it is a business case of rationalising the narrative of *successfully acquiring the “triple rent situation”*: A strong industrial sector, a raw material monopoly (chrome) and overseas trade.

An export tax can achieve the goal of decreasing the volumes of products exported to the foreign market, however to convert that into successful domestic downstream industries that produce value-added products, will not be dependent on the raising of an export tax alone. It is much more related to the ability of the country to sufficiently invest and develop such a downstream industry, which will require a set of inputs such as stable and affordable electricity, labour supply, technological developments and other infrastructure developments.

Overall, for an export tax to be successful, one can deduct the following criteria must be in place:

- An exporting country should have a significant level of market power.
- The exporter goods should have few real substitutes from other supplying countries
- An export tax can only really be used as an effective measure over the short to medium term, as the expansion of the local industry, or local beneficiation, will not only be dependent on the export tax alone but also on the supporting environment (including infrastructure, institutions, investment climate and labour supply)

7. Technology

The world’s latest and most effective technologies already exist in South Africa, and these are complemented by the best world-class technical skills and know-how, but their application is sub-optimal. Of the total estimated installed ferrochrome smelting capacity of more than 5 000 kt per year, 22% was unavailable in 2018 due to smelters being closed or mothballed (Table 8). A possible reason is a lack of competitiveness of the local ferrochrome industry due to high energy costs, international ferrochrome market prices and volumes, and little cooperation and coordination between chrome ore producers (especially UG2 miners) and the smelters.

Table 8: Ferrochrome smelting capacity and production in South Africa in 2018 (TIPS, 2021; Retief, 2021)

Smelter	Technology	Capacity (kt per annum)	Not operating (kt per annum)
Rustenburg	Open SAF-PSP ⁹	430	
Boshoek	Closed SAF-PSP	240	
Wonderkop	Open SAF-PSP	533	
Lydenburg	Premus	396	396
Lion	Premus	720	
Ferrometals Witbank	2 x Closed SAF-PSP / Open SAF	535	154
Middelburg Ferrochrome	Direct reduction / 2 x DC furnaces / 2 x Open SAF-PSP	471	
Tubatse Ferrochrome	Open SAF-PSP	435	
Tubatse Alloys	2 x Closed SAF-PSP / 2 x Open SAF	426	172
TC Smelter	Closed SAF-PSP	270	
Dikwena	Closed SAF-PSP	394	140
Mogale	2 x Closed DC / 2 x Open SAF	110	110
RBA	Brush	130	130
Total		5 090	1 102

⁹ SAF-PSP: submerged arc furnace plus a pelletisation and sintering plant

New smelting technologies already available in South Africa can enable the processing of a wider range of feedstock ores at lower energy costs. A further advantage is a reduced dependence on imported coke reductants, with local anthracite as a substitute. It is clear that, from a purely technical point of view, there is no reason why South Africa can become one of the major ferrochrome producers in the world.

8. Some Social Issues

The greatest threat to supply chain development through beneficiation is the rise of opportunistic entrepreneurs in the informal political economy, who operate beyond the reach of statutory prescriptions and the legal regime. Communities in peri-urban South Africa are rife with factors of instability that undermine families, local entrepreneurship, and economic development. The destruction often originates in policies with unintended consequences. As a comparative example, a reference could be made to the decline of the garment and textile sector of South Africa. While protectionism encourages inefficiency, the failure to design and implement policies that would promote a competitive industrial environment led to the near destruction of South Africa's textile industry through unfettered imports from strictly controlled political economies. Sustainable development needs to be enshrined in and emanate from policy directives that promote local economic development and institutionalise industrialisation value chains.

The composition of South Africa's trade with most parts of the world is characterised by the export of raw materials and the import of manufactured goods. In reality, South Africa is also exporting potential jobs *en masse*. In practice, South African manufacturers have to pay import parity prices to the mining companies, which causes our manufacturers to be uncompetitive. When this difficulty is added to the problem posed by cheap manufactured goods from China and India, South African manufacturing operates on a very uneven playing field, therefore the proposition of the export levy in this CFcVC space. As such, the ferrochrome industry and its value chain beneficiation present a window of opportunity to develop niche markets.

The export of raw ore has steadily risen over the past decade, and the multiplying benefits of value added to the value chain will develop a more conducive socio-economic environment through job creation, contributions to skills enhancement, diversification of the economy, and a move away from primary producer status towards manufacturing-based industrialisation and increasing foreign direct investment (as happened when Zimbabwe announced trade protection of its chrome resources). This will turn the comparative advantages of being resource-rich into a competitive advantage and enhance the creation of small and medium enterprises (Turok, 2013). President Ramaphosa's stance on industrialisation has been supported by some of his key ministers. Mineral Resources Minister Gwede Mantashe argued in his budget speech that "*beneficiation ... was adopted as government policy in 2011*", a reference to his own department's beneficiation strategy. In the introduction to South Africa's 10th iteration of the Industrial Policy Action Plan (IPAP), then Minister of Trade and Industry, Rob Davies, said, "*The key challenge to industrial policy is to incentivise investment in plant, technologies and skills that would have medium to long-term benefits to the economy.*"

Unless the South African mining industry can improve its cost competitiveness, even sharper declines in its fortunes could be ahead. Stakeholders in ferrochrome operations agree that there are "*many ingredients to running a proper ferrochrome industry — it's not just about the ore, but electricity, too, as the two biggest inputs*" (Interviewee Categories 5 and 7). McKinsey & Company (2019) research found that 47% of South African mining jobs, along with 42% of revenues, are in the vulnerable bottom quartile of global cost competitiveness.

The mining sector will be critical to accelerated growth in South Africa's broader economy as a key source of stimulus for other sectors of the economy, including infrastructure, energy, and transportation. A renewed mining industry can once again be a primary engine of growth, job creation, and development for South Africa. In the main, in South Africa, minerals have been extracted, subjected to some basic processing, and then exported as ores without a great deal of beneficiation or

fabrication. This limited process creates a large gap between mining and manufacturing, to the detriment of both sectors and the national economy. The value chain and linkages so necessary for the efficient and competitive production of finished goods have been seriously undermined. As Turok (2013) already pointed out years ago to parliament, a mineral resource endowment does not necessarily translate into manufacturing beneficiation. The isolation of ore mining from the total industrial value chain also has consequences for labour policy. Thousands of mining job losses caused displacement of these workers into other activities.

One of the serious escalating safety and security issues the last number of years is the direct consequence of the absence of the government and poor service delivery leave communities vulnerable to exploitation by strongmen and opportunistic political interests in the informal political economy. *Illegal mining* in South Africa occurs in the context of an informal political economy operative beyond the government's extractive and managerial regime. A 2018 report by the Global Initiative Against Transnational Organized Crime calculated the cost (lost sales, royalties, and taxes) to the Treasury to be approximately R15 billion annually. In most provinces of South Africa, illegal mining occurs without sanction and in the context of government corruption. So-called '*zama zamas*', called '*maiteke-teka's*' ('We try') in the CFcVC, are illegal miners, often heavily armed, who invade operating mines and attack security personnel with paramilitary capacity. These illegal mining activities have many undesired impacts on the mining environment, even leading to capital flight as investors disinvest in the unstable mining industry.

9. Conclusion And Recommendations

The macro-economic overview showed that there are major structural weaknesses in the South African economy, of which electricity generation and supply problems are the most important. South African business cycle phases show that the country has been in a downward phase since December 2013, i.e., for more than seven years. South Africa will not overcome current problems without renewed growth in investment. But, even though electricity generation is of concern, it is not the most important one for the Ferrochrome industry. The reason for switching off furnaces is China buying millions of tonnes of UG2 chrome ore at very low price levels. This is a great contributor to the detriment of the beneficiation industry.

Even though South Africa has a high level of revealed competitiveness, the country experienced a slowly declining trend over time for ferrochrome production, while chrome ore production is increasing. This means that the country's level of specialisation is now higher for raw materials than for processed products. This is problematic from an economic development perspective as the opposite would be more favourable.

One of the options that have been proposed for South Africa to regain its competitive position in the ferrochrome industry, is the implementation of an export tax on specific chrome ores. An export tax can only be beneficial in cases where the country has significant market power. Thus resource-rich countries may have the incentive to apply an optimal export tax rate that maximises welfare. If this increase in revenues exceeds the producer and deadweight losses, export taxes improve the national welfare of a large country.

Even though export control measures can have a positive effect on countries with market power, the question is whether it leads to increased downstream processing in the domestic market. The research shows that export taxes have had varied effects in different industries and countries around the world. In many instances, an export tax did not have the desired effect to increase downstream processing or value-added activities, as an export tax alone cannot drive such an effect. An export tax can achieve the goal of decreasing the volumes of products exported to the foreign market, but to gain in the domestic market the product retained domestically should be converted into a successful domestic downstream industry. This is reliant on the ability of the country to sufficiently invest and develop such a downstream industry, which will require a set of inputs such as stable and affordable electricity, stable institutions, labour supply, technological developments and other infrastructure developments.

South Africa failed to use the fact that it produced more than half of the gold on the planet, and was the dominant gold producer for more than a hundred years. South Africa's Industrial policy is missing the trend change of global best practices as outlined by the IMF (Chipfupa, 2019:7). The Asian Tigers are a good benchmark in this regard, because of the drive to reindustrialisation by government intervention (and not the lack of it). State intervention promotes the development of sophisticated export-oriented industrial sectors (the case of the chrome beneficiation argument). The ferrochrome under existential threat is a point in case here-it needs this "moonshot" approach that is not about import substitution nor just broad-based investment promotion. This moonshot industrial policy approach differs significantly from the traditional IMF and World Bank suggestions to developing economies. The reason is that the global markets are quite different since the financial crisis of 2008 (Chipfua,2019:7). According to moonshot, the mildly interventionist nature of government intervention should be calibrated to one of an activist government looking at reconnecting to areas that promise success going forward.

The risk is that if the identified issues are not addressed, South Africa will have lost its market power in chrome ore over the longer run, and be replaced by other suppliers, or China will likely implement other retaliatory measures to keep its stainless steel industry competitive. There is also the risk over the longer term that export restrictions will be recognised more formally in multilateral and regional trade agreement arenas, such as the WTO, with more stringent measures put in place to regulate the application of export restrictions to prevent countries from gaining unfair trade advantages using such measures.

From the research, it is clear that the proposed export taxation pathway will work if certain conditions are put in place and that an active PPP and political will be in place to operationalise the beneficiation - a glimpse of a fully-fledged stainless steel value chain? **Does this present a window of opportunity to address the narrative of the "resource curse" that seemingly is busily occurring in the chrome-ferrochrome industry?**

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Sustainable Supply Chain Management Practices And Dynamic Capability Effects On Sme Performance In a Pandemic

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Keywords

Covid-19; sustainable supply chain management practices; dynamic capability, SME performance

Abstract

Background: Small and medium enterprises (SMES) play a critical role towards economic development globally, more so in developing countries. However, the uncertainties from the current COVID-19 pandemic have led to widespread global supply chain disruptions, which in turn, have severely affected the SMEs' performance.

Motivation: The study is motivated by the dearth in empirical literature on sustainable supply chain management practices and dynamic capability effects on SMEs' performance in a disruptive environment from a developing country's perspective.

Aim: Premised on the Dynamic Capabilities Theory, our study investigates the impact of sustainable supply chain management practices and dynamic capability on SMEs' performance as measured by the triple bottom line indicators.

Methods: Determinants were identified from extant literature. The study utilised a quantitative research approach. A cross-sectional research survey collected data from 174 SMEs across the 10 Provinces in Zimbabwe. Structural equation modelling (SEM) was used to analyse the conceptual structural model.

Results: Results of the study indicate that sustainable supply chain management practices have a significant positive influence on SMEs' environmental, economic, social performance and dynamic capability. Furthermore, while dynamic capability is positively related to economic and environmental performance, it however has no effect on social outcomes; these require relationships to be established on a long-term basis. Conclusion: The study highlights the overwhelming need for SMEs to be aware and promptly implement of sustainable supply chain management practices if enterprises are to improve performance amid and post the Covid-19 induced supply chain disruptions. The research contributes to developing literature and assists SMEs and other stakeholders to design and implement sustainable supply chain management practices, create dynamic capability, monitor and evaluate their impact of such on business performance during and after a disruptive era.

1. Introduction

Small and medium enterprises (SMEs) are hailed as an effective means of promoting national, regional and global and economic development through employment creation, technological advancements, and poverty reduction (Mishal et al., 2019; Putra, 2016). The World Trade Organisation (WTO, 2016) reports that SMEs are the backbone of the world economy, accounting for 95% of firms across the globe, 60% of the world's total employment, 35% of the Gross Domestic Product (GDP) in developing countries and 50% in developed countries. Notwithstanding the importance of SMEs to the global economy, studies reveal that during severe crises, SMEs have a higher likelihood of closure as the subsequent socio-economic impacts severely weaken their operations and performance (Saturwa, Suharno and Ahmad, 2021; Mason & Harrison, 2015). The

Covid-19 pandemic for instance, has adversely affected the global economy and disrupted supply chains. Furthermore, similar to large corporations, SMEs are plagued by severe climate change, aggressive competition, trade and regional wars as well as general global unrests. These uncertainties have led to substantial disruptions in SMEs' operational efficiency, and performance owing to their inherent fragilities compared to their larger counterparts (Guan et al., 2020; Ivanov, 2020a; Ivanov and Dolgui, 2020a). Hence, an important question emerges; how can SME performance be enhanced amid and post the Covid-19 pandemic?

In response, recent literature has increasingly paid attention to the issue of sustainability (Raza et al., 2021; Joshi and Sharma, 2022; 2021a; Bui et al., 2021). As illustrated by triple bottom line (TBL) paradigm, a sustainable enterprise has to associate its operations to maintain profits, environmental and social performance (Sharma et al., 2022). Since disruptions occur abruptly, oftentimes without forewarning, firms require special know-how to recognize such disruptions, strategize and plan to develop and implement sustainable supply chain management practices (SSCMP) that proactively organise and reorganize assets to achieve sustainability (Dolgui and Ivanov, 2021; Baral et al., 2021; Chowdhury et al., 2021; Bodenheimer & Leidenberger, 2020). Prior studies indicate non-adherence to SSCMP leads to wrong decision making, which in turn negatively impacts on a firm's organisational productivity, customer satisfaction while decreasing shareholder value and overall organisational performance (Udofia et al., 2021; Bag et al., 2021c; Corrales-Estrada et al., 2021). Literature is replete with studies on the strong positive link between SSCMP and financial performance (Prasad et al., 2020; Amjad et al., 2017; Grenwatsch & Klendienst, 2017; Joshi & Sharma, 2022, Eccles, Ioannou & Sarafeim, 2014; Tipu and Fantazy, 2018). Other studies (Vijayan & Kamarulzaman, 2020; Hong et al., 2018) on the governance mechanisms for business performance further contend that the positive effects of SSCMP are significantly shown through an organization's dynamic capabilities; that is sources of a firm's competitive advantage which in turn enhance performance. Thus, the dynamic capacities of the firm can help it to build resilience and improve on performance outcome to survive against risk (Hernández-Linares et al., 2021; Kusriani and Maswadi, 2021; Lu et al., 2021; Prasad et al., 2015). Other studies submit that dynamic capabilities purposely alter, adjust, and reinstate organizational resources are a source of sustainable competitive advantage in a dynamic and highly competitive environment that is typically characterised unpredictable and rapid fluctuations (Teece, 1994; Teece et al., 2007; Ambrosini & Bowman, 2009; Kilubi & Rogers, 2018). Hence, it would be interesting to know whether the same holds true for our study.

While theoretical literature indicates the theoretical linkages between firm SSCMP environmental, social, and economic performances amid the Covid-19 pandemic, the studies are however embryonic (Joshi and Sharma, 2022; Chowdry et al., 2021; Iyengar et al., 2020; Bier et al., 2020; Kamble et al., 2020; Raza et al., 2021). Similarly, despite the high significance of dynamic capabilities to both theory and practice (Nath & Agrawal, 2020; Eikelenboom & de Jong, 2019; Ciccullo et al., 2018), currently, dynamic capabilities remain largely ignored, particularly in studies on SSCMP and firm performance. In response to the call for more in-depth research, we undertook this study to conceptualize further the SSCMP-dynamic capability-SME performance nexus. Our research is also motivated by the observation by the scarcity of research on the domain from developing countries as the majority of extant studies are from developed economies. The few studies on developing economies predominantly focus on Asia (Joshi & Sharma, 2022; He et al., 2020; Mani et al., 2020; Sabuj et al., 2021). Therefore, presently, little is known about the subject from an African perspective despite the undeniable importance of SMEs to African countries. Hence, to the best of our knowledge, this is one of emergent studies in Zimbabwe. The current study seeks to close the current research gap by answering the following research questions:

1. Which sustainable supply chain management practices are currently in use by SMEs in a developing economy amid the Covid-19 pandemic?
2. What is the link between SME sustainable supply chain management practices and dynamic capability?
3. How do SSCMP and dynamic capability influence SME performance?

The remainder of this paper is organized as follows. Section 2 provides the literature review. Section 3 describes the research methodology. The results are presented in Section 4 while Section 5 concludes the research.

2. Literature Review

SMEs in Zimbabwe

SMEs globally have been particularly vulnerable to the economic impacts of the Covid-19 pandemic due to their limited resources; they tend to have fewer assets, smaller cash reserves and lower levels of productivity (Saturwa et al., 2020). Research further reveals that SMEs that have been hardest hit by the COVID-19 as they operate predominantly from the retail, hospitality, food services, entertainment services, and construction industries (Albaz, Mansour, Rida, & Schubert, 2020; Sonobe et al., 2021). In all these challenges similar to other developing countries, Zimbabwean SMEs have not been spared. SMEs are critical to the country's economy as statistics from A FinScope survey indicate that they currently contribute more than 60% of the country's employment, GDP and the fiscal base (FinScope, 2012). The also shows that in Zimbabwe, there are 2.8 million adult SME owners with 3.5 million businesses, employing a total of 2.9 million people across all ages, excluding the business owners themselves. The sector therefore contributes significantly to employment with a total of 5.7 million of the 5.9 million adults in the country. Thus, almost all adults in Zimbabwe are involved in small business activities either as SME owners, managers or employees (Munongo and Chimwai, 2021).

Sustainable supply chain management practices

Sustainability is a concept which endeavours to safeguard the extensive expression of functioning of a company, its supply chains, and its society (Kottala, 2021:2). Literature on sustainable supply chain management and uncertainty has systematically grown over the past few years (Bentahar and Benzidia, 2018; Govindan et al., 2020, Joshi and Sharma, 2022). Interestingly, however, there is no consensus over the meaning of sustainable supply chain management (SSCM). The majority of the scientific work on SSCM refers to the or the triple bottom line (TBL) coined by Elkington (1997) where companies focus on three pillars of social or people, environmental and economic sustainability. This widely accepted definition builds on the Brundtland report from the World Commission on Environment and Development (WCED, 1987), wherein sustainability is a development that meets the need of present generations without compromising the needs of future generations. other studies many consider SSCM as supply chain management, the emphasis of which is to preserve stability relating to environment, economic and social activities to achieve further long-term sustainable growth (Ciccullo et al., 2018; Fahimnia et al., 2015). Sustainable supply chain management practices (SSCMP) as a result have been defined in different ways. For instance, according to Pagell and Wu (2009) in Raza et al (2021:2), they refer to "particular managerial activities relating to the supply chain that aim to make them genuinely sustainable". SSCMP include coordinating and fostering trustworthiness among supply chain partners; promoting sustainable organisational learning amid a Covid-19 pandemic; implementing sustainable organisational-wide strategic orientation; employee welfare programmes, supplier and customer relationship management; risk management; undertaking supply chain continuity management; and instituting active environmental awareness and management (Raza, 2021).

Dynamic capability

A firm's dynamic capability (DC) of the firm seeks to improve continuously through routine actions during uncertain business environments (Robertson et al., 2021; Nayal et al., 2021). Hence, the dynamic capability (DC) viewpoint focuses on special know-how, which fosters an organization's source of competitive advantage (Teece et al., 2007; Kähkönen et al., 2018; Sharma and Joshi, 2020a), implementing strategies for evolving novel capabilities which enhance long-term performance. Organizational dynamic capabilities stem from SSCMP (Joshi & Sharma, 2022; Chowdry et al., 2021) and include collaboration, technology adoption, and knowledge creation through strategic planning to restructure and stimulate awareness among supply chain stakeholders (Sharma et al., 2020a; Sharma and Joshi, 2019c; Teece, 2014). While scanty, recent studies have indicated a significant positive between SSCMP and DC; firms that adopt SSCMP create DC, which in turn leads to improved social-

economic and ecological performances during uncertainty (Tripathi, and Joshi, 2019; Queiroz et al., 2020). Interestingly, Joshi and Sharma (2022) and Klassen et al (2012) found that while DC amplifies both the ecological and profit performance of the firm, it has no effect on the social performance.

Firm performance

According to Gualandris et al. (2014:263) define firm performance as a “firm’s performance regarding environment and society”. Conversely, firm performance is conventionally defined as economic achievement measured by financial performance benchmarks standards such as the return on investment, profit, asset efficiency (Orlitzky et al., 2003). Studies (Haneburg, 2021; Joshi et al., 2020; Joshi and Sharma, 2022) indicated that firm performance in SSCM should attain both objectives of traditional measures of revenue and cost and highlighted the importance of comprehensively including environmental and social dimensions thereto, especially in the wake of Covid-19. Likewise, recent SSCM literature (Davis-Sramek et al., 2018; Ghadimi et al., 2019; Hong et al., 2018) affirm the need for organisation performance analysis beyond instrumental logic, where the sole focus is on economic and financial performance. Similarly, Sharma et al (2021c) contend that the true measure of firm performance in turbulent times is reflected in the triple bottom-line measures of performance, which is a relatively less studied area. Hence, this study pays attention to all three perspectives; people, economic and environmental.

Presently, literature is replete with studies on the strong positive link between SSCMP and financial performance (Prasad et al, 2020; Amjad et al., 2017; Grenwatsch & Klendienst, 2017; Joshi & Sharma, 2022, Eccles, Ioannou & Sarafeim, 2014; Tipu and Fantazy, 2018). Take to results section. Business enterprises in both developed and developing countries are increasingly paying attention to environmental initiatives in the sustainable supply chain (Esfahbodi, Zhang & Watson, 2016) because of their strategic importance in firm performance. Recent literature suggests a strong positive relationship between an environmentally friendly firm’s sustainable supply chain management practices (raising awareness, sourcing from “green suppliers”, using recyclable packaging, carbon emission reduction and tracking) and its environmental performance as measured by outcomes such as reduced solid and liquid waste reverse logistics, smarter production through innovative technology, greening packaging, sourcing of raw materials, waste management, greenhouse gas emission reduction, improvement in using clean energy sources and improving usage efficiency (Joshi & Sharma, 2022; Chowdry et al., 2021; Fritz, 2019; Hasan, 2013).

Studies establish that incorporating SSCMP such as active social inclusion and firm-level social responsibility plays a vital role in enhancing social performance. Finsterwalder and Kuppelwieser, (2020), Joshi and Sharma (2022) established that during disruptive turbulent times, an enterprise’s supply chain reconfiguration through corporate social responsibility (CSR) and employee friendly and wellness initiatives including increased awareness of health, equity, education, security, and bonded labour and corporate ethical practices have a strong positive link improved stakeholder awareness, increase employee commitment and motivation, which lead to increase productivity, sales and ultimately profits, communication, information transparency, and the organization’s goodwill. Furthermore, their study revealed that the social practices assist an enterprise to solve challenges associated with equilibrating resources due to disruption-induced shortages.

Theoretical framework

This study’s theoretical framework is premised on the dynamic capabilities theory.

Dynamic capabilities theory

The Dynamic Capabilities Theory (DCT) coined by Teece and Pisano (1994) emerged as “both an extension to and a reaction against the inability of the resource-based view (RBV)” (Bleady, Ali & Ibrahim, 2018:1) and explains how competitive advantage is achieved in rapidly changing environments. According to the theory, while the RBV recognizes the mechanisms that facilitate competitive advantage; resources that are simultaneously valuable, rare, imperfectly imitable and non-substitutable, (Bowman & Ambrosini, 2003), it fails to describe how these operate (Teece, Pisano & Shuen, 1997). In response, the DCT contends that in the global market place, successful firms are

characterised by timely and flexible responsiveness to market dynamics and rapid product innovation, effective coordination and redeploying internal and external competence (Teece et al., 1997:515). The term “dynamic” is defined in the DCT as “the capacity to renew competences so as to achieve congruence with the changing business environment; this is relevant in situations where time to market is critical and the nature of competition is difficult to determine”. On the other hand, capabilities are described as “the key role of strategic management in appropriately adapting, integrating and reconfiguring, internal and external organizational skills, resources, and functional competences to match the requirements of a changing environment” (Teece et al., 1997:515). Hence, a firm’s dynamic capability is its ability to attain competitive advantage. The approach takes into account three classes of factors that help explain where competitive advantages namely; processes, positions and paths. Processes comprise the way things are done in organizations and they have three roles; coordination, learning and reconfiguration (Teece et al., 1997:518). Positions define specific endowments of technology, intellectual property, complementary assets, customer base, and its external relations with suppliers and complementors (Teece et al., 1997:521). Paths refer to the strategic alternatives available to the firm, these are defined by path dependencies and technological opportunities (Teece et al., 1997:522). 1994, p. 552). As rivalry is inevitable in business, the DCT therefore implies that a firm’s ability to improve or develop new types of competences is essential in developing long-term competitive advantage. In essence, DCT tries adds to the RBV by simultaneously explaining the nature of a firm’s sustainable competitive advantage and intending to inform managerial practices (Teece et al., 1997:510). Its superiority over RBV is the inclusion of key variables and linkages that need to be manipulated to create, protect, and leverage intangible assets so as to achieve superior performance and avoid bankruptcy (El Gizawi, 2014).

Grounded on the DCT, the present study posits that an SME’s ability to quickly and effectively respond to the Covid-19 induced supply chain disruptions through various sustainable supply chain management practices such as coordinating and fostering trustworthiness among supply chain partners; promoting sustainable organisational learning amid a Covid-19 pandemic; implementing sustainable organisational-wide strategic orientation; risk management; undertaking supply chain continuity management; and instituting active environmental management not only yield enhanced performance (economic, environmental and social), it is positively linked to the creation of an SMEs “know how”, the dynamic capability in the form of specialist and “real-time” knowledge, market orientation and innovation through technology adoption. The DC in turn has a positive effect on SME performance.

Conceptual model

The conceptual model proposed for the study is depicted in Figure 1 below.

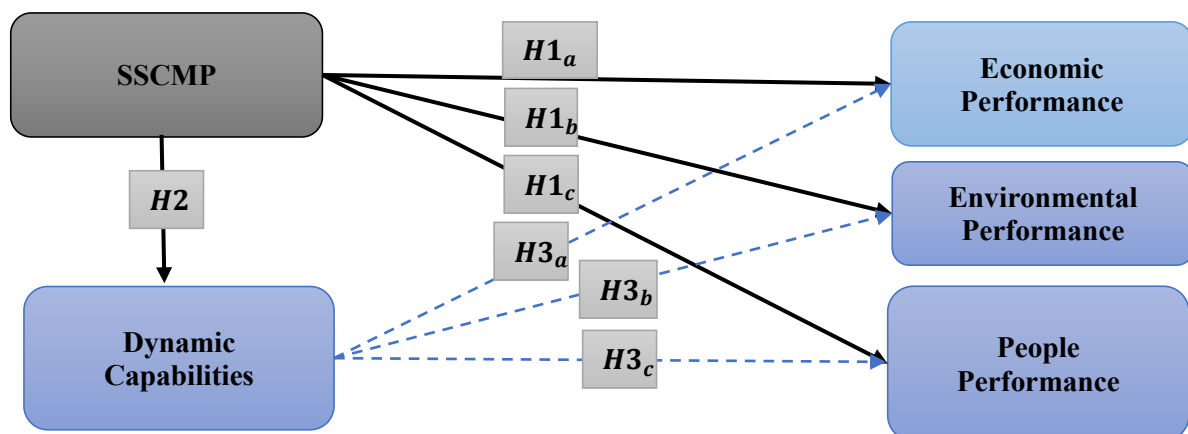


Figure1: Conceptual model

Hypotheses

Based on the grounding theories and literature review, the following hypotheses were postulated to test the inter-relationships between SSCMP, dynamic capabilities and SME performance.

SSCMP and SME performance

H1_a: SSCMP positively influence SME economic performance.

H1_b: SSCMP positively influence SME environmental performance.

H1_c: SSCMP positively influence SME people performance.

SSCMP and SME dynamic capability

H2: SSCMP have a positive impact on SME dynamic capability.

Dynamic capability and SME performance

H3_a: Dynamic capability positively influences SME economic performance.

H3_b: Dynamic capability positively influences SME environmental performance.

H3_c: Dynamic capability has no influence on SME people performance.

3. Methodology

3.1 The data

The exploratory study employed a quantitative approach. To analyse the proposed conceptual model, the primary data were collected through a cross-sectional survey using an online questionnaire using Google Forms. Ideally, the population to be studied should comprise all SMEs in Zimbabwe. However, time and cost constraints together with privacy concerns made it difficult to incorporate all SMEs. Hence, survey respondents were selected through purposive sampling, a type of non-probability sampling method wherein strategic choices about whom to under study are consistent with the research objectives (Palys, 2008). The targeted 250 respondents were SME owners or managers from the 10 provinces in Zimbabwe whose business were consistent with the Small and Medium Enterprise Development Corporation (SMEDCO 2010:3) definition of SMEs in Zimbabwe, that 'a business employing no more than 100 employees and generating a maximum annual revenue of USD830 000'. The respondent SMEs spanned across six industrial domains; food, logistics, agriculture, mining, tourism and hospitality, information and communications technology. The study utilised the online questionnaire owing to cost effectiveness, flexibility, speed, accuracy, the ability to incorporate a large sample size (Evans & Mathur, 2005), and the need to observe social distancing amid the Covid-19 pandemic.

3.2 Study variables

Our study investigated the effects of sustainable supply chain management practices and dynamic capability on SME performance in a pandemic. To ensure both validity and reliability, the items used to operationalise the individual constructs were adapted from closely related literature (Joshi & Sharma, 2022; Raza et al., 2021; Hong et al., 2018). The online questionnaire comprised four sections. First was the data of the individual respondent's profile and SME characteristics. The second section focused on SSCMP (coordinating and fostering trustworthiness among supply chain partners; promoting sustainable organisational learning amid a Covid-19 pandemic; implementing sustainable organisational-wide strategic orientation; risk management; undertaking supply chain continuity management; and instituting active environmental management) while the third covered the SMEs' dynamic capabilities (knowledge, market orientation, innovation through technology adoption). The last section covered the impact of SSCMP on the environmental, people, and economic (financial) performance of the company. The survey instrument was validated for content by seeking expert opinions on areas of ambiguity through a pre-test and immediately effecting recommended amendments. Thereafter, the corrected questionnaire was piloted on 25 randomly selected respondents who complied with the study's inclusion criteria before final use in the online survey. All the ethical requirements were observed. Informed consent was sought from all the potential respondents. To encourage openness, we provided with assurance and reassurance of confidentiality of responses. The responses are collected using a five-point Likert scale was used for the majority of the questions in sections 2-4, with responses ranging from 1 = 'Strongly Disagree' to 'Agree' to 5 = 'Strongly Agree'. A total of 187 responses were obtained from purposive sampling, and after elimination of incomplete responses, 174 cases (93%) were usable for analysis in the study.

4. Data analysis and results

4.1 Descriptive statistics

Table 1 below shows the descriptive statistics of the study.

Table 1: Descriptive Statistics

Variable		Frequency	Percent (%)
Gender	Male	114	66
	Female	60	34
Age	18-25 years	9	5.20
	26-30 years	17	9.80
	31-35 years	22	12.64
	36-40 years	39	22.41
	41-45 years	63	36.21
	46-50 years	18	10.34
	51 years+	6	3.40
Education	Primary	6	3.40
	Secondary	61	35.05
	Tertiary: Technical College	40	23.00
	Tertiary: Undergraduate	48	25.60
	Tertiary: Postgraduate	19	10.92
SME Age	Less than 1 year	13	7.47
	3-5 years	35	20.11
	6-10 years	56	32.18
	11-15 years	43	24.71
	16 years+	27	15.52
Employees	0 to <10	96	55.17
	10 to <25	73	41.93
	25 to < 100	5	2.90
Revenue last 12 months (USD)	0 to < 10 000	61	35.05
	10 000 to < 20 000	23	13.22
	20 000 to < 50 000	70	40.23
	50 000 to < 100 000	11	6.32
	100 000 to 830 000	9	5.17
SME's Business Sector	Food	23	13.22
	Logistics	14	8.04
	Agriculture	18	10.34
	Tourism & Hospitality	39	22.41
	ICT	56	32.18
	Mining	24	13.79

Table 1 shows that 66% (114) of the respondents were male, the highest proportion (36.21%) of SME owners/managers were from the 41-45 years' category while 35.05% (61) had completed secondary education. A total of 32.18% (56) of the SMEs had been operational for 6-10 years, 55.17% (96) had between 10 to less than 25 employees, 40.23% (70) had generated an annual income of between USD20 000 and USD 50 000 over the past year, while only 5.17% (9) earned USD 100 000 up to the maximum SME definition threshold of USD 830 000. Furthermore, the descriptive statistics revealed that the respondent SMEs were from the food, logistics, agriculture, information and communications technology (ICT), mining and tourism and hospitality industries.

4.2 Data analysis

Consistent with Kumar (2018), Raza et al. (2021) and Joshi and Sharma (2022) the structural equation modelling was preferred over traditional statistical techniques as the study involved validation of multi-relation structural model. Hence, the partial least squares structural equation modelling (PLS-

SEM) with SmartPLS 3.2.9 software was used to analyse the structural relationship in SEM. The PLS-SEM was selected owing to its efficient in measuring the strength of structural and complex relationships between model constructs and in examining the theoretical soundness of relationships between variables (Chin et al., 2003). A step-by-step analysis was undertaken by first checking for validity and robustness of the planned measurement model. Thereafter, we established the model's goodness of model fit, and lastly, tested the hypotheses of the proposed structural model in line with Hair Jr et al (2016).

Measurement model

Confirmatory factor analysis (CFA) was undertaken to using Amos Version 27.0 and the measurement model was tested for latent and reflective variables to ensure the validity and reliability of the constructs. Factor loadings, composite reliability (CR), average variance extracted (AVE) were used to evaluate construct validity as suggested by Hair Jr et al (2017). The Cronbach's alpha (α) measurement was employed to ensure reliability of each construct; the values in Table 2 below are larger than 0.7, ensuring the internal consistency of each construct (Taber, 2018). In addition, the convergent validities of each construct were also computed. There are three requirements that should be considered when measuring the convergent validity: 1) composite reliability (CR) of each construct had a value of at least 0.7; 2) average variance extracted (AVE) which should have a value of at least 0.5; and 3) standardized factor loading has statistical significance of at least 0.5 (Awang, 2015). Table 2 below indicates that all three conditions for convergent validity were met; the CR values ranged between 0.722 and 0.923; for the AVE and standardized factor loading, all constructs had values above the threshold of 0.50. Three items (Coord_Trust3, SCRMgt2, Pollution3) from various constructs with loadings below 0.50 were deleted in order to improve construct reliability.

Table 2: Confirmatory factor analysis

Construct	Items	Standard Loading	CR	AVE	Cronbach's Alpha
SSCMP			0.891	0.653	0.816
	Coord_Trust1	0.811	-	-	-
	Coord_Trust2	0.640	-	-	-
	Coord_Trust4	0.749	-	-	-
	Learning1	0.883	-	-	-
	Learning2	0.702	-	-	-
	Learning3	0.593	-	-	-
	Orient1	0.661	-	-	-
	Orient2	0.794	-	-	-
	Orient3	0.715	-	-	-
	SCRMgt1	0.809	-	-	-
	SCRMgt3	0.827	-	-	-
	SCRMgt4	0.773	-	-	-
	Continuity1	0.692	-	-	-
	Continuity2	0.719	-	-	-
	Continuity3	0.676	-	-	-
	EnvirTQM1	0.659	-	-	-
EnvirTQM2	0.753	-	-	-	
EnvirTQM3	0.728	-	-	-	
Dynamic Capability			0.827	0.618	0.764
	Knowledge1	0.664	-	-	-
	Knowledge2	0.753	-	-	-

	MktOrient1	0.796	-	-	-
	MktOrient2	0.748	-	-	-
	MktOrient3	0.627	-	-	-
	Innov1	0.761	-	-	-
	Innov2	0.695	-	-	-
	Innov3	0.770	-	-	-
Environmental performance			0.81	0.67	0.804
	Pollution1	0.718	-	-	-
	Pollution2	0.835	-	-	-
	Pollution4	0.653	-	-	-
	Resource1	0.731	-	-	-
	Resource2	0.519	-	-	-
	Resource3	0.806	-	-	-
Economic performance			0.92	0.69	0.795
	OpPerform1	0.638	-	-	-
	OpPerform2	0.716	-	-	-
	OpPerform3	0.722	-	-	-
	MktPerform1	0.718	-	-	-
	MktPerform3	0.804	-	-	-
	MktPerform4	0.773	-	-	-
	FinPerform1	0.861	-	-	-
	FinPerform2	0.669	-	-	-
	FinPerform3	0.794	-	-	-
	FinPerform4	0.691	-	-	-
People performance			0.72		0.831
	EmpPersp1	0.625	-	-	-
	EmpPersp2	0.699	-	-	-
	EmpPersp3	0.707	-	-	-
	EntPersp1	0.813	-	-	-
	EntPersp2	0.639	-	-	-

Discriminant validity

Discriminant validity measures the degree of distinctness of each construct, and exists when ‘each measurement item correlates weakly with all other constructs except for the one to which it is theoretically associated’ (Gefen and Starub, 2005:92). The study examined discriminant validity by using the widely accepted benchmark by Fornell and Larckers (1981). As indicated in Table 3 below, all the other cross-correlations between the constructs in the model were less than the square root of its AVE, hence, indicating acceptable discriminant validity and the study proceeded to further analysis.

Table 3: The correlation coefficient and average variance extracted

	SSCMP	DC	EcoPerf	EnvPerf	PeoPerf
SSCMP	0.808	-	-	-	-
Dynamic Capability (DC)	0.462	0.786	-	-	-
Environmental Performance	0.417	0.330	0.820	-	-
Economic Performance	0.394	0.285	0.394	0.831	-
People performance	0.411	0.609	0.401	0.217	0.817

Note: Matrix diagonals in bold show the square root of average variance extracted (AVE) while the others indicate inter-construct correlations.

Goodness of fit

The goodness of fit shows how well a model fits the data. The following are the indications of the goodness-of-fit indices for the study. The Chi-square/degree of freedom (CMIN/df) = 1.83 indicates an acceptable fit since it is less than 3 (Hair et al., 2010) ; Goodness-of-fit index (GFI) = 0.91, it must be greater than or equal to 0.90 (Marsh et al., 2020); Comparative fit index (CFI) = 0.937, it must be greater than or equal to 0.90 (Hu & Bentler, 1999); Tucker—Lewis index (TLI) = 0.915 and must should be greater than or equal to 0.90 (Hox et al., 2017); while the root mean residual (RMR) = Root mean square error of approximation (RMSEA) = 0.051 and the root mean square error of approximation (RMSEA) were , both below the 0.08 benchmark (0.051 and 0.053 respectively) suggested by Meyers et al. (2005). Therefore, the above findings suggest good model fit and the study proceeded to hypothesis testing.

Hypotheses assessment

The results of the hypotheses are shown below in Table 4. The R^2 value is 0.714, suggesting that 71.4% of the variance in SME performance is attributable to SSCMP and dynamic capability. All hypotheses are found to be statistically significant and supported. While SSCMP positively influence SME performance, they are most significantly associated with an increase in people performance, H_{1c} ($\beta = 0.759$, $p < 0.05$), followed by environmental performance, H_{1b} ($\beta = 0.693$, $p < 0.05$) and economic performance, H_{1a} ($\beta = 0.519$, $p < 0.05$). These results corroborate the findings by (Finsterwalder and Kuppelwieser, 2020; Chowdry et al., 2021; Fritz, 2019; Prasad et al, 2020; Joshi & Sharma, 2022, Eccles, Ioannou & Sarafeim, 2014; Tipu and Fantazy, 2018).

The positive and significant association between SSCMP and DC, H_2 ($\beta = 0.782$, $p < 0.05$) confirms corroborate literature (Joshi & Sharma, 2022; Chowdry et al., 2021, Teece et al., 2014). Regarding the significant positive influence of DC on economic performance, H_{3a} ($\beta = 0.673$, $p < 0.05$) and environmental performance H_{3b} ($\beta = 0.511$, $p < 0.05$), our study affirms prior studies by Tripathi, and Joshi (2019); and Queiroz et al 2020) who determined that DC has significant positive importance in increasing economic and ecological performances during uncertainty. Furthermore, our study shows no significant association between DC and people performance H_{3b} . This finding affirms results from Klassen et al (2012) and Joshi and Sharma (2022) who concluded that since social capabilities take time to build up, the short-term effects of DC is therefore not explicitly evident in the people performance dimension.

Table 4: Hypotheses and results

Hypothesis	Predicted relationships	Standard path	t	P	Hypothesis test decision
H_{1a}	SSCMP → EcoPerf	0.519	13.116	0.02	Supported
H_{1b}	SSCMP → EnvPerf	0.693		0.00	Supported
H_{1c}	SSCMP → PeoPerf	0.759	9.855	0.03	Supported
H_2	SSCM → DC	0.782	8.681	0.00	Supported
H_{3a}	DC → EcoPerf	0.673	11.592	0.01	Supported
H_{3b}	DC → EnvPerf	0.511	10.744	0.04	Supported
H_{3b}	DC → PeoPerf	0.408	7.293	0.08	Supported

5. Conclusion

The objective of the study was to determine the effects of sustainable supply chain management practices and dynamic capability on SME performance in a developing country during and post the Covid-19 pandemic. The combined effect of SSCMP and DC in managing disruptions to enhance SME performance has received scarce attention, with literature indicating that there is a dearth of research focused on all three perspectives of the TBL concept. The study provides a critical understanding of how SSCMP currently used by SMEs create dynamic capability, and in turn, how these two aforementioned factors influence SME performance grounded on the DCT. From the study, we conclude that SSCM practices have considerable effect on the dynamic capability, and ultimately

on SME performance. As hypothesised, this study found that SSCMP positively and significantly influence SME performance as measured from three perspectives; economic, environment and people. Hence, continuous and committed use of SSCMP such as sustainable coordination and trustworthiness among supply chain partners, learning amidst a covid-19 situation, strategic orientation, data-informed supply chains risk management, supply chain continuity contingencies, environmental 'greening' awareness and auditing policies and strategies enhance SME financial, environmental and social outcomes. Also, the study established that dynamic capability (knowledge, market orientation, innovation and reconstruction) is positively and significantly related to SSCMP, and in turn, the former has a significant positive influence on SME environmental and economic performance.

While still early, the study indicates that increased environment protection awareness, government strict policies through the Environmental Management Agency (EMA) and other stakeholders have realigned SME to adopt environment-friendly measures. Subsequently, such SSCMP efforts have a significant positive effect on how the SMEs coordinate with their supply chain partners to have a greener supply chain with a regard for effluent emissions, smart technology and efficient energy consumptions. Likewise, consistent with government policies and in a bid to advance their public image, SMEs now actively involved corporate social responsibility initiatives. Furthermore, the SMEs are now targeting to implement SSCMP that are employee friendly to drive people's performance. This study focuses on a contemporary global discussion on firm sustainability amid the Covid-19 pandemic; it responds to the need for theory development and empirical work on firstly SMEs, secondly from developing countries, and thirdly from Africa. Furthermore, this study revealed that while SMEs are keen to improve their performance, their current SSCMP are however resource constrained (monetary, knowledge, time) due to the effects of the Covid-19 pandemic. Our study is also valuable in providing guidance to Zimbabwean policymakers, researchers, SME owners/managers, and other relevant stakeholders in the implementation of sustainable supply chain management practices and to increase their performance given their importance to the economy.

Several implications are derived from our study. First, to enable sustainable coordination and trustworthiness among supply chain partners, it is essential for SME owners/manager quickly and aptly manage Covid-19 induced supply chain disruptions caused through stakeholder involvement and implementation of disaster communication strategies. Identification of suitable communication resources by SMEs to interact with focal firms and other partners for flawless real-time information, knowledge, and exchange of strategic plans related to supply chain decisions. Furthermore, SMEs can initiate Collaborative innovations and co-creation for 'customized' value-added products to fulfil the changing demand during emergencies raised by covid-19. Second, regarding sustainable learning management practices, amidst a Covid-19 state, SMEs need to develop themselves as a sustainable learning organisations, continuously disseminate the knowledge to their partners to enhance coordination in supply chain activities by actively adopting digital technologies. To this end, SME owner/managers could deploy of industrial innovations and business model transformation, which in turn, improve performance a dynamic business environment. Furthermore, SMEs should reinvent, invest and co-create their enablers to.

Third, looking at strategic enterprise orientation, for SMEs aptly create a balance between sustainability and performance during uncertainty, they should develop strategic thinking skills amongst decision-makers. This will assist businesses to sustain continuous improvement in the triple bottom line performance. Fourth, it is also necessary for SME owners/mangers to be flexible enough to experiment with various novel ways of sustaining the supply chains, forecasting and mitigation measures that are emerging on the market. To this end, in undertaking reconstruction practices, SMEs need to consider a variety of methods such as optimization, network analysis which during the Covid-19 pandemic are effective in assessing viability of existing supply chains, restructuring and reconfiguring the same for improved performance. Fifth, given the increasingly amplified concern on 'greening supply chains', SMEs need to pay more attention and invest in alternative energy sources, smart operations that promote the reduction of greenhouse gas emissions through 4IR technologies that improve energy efficiency and allow preservation of the natural environment for the future generations. In addition, there is an overwhelming need for government to create a permissive

operating environment through raising sustainable business awareness, offering tax holidays and smart energy subsidies to SMEs that undertake SSCMP for improved performance, and distinct SME environmental awareness and sustainability support programmes.

Whilst this study contributes to the nascent literature on the SSCMP-dynamic capability-SME performance nexus from a developing country's perspective, it is not without its limitations. Due to resource constraints, the results of the study cannot be generalised to other countries as it was confined to Zimbabwe and the use of a small sample size and non-probability sampling procedure. Also, the use of cross-sectional data means that we only managed to collect and analyse survey data from only at a single point in time, without a nuanced trend analysis to understand the long-term impacts of SSCMP and dynamic capability on the SMEs' economic, environmental and people performance. It is recommended that future studies replicate the in other countries, possibly undertake cross-country comparative analyses, incorporate mediating effects and employ probability sampling method to ensure increased participation by SMEs from all the country's provinces. In addition, future studies can also carry out a longitudinal survey that captures the SSCMP-dynamic capability-SME performance linkages for more rigorous findings, which, in turn, would be more effective for all stakeholders in implementing dynamic policy changes over the long term given the importance of SMEs in developing economies.

Acknowledgements

Competing interests

The authors declare no competing interest exists.

Authors' contributions

S.M. conceptualised and drafted the manuscript, whilst D.P. conceptualised, corrected and edited the article.

Ethical considerations

This study followed all ethical standards for research without direct contact with human or animal subjects.

Funding information

This research work received no specific grant.

Data availability

Data are available from S.M. upon request.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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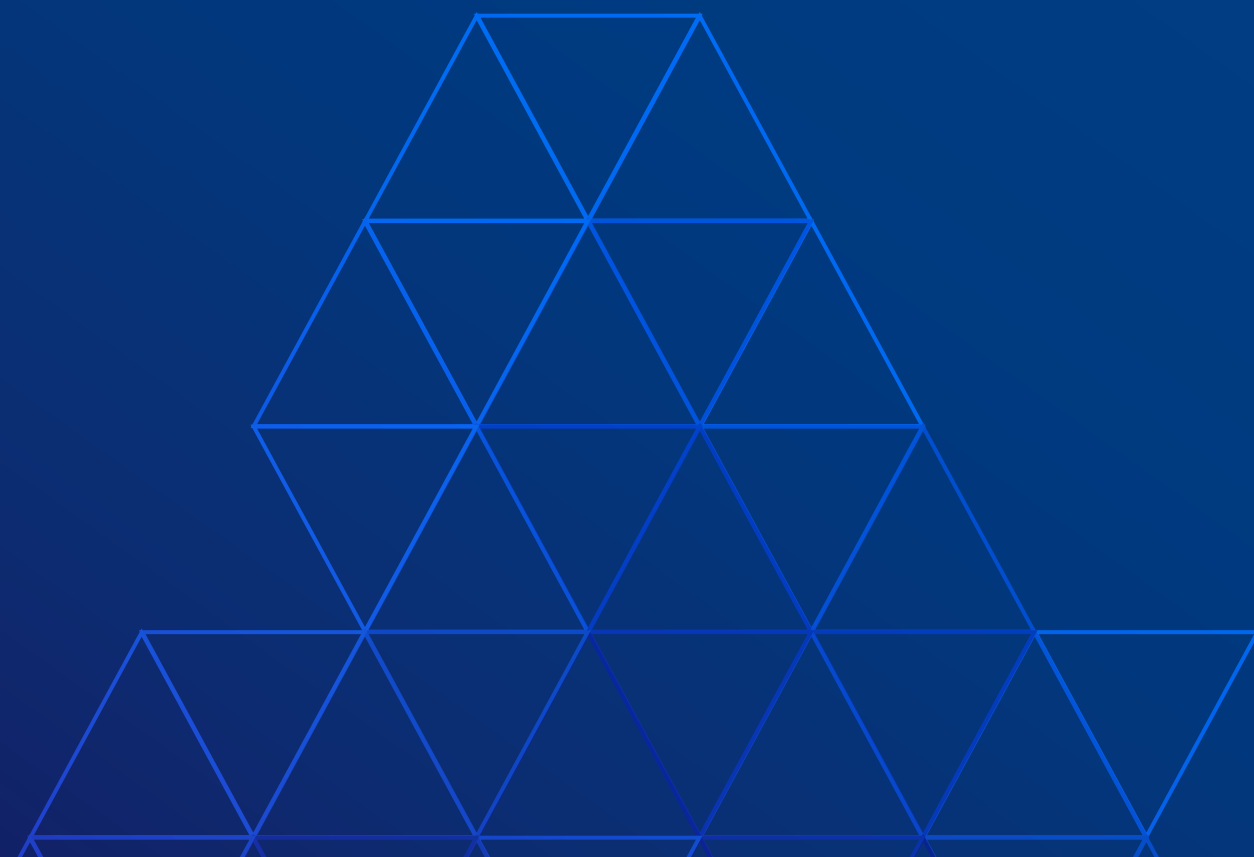
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COVID19 RESEARCH



Social Entrepreneurial Organisations' Responsiveness To Environmental Disruptions During The Covid-19 Pandemic: a Multiple Case Study

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Keywords

Social entrepreneurial organisations; dual mission; agility; adaptive leadership; disruptive economic environment.

Abstract

Social entrepreneurial organisations have been acknowledged for balancing dual social and financial objectives in a less than enabling economic environment. However, in addition to the existing challenges of balancing the dual mission within the current business climate, Covid-19 added a unique complexity, negatively affecting this environment at a macro-level. This paper reports on a section of a study that focused on social entrepreneurial organisational effectiveness in South Africa. This study evaluates how social entrepreneurial organisations are able to respond to a disruptive economic environment, with the sole motivation of keeping the dual mission intact. Utilising a multiple case study research design, including five social entrepreneurial organisations selected through purposive criteria. The qualitative research style included semi-structured interviews with the organisational leader, employees, stakeholders, and beneficiaries. A thematic analysis approach was applied to analyse the various cases. The findings point to a few organisations' abilities to apply suitable responses and others' continual struggle to maintain the delicate balance of maintaining the dual mission as their primary intent while trying to survive external environmental disruptions during the pandemic. A deeper understanding of the unique nature of dual missions and the importance of agility and adaptability during turbulent times is investigated. The paper concludes with recommendations and practical applications for social entrepreneurial organisations in a South African context.

1. Introduction

Globally, organisations commonly work dynamically through ever-changing environmental uncertainties and socio-economic disruptions (Žitkienė & Deksnys, 2018; Singh, Sharma, Hill & Schnackenberg, 2013). Likewise, social entrepreneurial organisations have not escaped the pressure of being exposed to the current disruptive economic environment (Perera, 2021; Bacq & Lumpkin, 2020; Weaver, 2020), influenced by the Covid-19 pandemic. Social entrepreneurial organisations face a complex balancing act in managing their dual mission, with a quest to be financially stable while doing social good (Siebold, Günzel-Jensen & Müller, 2019; Reiser, 2010). However, the onset of the Covid-19 pandemic added unforeseen complexities to the existing challenges affecting social entrepreneurial organisations (Chirisa, Mutambisi, Chivenge, Mabas, Matamanda & Ncube, 2022; Odeku, 2021).

The Covid-19 pandemic created tumultuous times and major social challenges due to the traumatic nature of the event. The intensity of the pandemic introduced new ways of living (Alon et al., 2020) and unusual practices of social distancing, wearing masks and limited physical contact with other individuals (Kraus et al., 2020). The unexpected nature and sudden arrival of the Covid-19 pandemic created a great deal of uncertainty about how to manage its effects and negative impact. However, Covid-19 was not an isolated occurrence and has had a traumatic effect on society. The virus presented as a global threat to the physical well-being of individuals (World Health Organisation, 2020), resulted in a downward turn of multiple economies globally (Meahjohn & Persad, 2020; Khambule, 2020), and the crises redefined the way societal needs had to be met (Ratten, 2020). The

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Covid-19 pandemic was disruptive, and finding innovative ways to manage the crisis was uncertain. The significant impact on the environment and society was evident, recognising the importance of incorporating a social component to entrepreneurship (Bacq et al., 2020). Social entrepreneurship addresses social challenges and aims to meet societal needs.

The purpose of this paper was to discuss the ways social entrepreneurial organisations managed disruptions created by the pandemic. A multiple-case exploratory study was conducted to understand the challenges five purposively selected social enterprises faced during the pandemic. Furthermore, the paper explored the adaptive approaches that were taken to mitigate the pandemic's challenges on the social entrepreneurial organisations in the multiple case study. The next section explains the problem investigated in this study.

2. Problem Investigated

Reports indicate that the Covid-19 pandemic exacerbated existing socio-economic challenges in developing countries like South Africa (United Nations Development Programme, 2020), particularly impacting the most vulnerable communities. There is significant evidence of strained health facilities, a downward turn in economic performance, limited resources in rural parts of the country, and inadequate living space (Ozili, 2020). Arguably, in a developing country like South Africa, social entrepreneurial organisations face several local challenges in addition to the current environmental uncertainties and the Covid-19 pandemic (Khambule, 2020). Therefore, this study sought to examine how social entrepreneurial organisations in a South African setting were able to adapt to environmental disruptions during the Covid-19 pandemic period while avoiding mission drift.

3. Research Question and Objectives

Research question: How did social entrepreneurial organisations respond to environmental disruptions during the Covid-19 pandemic while attempting to maintain the dual mission?

The primary research objective was to investigate social entrepreneurial organisations' responsiveness to local environmental disruptions during the Covid-19 pandemic.

Furthermore, two secondary objectives were considered in support of the primary objective, namely:

- to explore what challenges social entrepreneurial organisations encountered during the Covid-19 pandemic, and
- to identify how social entrepreneurial organisations responded to the challenges with the aim of retaining the dual mission.

4. Literature Review

This section will cover management principles that deal with challenging and disruptive business environments. First, adaptive leadership is discussed in relation to organisational adaptability. Secondly, followed by a discussion on the importance of organisational agility and responsiveness to disruptive environments as it relates to social entrepreneurial organisations follows.

4.1 Adaptive Leadership and Organisational Adaptability

Adaptability is an organisation's response to environmental change or disruptions. Adaptability can be defined as an organisation's ability to recognise and make the most of emerging market and technological opportunities (Chakravarthy, 1992) involving changes in an organisation's strategic position (Oktemgil & Greenley, 1997). Recent empirical evidence suggests that adaptive ability is based on competitive advantage, developing new products, and commercialisation (Hurley & Hult, 1998). Ultimately, an organisation is in a state of adaptation when it aims to achieve a fit with the changing environment (Tuominen, Rajala & Möller, 2004). The organisation goes through an adaptive process of realigning with the environment utilising available human, informational, and technological resources to achieve a feasible outcome.

Organisational realignment to a changing environment forms part of strategic development and requires the direction of adaptive leadership. Adaptation can be spontaneous or intentional and be implemented in response to or in anticipation of changes in environments (Bodlaj, Coenders, &

Zabkar, 2012). Adaptive leadership involves changing individual behaviours in suitable ways as the circumstances changes (Yukl and Mahsud, 2010). Individual or adaptive leadership is not sufficient for the spontaneous transmission to organisational adaptability. Organisational adaptability is about setting expectations for the individual and the organisation to realign with the dynamic and disruptive environment and mobilise the organisational team to overcome challenges and improve the organisation (Heifetz, Grashow & Linsky, 2009). An adaptable organisation is able to both expect and react to changes in the environment (Bodlaj, & Čater, 2019). Creating an organisation's capacity for adaptability allows the organisation to convert the culture by developing processes and actions that foster both proactive and reactive approaches during implementation. Adaptive organisations are agile and prompt in responding to changing environments.

4.2 Organisational Agility

Organisational agility is described as an organisation's ability to proactively respond, survive and progress or adapt to the uncertainty of environmental changes (Bessant, Knowles, Francis & Meredith, 2001; Dove, 1999). One of the essential requirements for organisational agility is a fast-paced response to change in complex turbulent environments (Darvishmotevali, Altinay & Köseoglu, 2020; Govuzela & Mafini, 2019; Sharifi & Zhang, 2001). Agility also implies an organisation's ability to maintain high performance, responsiveness and customer satisfaction (Yusuf, Sarhadi & Gunasekaran, 1999). However, this kind of responsiveness often requires flexible organisational leadership (Nadkarni & Hermann, 2010).

An organisational leader must manage and direct resources to attain strategic objectives (Mathew, Esowe, Udo & Ajagbe, 2016), particularly during turbulent periods. As reported in a McKinsey and Company (2021) survey article "*The impact of agility: How to shape your organization to compete*", instead of an organisation waiting for agility to happen from the bottom up (waiting for employees to initiate), organisational leaders need to take the lead. Therefore, organisational leadership plays an essential role in realigning the organisation to dynamic environmental changes, making effective strategic decisions (Akkaya & Tabak, 2020), and navigating through turbulent environments (Wageeh, 2016).

In contrast to the emphasis on leadership and organisational strategy to manage agile organisations, Bundtzen and Hinrichs (2021) point to the link between organisational agility and the VUCA elements. Their conceptual paper designed a new corporate agility model that linked the four elements (volatility, uncertainty, complexity, and ambiguity) necessitating organisational agility in response to disruptive periods. The result of their research is a model that defines distinct enablers of agility. Conversely, leadership and strategy are not incorporated as elements but rather seen as conditions secondary to the model's iterative learning approach (Bundtzen & Hinrichs, 2021).

Subsequently, attaining the organisational mission in a social entrepreneurial organisation is considered a primary focus and is associated with organisational success. Organisational success is described as the organisation's ability to attain its objectives over an extended period through growth, innovation and survival (Whetten, 1987). Furthermore, a study conducted at Menoufia University Hospitals in Egypt proved there is a positive and significant relationship between organisational agility and organisational success. Nafei (2016) also states that organisational leaders should place the focus regarding organisational agility on certain organisational factors, namely (a) sensing agility – the ability to scrutinise and monitor changes in customer preferences and trends among new competitors in the surrounding environment, including technological changes (Park, 2011); (b) decision-making agility – the ability to collate relevant information, identify opportunities and threats, interpret the information based on current events, efficiently coordinate available resources and be decisive about planning the next steps to circumvent disruptions to the organisation (Houghton, El Sawy, Gray, Donegan & Joshi, 2008); and (c) acting agility – taking action to coordinate organisational tasks and modifying business processes based on disruptive changes in the surrounding environment (Eisenhardt & Martin, 2000). Organisational agility thus seems to be activated during turbulent times, particularly for social entrepreneurial organisations attempting to balance a dual mission.

4.3 Social Entrepreneurial Organisations with a Dual Mission

Social entrepreneurial organisations are complex due to their dual mission that primarily focuses on meeting beneficiary needs and finding creative ways of ensuring the organisation's continued financial stability and sustainability (Lee, 2020). Furthermore, social entrepreneurial organisations have a social or environmental mission, viewed as their primary purpose, with the objective of having a significant developmental impact on local communities (Esposito, Brescia, Fantauzzi & Frondizi, 2021; Secinaro, Corvo, Brescia & Iannaci, 2019; Navarrete Moreno, 2017; Seelos & Mair, 2009). Mission drift occurs when the enterprise concentrates on one aspect of its mission at the expense of another, resulting in the intent of the social mission being weakened (Battilana, Besharov & Mitzineck, 2017; Micheline & Fiorentino, 2012). Thus, the social mission primarily drives strategic decisions in social entrepreneurial organisations.

In some countries, social entrepreneurial organisations are known as the Social and Solidarity Economy (ILO, 2020; Utting, 2018). Examples of the type of legal entities included in the social economy are a non-profit company with an income-generation initiative, a cooperative, a social enterprise, or even a hybrid social business. Therefore, a business that combines for-profit and non-profit legal entities is known as a hybrid social business (Claeyé, 2017). Moreover, a socially orientated organisation with an income-generating component ensures organisational stability, and a socially orientated organisation that strategically includes an entrepreneurial emphasis improves its chances of sustainability (Diochon & Anderson, 2009).

Viewed from a South African context, social entrepreneurial organisations currently deal with various environmental uncertainties and setbacks. A few highlighted challenges are the absence of a social economy policy, an unclear legal framework governing local social entrepreneurial organisations (Littlewood & Holt, 2015; Claeyé, 2017), and a less than supportive business ecosystem. In addition, there is donor fatigue (Moboya, 2017), the emergence of technological advances creates new social challenges (Karajz, 2021), and the complexity of the Covid-19 pandemic impacts the social economy sector. Ultimately, the ability to respond to challenging and disruptive environments may depend on the social entrepreneurial organisation's responsiveness.

However, the approach adopted by social entrepreneurial organisations to maintain the dual mission during unpredictable and turbulent times, as prompted by a pandemic such as Covid-19, is not yet apparent in the literature. For this study, the researcher thus considered social entrepreneurial organisations in a South African setting.

5. Research Methodology

A qualitative research method was applied (Creswell, 2013; Patton, 2002) using an exploratory approach (Saunders, Lewis & Thornhill, 2012). The researcher explored each case study, which promoted a deeper investigation into each of the social entrepreneurial organisations. Furthermore, the investigation determined the phenomenon of agility in a specific context, namely that of social entrepreneurial organisations in a developing country like South Africa.

5.1 Research Design and Sampling

A multiple case study (Yin, 2013) research design was used, including five social entrepreneurial organisations as the unit of analysis (Marshall & Rossman, 2011). The benefit of a multiple case study is that it allows for a deeper empirical investigation of each case to make sense of the phenomenon in context and its natural settings. A further advantage is the ability to do a cross-case study investigation exposing similarities and differences between the cases. The specific phenomenon was social entrepreneurial organisations' ability to respond to the uncertainty created by the pandemic while maintaining their dual mission.

Table 1: Summary of case studies - Social entrepreneurial organisations included in the study

ORGANISATION	LEGAL BUSINESS FORM	ORGANISATIONAL OBJECTIVES
Organisation A Gauteng urban	A non-profit company	Organisation A provides information and digital literacy training through community knowledge centres (CKCs) nationally, providing access to computer equipment, the internet and training. Its vision is to empower, educate and e-connect.
Organisation B Gauteng urban	A hybrid social enterprise (a for-profit company and non-profit organisation)	Organisation B recycles used and new clothes, focusing on empowering people with disabilities (PWDs). Recycling: In partnership with schools and private businesses, reusable clothes are resold through micro-businesses. Upcycling: repair and upcycle into toys for early childhood development in low resourced crèches. On-Route Inclusion: Through on-route life skills and supported employment, PWDs are placed in meaningful jobs in Organisation B and partner businesses.
Organisation C Gauteng peri-urban	A hybrid social enterprise that includes Organisation C (non-profit organisation and a for-profit company)	The vision, as stated by CK01, is ' <i>sparkling personal and community essence</i> '. Organisation C intends to come alongside, spark potential (essence), and support individuals and groups until they can continue independently. Also, it aims to develop Organisation C1's programme to uplift orphan children in the Zandspruit community through jewellery making and community development.
Organisation D Free State Rural	A non-profit organisation	Organisation D focuses on community development. It runs various programmes with the youth and the community, such as education programmes, after-school care, social behaviour change programmes, entrepreneurship and crime prevention workshops.
Organisation E Free State peri-urban	A non-profit organisation	Organisation E serves and develops the most vulnerable individuals in the community. Key areas are educational development through early childhood development programmes, social development through a multi-purpose centre and after-school care, and entrepreneurship development through training and workshops.

Source: Own compilation

Purposive sampling (Creswell, 2013) was utilised when selecting the social entrepreneurial organisations included in the study. The sample frame for the selection of the social enterprises included social enterprises that were acknowledged and recognised for making a social impact. The researcher initiated the sampling by including a minimum of four provinces, namely Cape Town, Gauteng, KwaZulu-Natal and the Free State. The unexpected arrival of the Covid-19 pandemic created uncertainty and a lack of organisations committing to participate in research. The five cases, as represented in Table 1, were selected from nomination lists of social entrepreneurial organisations making a difference at the local community level. The nominations were from the private sector and a community engagement department in a higher education institution.

The cases had to fit the following criteria: (1) the organisation had to have a mission addressing a socio-economic or environmental need; (2) the critical informant had to be available to participate in the study; and (3) the social enterprise had to have a social media or website presence as a source for secondary data, as well as available reports or articles. To enhance consistency, (4) the organisations needed to be a formally registered entity in South Africa, operational for three years or longer.

5.2 Data collection

Semi-structured interviews were used as a primary data collection method. Data saturation was reached after the participants of the first three social enterprises were interviewed, including two Gauteng and one Free State organisation. The researcher decided to add one more organisation from each province, which brought the total to five social enterprises included in the study. The managing director, social entrepreneur of the social enterprise, or the founding members of their organisations were nominated as the key informants and main study participants in each case study (Merriam, 2009). The key informant assisted the researcher in identifying additional individuals associated with the social enterprise to be included as interviewees.

Table 2: Total number of participants across all five case studies

Social Enterprises Total Case Studies	Key Informant(s)	Employees	Beneficiaries	Stakeholders	Total number of study participants
n=5	n=6	n=8	n=11	n=5	n=30

Source: Own compilation

Initially, 35 individuals were approached to participate in the study. However, as presented in Table 2 only $n=30$ individuals were available to participate in the study. The additional participants associated with each organisation were the employees, stakeholders, and beneficiaries. In summary, 30 interviews were conducted between the five organisations. The number of individuals interviewed from each organisation included in the study follows: Organisation A included $n=8$ participants, Organisation B included $n=7$ participants, Organisation C included $n=4$ participants, Organisation D included $n=5$ participants, and Organisation E had $n=6$ participants. The inclusion of different groups of participants added an important element of credibility to the study, making participants' voices part of the collected data (Pelser, Bosch & Schurink, 2016). The different participant groups associated with each social enterprise provided an array of insights reflected in the data collected.

To maintain anonymity, the researcher renamed each social enterprise, and participant code were allocated to each participant included in the study. For example, Organisation A was assigned the abbreviation 'A'. The participant's organisational role was added; for example, a beneficiary was labelled 'B', followed by a number, such as '01' for the first beneficiary interviewed, hence AB01. Similarly, abbreviations were assigned to each participant group: 'K' for the key informant, 'E' for the employee, 'B' for the beneficiary, and 'S' for the stakeholder. The key informants also provided secondary data relevant to the organisation, including website information, reports available online, social media posts, and online articles. The collection of data happened between November 2020 and January 2021. The researcher utilised Zoom (an online communication application) and face-to-face interviews following the Covid-19 protocols of social distancing and wearing masks. After setting the date of the interview, the researcher followed up with a call to confirm all participant details and ensured each participant received the schedule of questions so they had an opportunity to clarify any uncertainties. After the data collection, all the interviews were transcribed. The transcribed documents were sent to each participant, who had an opportunity to make corrections to enhance the integrity and validity of the data (Creswell, 2013; Strauss & Corbin, 1998).

5.3 Data analysis

All the interviews were audio-recorded, transcribed and imported into ATLAS.ti a data analysis software tool for coding and data analysis. The researcher read through the transcripts multiple times to make sure there was an understanding between the researcher's description of participants'

feedback and their actual perspectives (Bitsch, 2005), determined by internal validity and credibility in quantitative research (Bryman, 2012). The researcher also did a line-by-line exploration by adding descriptive and in vivo codes (Saldaña, 2015) or notes to highlight ideas or cluster concepts in the dataset, looking for patterns or relationships in the complete dataset relevant to the research questions. The secondary data provided by the key informants were copied into word format documents for each case study and also imported into the ATLAS.ti software for coding. The codes were allocated using the ATLAS.ti software, reflected on the right margin of the document, which helped minimise errors and reflected any duplication or overlapping in the code allocations.

Each of the five case studies was analysed separately. The researcher employed a thematic analysis (Saldaña, 2015) in this study. A coding process was applied to each transcript (Saldaña, 2013) of each interview conducted to provide descriptive markers to portions of data and identify either concepts or ideas embedded in the dataset. Followed by the categorisation of codes, the researcher grouped or arranged similar codes that shared similar characteristics. A code in qualitative research is a word or short phrase that representatively assigns an essence-capturing attribute for a portion of information or visual data (Saldaña, 2015). Once the codes were categorised and organised based on shared characteristics, the next step the researcher used was to combine multiple categories to create high-level categories to identify themes (Miles et al., 2013; Saldaña, 2015). A theme is a phrase that describes a piece or pieces of data across the complete dataset (Saldaña, 2015). As part of the thematic analysis process, similarities and differences in the data were identified based on the cross-case analysis; overarching themes were labelled (Boyatzis, 1998; Kiger & Varpio, 2020). All themes were then compared across the five case studies, and standardised themes were checked against data to enhance validity. New themes or categories were reviewed by peers. The themes that specifically associated to adaptability and agility were used in this paper.

6 Findings

External environmental factors become considerable business disruptors and are presented as challenges for social entrepreneurial organisations. The challenges experienced during the Covid-19 period were a significant theme in the dataset. Organisations ultimately took action to curb the negative impact, determined to meet the dual organisational objectives. The findings concentrated on organisations' responsiveness to the disruptions caused or exacerbated by the pandemic.

The data also contained highlights of how each organisation responded to the disruptions and challenges experienced in the first few months of the Covid-19 period. Moreover, the challenges each social enterprise face outlined their responsiveness or 'response-ability', emphasising their unique actions in response to the encountered circumstances.

Research objective one: to explore what challenges social entrepreneurial organisations encountered during the Covid-19 pandemic.

The themes and sub-themes in Table 3 presents the challenges five social entrepreneurial organisations encountered during the Covid-19 pandemic, addressing research objective one.

Table 3: Challenges social entrepreneurial organisations encountered during the pandemic

Theme 1:	Sub-themes:
Social entrepreneurial organisations confronted with challenges in a less than enabling local environment during the Covid-19 pandemic.	<ul style="list-style-type: none"> • Lack of government support • Access to funding became problematic • Difficult to service beneficiaries' needs during the lockdown period

Source: Own compilation

One of the main setbacks for social entrepreneurial organisations is the stated lack of government support. South Africa is slow in finalising the Social Economy and Solidarity Policy (Patel, 2021), initiated in 2017 and supported by the South African Department of Economic Development, the

International Labour Organisation (ILO), and the British Counsel. The policy development process was in the consultative green paper stage for a while and then moved to the white paper stage in 2021. In the absence of a policy, it will take time to initiate a legal framework and taxation regulations to create an enabling environment for social entrepreneurial organisations. The social entrepreneurial leaders in the cases included in this study expressed discontentment regarding some of these matters (Steinman & van Rooij, 2012). The fact that there is no officially recognised legal entity for social enterprises creates an unfavourable environment in which these organisations must operate. Two social entrepreneurs from different case studies emphasised, *“This is the complexity of South Africa, ... but ultimately there needs to be a legal entity because it's very difficult for us”* (BK01), and the founder of Organisation A mentioned, *“... we need a social entrepreneurial vehicle ... a legal entity”* (AK01).

Generally, government funding for socially orientated organisations, such as non-profit and charity organisations, has decreased over the years (Moboya, 2017). Specifically, during the pandemic, government offices did not operate at optimal capacity, negatively impacting the non-profit sector. The finance manager at Organisation E, EE01, raised a concern about the *“loss of income ... for this financial year and we signed an agreement but the memorandum came in about 8 [eight] months late, so since March till end of August 2020 there was no funding”*. Furthermore, during the pandemic's extended lockdown period, the government provided small businesses with a Debt Relief Fund (Parliamentary Monitoring Group, 2021). Unfortunately, although social entrepreneurial organisations were instrumental in providing services to underserved communities during the pandemic, they were excluded from the benefits of the relief fund, one of the pitfalls of the government's response (Khambule, 2020).

Access to funding is problematic for a social entrepreneurial organisation. The traditional banks and financial institutions will not fund a social entrepreneurial organisation in South Africa, which was emphatically highlighted by BK01, *“... no bank in this country understands [social entrepreneurial organisations], or will fund our transaction. No bank in this country”*. The participant expressed disappointment in not being able to attract capital investment in the current business environment. As further explained by the social entrepreneur at Organisation B, this organisation has a hybrid business model structure. However, even in this case, the organisation is unable to attract international funding due to the restrictive corporate laws in the country. As BK01 further elaborated, *“... there [is] funds called impact [funds]... the funds will only be paid to [a] social enterprise ...”*.

The extended lockdown periods during the pandemic created constraints with a direct and negative impact on beneficiaries and communities in underserved communities. Most businesses and organisations were not allowed to operate, with the exception of businesses providing essential services. At Organisation B, social entrepreneur BK01 stated that, *“Covid-19 had an impact because we are not allowed to operate like everybody else”*. Also, Organisation C was in the middle of an “organisational restructure”, as highlighted by founder CK01. The purpose was to facilitate the implementation of new programmes that would make the organisation more sustainable; this was during the same period when the Covid-19 pandemic unexpectedly arrived. CK01 sadly reported, *“Covid-19 came along so we have[not] been able to finish any of the programs that we had in mind, i.e. entrepreneurial development and a loan scheme”*. The lengthy nature of the pandemic and unexpected challenges had a detrimental impact on Organisation C, which eventually closed down in 2021. The challenge for most social entrepreneurial organisations is that funding is directly linked to the implementation of programmes and the provision of services for beneficiaries.

Moreover, social distancing regulations infringed on the delivery of organisational programmes and meeting beneficiary needs. An employee at Organisation A highlighted that *“... obviously, it [lockdown] interrupted learning”, which negatively impacted training at the CKCs, the schools and children wanting to use the internet for school assignments* (AE02). Another example was offered by the founder (CK01) from Organisation C, who agreed programmes were put on hold during the hard lockdown, which negatively impacted beneficiaries. One of the employees (CE01) stressed that, *“Yes ... [it did] impact the children ... because it seems like they do not understand [what] Covid [is]”*.

An employee from Organisation D (DE01) reported Covid-19 affected them significantly since it put a stop to all programmes, *“we couldn’t progress on many programmes like YOLO to educate them [youth] and it prevented the staff from visit[ing] our Correctional Centre-Child-Stop”*. The limitations imposed on programme implementation made it severely challenging to meet beneficiary needs. During the pandemic, beneficiaries’ needs extended beyond the programmes, and beneficiaries had basic needs for medical care and food.

Research objective two: to identify how social entrepreneurial organisations responded to the challenges with the aim of retaining the dual mission.

The themes and sub-themes in Table 4 reflect the adaptive approaches social entrepreneurial organisations utilised in responding to disruptive environmental challenges during the Covid-19 pandemic, addressing research objective two.

Table 4: Responses by social entrepreneurial organisations during the pandemic

Theme 2:	Sub-themes:
Employing adaptive approaches to address disruptive environmental challenges.	<ul style="list-style-type: none"> • Adopting creative methods to improve organisational strategies and processes • Diversifying service offering • Intentional networking

Source: Own compilation

In response to the challenges social entrepreneurial organisations faced during the pandemic, each organisation adopted creative methods to improve organisational strategies and processes. Organisation A created easier access to introductory information technology (IT) training courses and *“offered Covid-19 special, the free [training] course”* (AE01) during the lockdown period. As stated by one of the programme managers, *“so Covid-19 has taught us that ... sometimes you don’t need a laptop, you can work on your mobile phone because most of our fellow South Africans have a mobile phone”* (AE02). Organisation A applied a social franchise model, which generally requires a geographic presence. However, during the pandemic, Organisation A adopted a hybrid approach to deliver its programmes and training. The organisation transitioned from only using the computer centres to using online platforms and devices such as using mobile phones to conduct training, as well as social media platforms to reach various local and business communities, which broadened the reach of beneficiaries. Organisation A also recognised that in making a move to more online interventions and training, additional beneficiary support was required. AK01, the founder of the organisation, mentioned proudly, *“that Organisation A [is] developing our virtual platform ... [1] it will be used to connect all our community partners ... [2] is then that we can use the virtual hubs to open to ... beneficiaries and also [3] maybe ... trying to motivate and get it [website] zero-rate because we are an educational space”*. The success of adopting more digital methodologies to reach beneficiaries was evident in the increased number of individuals who completed the training programmes.

In comparison, Organisation B had a different beneficiary profile reaching out to people with disabilities (PWDs). The mothers (or guardians) of PWDs also received business skills training. Due to the economic downturn, Organisation B provided the female micro-business owners (the mothers) with enough bales of clothing to sell during this period, without requiring up-front payment. BK01 mentioned that in lockdown Level 4, the micro-businesses were allowed to sell clothes in the local township, *“and they killed it”* [meaning they did exceptionally well]. In addition, the organisation mobilised efforts to raise donations to put together food parcels to *“care for the beneficiaries”* (BK02) physical and basic needs. Furthermore, the organisation creatively made use of idle time and partnered with schools so learners could get involved. As mentioned by BK01, *“lock down they can make the toys at home ... we give them their kits ... and little videos how to make it”*.

Moreover, from an organisational process perspective, the managing directors used the lockdown period to create three innovative solutions to improve internal operational processes. The organisation created software to automate the internal recycling operational process – BK01 stated, *“we built the first wireless internet of things, post-consumer processing system”*. In addition, Organisation B

digitised the life skills training by creating “*how-to-do [video] clips*” (BK02) for job-specific tasks and PWDs, which allowed more PWDs to be reached than in a normal face-to-face training setting. Finally, Organisation B also found an innovative way to mobilise its business by forming a partnership to design “*a 3-phase power solar power trailer*”. A mobile solar power unit can be used to recycle anywhere, with the opportunity to create jobs for PWDs in local communities. The innovative approach applied by Organisation B improved the internal process of clothes recycling and created an opportunity to enhance its outreach strategy to PWDs at a local community level.

Organisation C, which operated as a hybrid entrepreneurial organisation, was dissolved due to various negative external environmental factors. Various challenges, including Covid-19, made it impossible for Organisation C to continue. The founder (CK01) sadly indicated that “*Organisation C came to a natural close*”. In collaboration and from a strategic perspective, the decision was made to hand the outreach programme with beneficiaries (children from the area) to a well-established non-profit company (NPC) near Zandspruit. CS02, a pastor in the area, indicated “*CE01 is now going to establish this [ECD] school in your area [Zandspruit]*”. The NPC agreed to adopt Organisation C’s programme, which would include an early childhood development school for children in Zandspruit. The funder for the children’s outreach programme also agreed to transfer the funding to the new organisation so the good work could continue. Although the organisation was closing, the founders of the organisation acted strategically to successfully save the project and take care of the beneficiaries’ needs, demonstrating a commitment to the primary mission.

Networking fostered ways to maximise available resources during the pandemic. The rural environment has its own unique challenges, such as high levels of unemployment, poverty, lack of municipal services and slow economic growth. To overcome the challenges of a resource-poor environment, Organisation D leveraged new partnerships through collaborative efforts with partner organisations (government agencies, private businesses and other non-profit organisations) to maximise community impact. The founder (DK01) mentioned that they “*invited so many stakeholders such as Lifeline, Right to Care, UFS, some schools ... there are some aspects we can say yes, on this matter yes we’ve been successful*”. Furthermore, in Organisation E, the founder mentioned, “*...it was a new partnership that opened up*”. Thus, while Organisation E no longer had use of the building they previously utilised, a unique opportunity was offered by the local primary school to use its school grounds for after-school care. Furthermore, it was favourable that most of the beneficiaries were from the same school, which reduced logistical costs. The bakery project was also to be re-established at the school, which became a win-win situation for both Organisation E and the school. During the lockdown, many of the local residents lost their employment, but through collaborative efforts with other non-profit organisations, food parcels were provided for the Heidedaal local community. In addition, the organisation secured vegetables from a university vegetable garden during the quiet lockdown period. During this time, there was an increase in collaborative efforts to ease the negative impact of the pandemic.

Moreover, the organisations had to be flexible and open to new ways of ensuring the survival of the organisation. Due to a lack of funding during the pandemic, Organisation D and E decided to diversify and accepted the opportunity to be a service provider to a local university in the Free State province. This university asked Organisation D and E to provide Covid-19 monitoring services to the university’s QwaQwa and Bloemfontein campuses, which generated much-needed income and created jobs for the local residents during the lockdown period. One of the beneficiaries working as a Covid-19 monitor (EB01) stated, “*Covid-19 opened a door that was shut, and that’s how I have a job today, so Covid-19 had a good influence on Organisation E*”. Embracing the opportunity and finding creative ways to fund and sustain the organisation during the economic downturn was a necessary strategic decision made by the organisational leaders.

The diversity of creative approaches and the dexterity used by the social entrepreneurial organisations to mitigate the disruptions caused by external environmental factors, including the negative impact of Covid-19, became apparent throughout the dataset. The investigation determined organisational leaders actively took the lead in managing the disruptions caused by the pandemic. In most instances,

the ability to respond to Covid-19 challenges stirred creativity, innovation and a keen responsiveness to initiate suitable solutions.

7 Managerial Implications

A common element in the social entrepreneurial organisations included in the study was their determination to meet the dual mission, despite external environmental factors. Macro-environmental factors affecting the social entrepreneurial organisations included the downward spiral of the economy, which led to job losses and increased socio-economic challenges, shrinking funding and available grants, as well as the lack of a social economy policy and a legal framework for social entrepreneurial organisations (Gonzalez & Dentchev, 2021). More recently, one of the substantial macro-disruptors was the Covid-19 pandemic (Odeku, 2021), presenting the four turbulent VUCA elements as pointed out by Bundtzen and Hinrichs (2021).

Furthermore, the author reflects on the association between the VUCA elements of organisational agility and organisational leadership adaptability in the five social enterprise case studies. The section focuses on their responsiveness during the environmental turmoil created by the Covid-19 pandemic. As elaborated, organisational agility is associated with elements such as volatility, uncertainty, complexity, and ambiguity (Bundtzen & Hinrichs, 2021). In a cross-sectional exploration of the cases, the VUCA elements were evident in each of the five case studies. First, the volatility or unpredictability of a health crisis such as the Covid-19 pandemic had a significant negative impact on all the social enterprise cases included in the study. The findings indicate that the unexpected arrival of the pandemic caused a setback for each of the social entrepreneurial organisations. The level of environmental disruption created through national lockdowns and social distancing brought all organisational activities to an unanticipated halt. Second, the unexpected closure of all businesses, including social entrepreneurial organisations during this period, created uncertainty for the future sustainability of the organisations in terms of funding (Moboya, 2017). Constraints were also realised in meeting beneficiary needs. Third, the complexity of the situation required organisational leaders to manage the challenges that manifested at an organisational level. The findings indicate that it was the organisational leaders who took action to deal with the challenges through creative and innovative initiatives, assisting in curbing the negative societal impact. Fourthly, the ambiguity experienced in the ever-changing disruptive nature of the pandemic (SAcoronavirus, 2020). Moreover, at an organisational level, the ambiguity related to the extended timeframe of the pandemic and the uncertainty it created.

According to Nafei (2016), three organisational factors should be considered to determine organisations' levels of agility, namely sensing agility, decision-making agility, and acting agility. First, sensing agility means leadership within the organisation should have the ability to scrutinise and monitor changes and trends within the business environment. Unarguably, the pandemic's arrival was unpredictable, and leaders globally and across most sectors did not have a sense of the extent of its impact at an organisational level. Therefore, there was a lack of planning or preparation to mitigate the effects of the pandemic on the social entrepreneur organisations'.

Second, leaders with decision-making agility have an opportunity to collect relevant information, identify opportunities and threats, and be decisive about planning the next steps to prevent disruptions impacting organisational activities. In this instance, the pandemic created socio-economic turbulence, and the information provided in itself was uncertain and unpredictable, which made decision-making complex. However, those leaders who decided to make changes based on the available information and had the drive to find ways to fulfil the organisational mission achieved some progress. A few examples were: Organisations A and B decided to utilise available technology to reach beneficiaries virtually; all five organisations leveraged the available networks to strengthen collaborative efforts to bring services to beneficiaries; and Organisation D and E decided to diversify their service offering to create an opportunity for income generation (Barraket, 2020; Argyrou, 2017). Organisation C had to close because it was no longer sustainable. However, a strategic decision was made first to find an entity to adopt the organisation's projects and social mission to uplift orphans and disadvantaged children from the Zandspruit community.

Thirdly, acting agility entails coordinating organisational tasks and maximising resources to enhance business processes. It tests an organisation's ability to respond appropriately to dynamic events. For example, Organisation A continued using the social franchise business model, but used technology and digital approaches to enhance the training and support offered. Organisation B utilised the dormant lockdown period to enhance internal organisational processes by creating three different types of innovations in a novel manner, creating opportunities for organisational development and growth (Akkaya & Tabak, 2020). Organisations D and E strengthened collaborative efforts for various stakeholders and community organisations to work together and create mutually beneficial partnerships (Bertotti, Harden, Renton & Sheridan, 2012; Jug, 2020). Moreover, in winding up Organisation C, the last available resources were used to ensure beneficiaries were not abandoned. Moreover, as an observation in all five cases, acting agility occurred reactively and not proactively, and it appears the pandemic forced social entrepreneurial organisations to push beyond the 'comfort-zone' of their daily operations. From a managerial perspective, it is evidently imperative for organisational leadership to be more forward-thinking so agility becomes part of the organisational approach.

Furthermore, from a social entrepreneurial perspective, there was a direct and negative impact relating to the Covid-19 pandemic. The pandemic resulted in extended mandatory lockdown periods, socio-economic volatility, and a standstill in many private and public industries. The ripple effect on social entrepreneurial organisations was that it negatively impacted donor funding and grants from the private and government sector. Governments across the globe instead allocated significant resources to flatten the curve and control the fast-spreading virus (Science Newsletter, 2020). The Covid-19 social distancing protocol also made servicing the beneficiaries significantly more complex, and at the same time illustrated the urgency and difficulty of reaching beneficiaries to assist them with basic needs. Subsequently, from a managerial perspective, social entrepreneurial leaders were challenged in dealing with ambiguities from one day to the next, balancing the need to meet the social mission, while keeping the organisation sustained during the precarious Covid-19 lockdowns.

Undeniably, dealing with a dynamic disruptor (like a pandemic) in combination with challenging local environmental factors requires a decisive organisational leader. In a social entrepreneurial organisation, the social entrepreneur is the organisational leader and driver of the organisation's mission (Jackson, Nicoll & Roy, 2018). The constant pressure experienced by social entrepreneurial organisations to maintain the dual mission during turbulent times requires decisive and adaptive leadership (Hiefertz, Grashow & Linsky, 2009).

Although organisational agility requires a prompt response to disruptive environmental situations, a connection exists to an organisational adaptive leadership approach. To develop organisations capable of responding appropriately to environmental disruption requires dynamic leadership that adopts principles of adaptability. Leaders who are rigid and inflexible in organisational systems, processes, and activities suppress adaptive and creative methods by limiting new ideas and change (Battilana & Casciaro, 2012; Harvard Business School, 2003). Adaptive leaders are responsive to change by first assessing the situation, followed by directing and managing organisational resources to implement feasible solutions. In the five case studies included in this investigation, two of the organisations embraced change at a strategic and innovative level. They implemented creative ways of achieving the dual mission. Two of the organisations diversified the type of service they rendered to create financial stability for the organisation, which is a critical aspect of balancing the dual mission. Mobilising available resources and networking became a primary way of taking care of beneficiaries basic needs during this tumultuous time, which created an increase in social capital.

Adaptive leadership demands proactively planning for changing conditions, which was lacking in most of the five social enterprise case studies. There was an exception: one of the organisations in the Free State indicated they have strict financial controls and have a reserve fund available for any emergencies. This fund carried the organisation through the full lockdown period. The other organisations experienced financial strain due to the shortage of funding during the pandemic.

Furthermore, only two of the five organisations started utilising available digital technology; regrettably, this was a reactive means of surviving the disruptive environment. An adaptive leader is able to navigate a changing environment, but more importantly, collectively include the organisational team and make lasting changes to organisational processes and adjust to the changing environment. The team's involvement in making changes was evident in the organisation that promoted digital literacy. This team investigated and implemented the new training strategies and assisted with the design of the virtual hub. In the organisation that focused on clothing recycling, the two founding members developed the innovations now being applied in the enhanced processes, with the overall organisation benefiting.

The following recommendations are offered: (1) the finalisation of the South African social economy policy, which is currently in the white paper phase; (2) access to funding from both government and the private sector, but with more efficient systems in place to enhance organisations' agility; (3) procurement and supply chains should include social entrepreneurial organisations; (4) training institutions should include training courses on creative problem-solving and innovative leadership to promote agility and adaptive practices; and finally (5), social entrepreneurial practitioners should collaborate more with third-sector organisations to strengthen current networks the local ecosystem.

A key limitation in this study was the restrictions created by the Covid-19 pandemic, lockdown measures and social distancing. The researcher, in most instances, had to use virtual online communication tools, preventing an opportunity to connect with the study participant or pick up on body language. Furthermore, the organisations in other provinces that declined to participate in the study limited the geographic representation of the sampled case studies. Moreover, the South African setting means findings are only presented from a developing country's perspective; however, this presents an opportunity for a comparative study with other developing countries. Future research could also observe which management practices are applied to deal with turbulent business environments.

8 Conclusion

Despite the Covid-19 pandemic, the social entrepreneurial organisations sampled for the study demonstrated that decisive leadership, flexibility and organisational agility are essential while working through external environmental disruptions. However, it is also evident that social entrepreneurial organisations have a reactive leadership approach and need to practice proactive planning to deal with potential environmental disruptions. In the South African context, the absence of a social economy policy and the lack of a conducive business environment makes it increasingly difficult for social entrepreneurial organisations to thrive.

This paper contributes to the South African literature considering Covid-19's impact at a social entrepreneurial organisational level. Uniquely, the paper focused on the duality of the social entrepreneurial organisation's mission in relation to organisational responsiveness. Finally, as aptly stated by one of the participants, "*Covid-19 has taught us ...*" (AE02). Therefore, in learning to navigate the external disruptive environment, social entrepreneurial organisations need adaptive leadership and organisational agility management practices to survive environmental uncertainties while maintaining the dual mission to run a successful social enterprise.

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Retail Supply Chain Design Resilience in South Africa during the COVID-19 Pandemic

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Keywords

Fast Moving Consumer Goods; pandemic; product availability; retail supply chain; supply chain resilience

Abstract

The world is facing heightened pressure from environmental issues as well as uncertainty in businesses such as the Fast-moving Consumer Goods (FMCG) industry. The emergence of the coronavirus pandemic disrupted the retail supply chains, its customers' movements were restricted, society and health crises intensified, and all these tested the resilience capability of the FMCG industry. The purpose of this article is to establish the retail supply chain design capability to develop operational resilience from the effect of the coronavirus pandemic in South Africa. A quantitative, non-probability sampling was adopted with a sample size of 300 respondents, selected from the five giant retail stores in South Africa. The main findings indicate that environmental changes, (a dimension of supply chain design) contribute most to the increase in the variance of resilience. The takeout in this study is that businesses need to guard their shores by building resilience. For instance, re-innovating of their business model will assist retailers to address impending or persistent crises. Secondly, resilience will allow FMCGs to retain their competitive positioning as retailers implement strategic plans and policy measures for the benefit of the business.

1. Introduction

The concept of resilience is a critical emerging research area in the supply chain literature that has become imperative in assisting to weather disruptions without affecting business operations. Supply chain resilience is described as the adaptive capacity to prepare and respond to disruptions, recover cost-effectively, and advance to a better state than before the disruption. The South African retail market faces numerous threats to its business; hence the purpose of this study was to establish the capability of the retail supply chain to become resilient from the effect of the coronavirus pandemic. The rapid acceleration of the virus in terms of spread has challenged retail businesses more than envisaged. This sector is vulnerable as it is less prepared for uncertainty and complexity in its environment, even as the impact of this pandemic may be profound. The impact of COVID-19 on retailing comes in a varied package; from lower consumer spending that decimates its profitability through to lockdown measures that hampered its operations to the increase in the unemployment rate as some businesses close operations completely. Coronavirus has immersed retail businesses into a vulnerable position thereby raising the bar for serious discussion on collaboration and trust in the FMCG industry. Despite the provision of retailing to consumers, persistent inequalities in disposable income exist, as access is limited to the purchasing power of the rich against the poor consumers. Collaboration amongst the retailers would help improve rapid access to goods and the development of local farmers' capacity so that the dependence on international and long supply chain agreements is lowered. Moreover, trust is a significant requirement for an effective resilience response.

Coronavirus has taught retailers that agility and speed will be the new premise for differentiation as it allows effective responses to crises. At the scourge of the pandemic on retail, many expectations were

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defied, hence yielding multiple responses such as behavioural changes and tactical plans in managing the business.

The need for retail to adjust its resilience capabilities has advanced current supply chains through mediums such as rethinking 'agile' retailing whereby customers become the core focus of the business as well as the full use of digital communication. Digital communication has enabled retailers to engage with their customers as well as the use of social media as a marketing platform. Also, the trading competitiveness of the retail business and supply chains are improved. Furthermore, the shift to local farmers, manufacturers, and local stores has strategically contributed to economic development, employment, increase in demand for locally produced goods, and community growth. The need for retail to adjust their resilience capabilities has seen the improvement of technology used to meet order fulfillment through leveraging a robust order management system that can connect its supply chain.

However, South African retail business capability to design the supply chain for resilience in the context of COVID-19 is yet to be addressed. This is important as the retail industry is continuously tested by the macro business environment, thereby affecting its supply chain. We seek to address this research objective:

- To establish how retail businesses in South Africa are resilient during the COVID-19 pandemic with supply chain design.

Focusing on the five retail stores in South Africa with the employment of almost 2.8 million people, the FMCG industry supports the economy and needs to be investigated, as this kind of study will advocate for its growth and competitiveness.

Technological advancement in retail means that several businesses are globally linked via various means, as consumers use new behavioural patterns such as online retailing, to demand products and services (MacCarthy, Blome, Olhager, Srai & Zhao, 2016) even in times of pandemic or disruptions. From a consumer perspective, sharing of information permits a first-hand notice of occurrences at a lower end of a supply chain. According to Grewal, Roggeveen & Nordfalt (2017), the custodians of information, for instance, the retailers, become empowered using technology, which hastens the services offered to customers, reduces cost, and increases sales. Using technologies at an operational level is widespread (Efendioglu, 2015) though retailers' motive is always with optimising their in-store experiences offering (Willems, Smolders, Brengman, Luyten & Schoning, 2017). The economic influence dimension of supply chain design for resilience stimulates retailing through better policies to govern businesses. From an economic perspective, a transport network ensures continuous product delivery to end consumers. This prompts stakeholders to speedily overhaul upgrade and maintain the roads, as it can be a criterion to build supply chain resilience.

The subsequent part of this paper is presented as follows: a review of literature, the research design methodology, results and discussion of findings, and the conclusions of the study.

2. Literature Review

2.1 Supply chain Design

According to Melnyk Narasimhan & Decampos (2014) supply chain design is known to maximise the supply chain management (SCM) benefits. It has been noted that supply chain design contexts and scopes were still new. Furthermore, many efforts have not been made to design an entire supply chain (Nel & Badenhorst-Weiss, 2010). Therefore, it is necessary to design for resilience at the supply chain level (Sabouhi, Pishvae & Jabalameli, 2018). Ghomi-Avili, Jalali Naini, Tavakkoli-Moghaddam & Jabbarzadeh (2017) supported the need for supply chain design as its objective is to reduce production, transportation, location, and purchasing costs. Badenhorst-Weiss & Nel (2011) investigated the conceptual framework needed to analyse supply chain designs and echoed that it is a complex,

demanding, and challenging process. Niemann (2018) buttressed this point by stating that supply chain design is an important technique in building supply chain resilience.

2.1.1 Dimensions of Supply Chain Design

Melynk *et al.* (2014) suggested that supply chain design is seen as a process outcome and defined by dimensions such as technology advancement, economic influence, transport network, and environmental changes. This article will further discuss the supply chain design dimensions below:

Technological Advancement

Consumers' quality of life is improved by Technology (Pantano & Timmermans, 2014). As consumers adopt new patterns of behaviour in the demand for products and services, technology advancement in retail means that many people are connected through diverse means across the globe. The influence of technology on the supply chain creates a high turnaround clock speed (MacCarthy *et al.*, 2016) and shares valuable information with all supply chain partners (Hassan & Nasereddin, 2018). It also empowers retailers to advance service delivery to customers, increase sales, advance management operations and reduce costs (Grewal, 2017). The growing competitiveness of the African retail landscape embraces fresh and untapped business ventures with more agile responses to consumers faster and in a cost-effective with widespread on an operational level (Kalidas, Magwetsu & Rajagopaul, 2020). In making efforts to offer and deliver a consistent and seamless service experience to customers, retailers ensure that exploring opportunities for technology change becomes imperative in decision making. Technology improves communication between what can be offered by the retailers and what is desired by the consumers (Wesson, 2018) from the underlying effects of Covid-19 disruptions. In the context of this study, COVID-19 has shaken the boundaries of retail and highlighted a whole lot of things that technology can do in such disruption occurrences. In managing these crises, retail businesses continue their operations due to the dependence on technology despite the restrictions in place such as movement of the people and social distancing. Hence, the focus for retailers should be on providing relevant values for consumers using functional and integrative supply chain technology (Suriyantphupha & Bourlakis, 2019) a suitable business model evolution (Climent & Haftor, 2021), likelihood for retailers to optimise their in-store experience offering (Briedis, Kronschnabi, Rodriguez & Ungerma, 2020). The greater benefit to the retailers in adopting technology has the potential to overhaul the distribution structure of retail through augmenting delivery frequencies and the possibility of profiling customers based on patterns of demand can be achieved (Vallandingham, Yu, Sharma, Strandhagen & Strandhagen, 2018). There has been a rapid shift to using digital technology for various retail business transactions especially for interacting with loyal customers. This creates value for the consumers through a physical experience as demands for products and services can still be fulfilled. However, COVID-19 has further brought to light that the understanding of barriers to accessibility of technology (OECD, 2020), and the presence of the digital divide continue to worsen inequalities in South Africa as a nation. Though some retailers had struggled due to the coronavirus impact, others have taken the technology-adopted opportunity due to the sudden increase in demand for products.

Economic Influence of supply chain design on resilience

For the economic influence of supply chain design on resilience, the International Monetary Fund (IMF) 2020 estimated that the sub-Saharan African economy will shrink by 3 percent even though the oil-producing countries suffered a bad plunge in crude prices. Likewise, business confidence is at its lowest, with many investors pulling out of businesses in different countries (IDC report, 2020). With rising unemployment rates and low household disposable incomes, businesses such as retail are constrained to increasingly provide services with limited revenue in circulation. The current pandemic in the world has shaken the African continent such that there was reduced demand for African exports, especially in countries that trade significantly with the global value chains (Gondwe, 2020). Other issues exist that draw the continent backward in terms of growth opportunities and resilience structures such as load-shedding, policy rate hikes, and weakening of currencies that affect the retail businesses. Economic shift heavily impacts the retail industry (United Nations Conference on Trade and Development (UNCTAD), 2020) as it creates a ripple effect on the cost of goods, increases

consumer spending, and even increases the unemployment rate as many employees may be laid off from their work.

Due to COVID-19, retailers are affected by issues such as low consumer demand for products and transportation (Bishi, Grossman & Startz, 2021). However, if the COVID-19 impact moves the world into a deep recession, Africa's Gross Domestic Product (GDP) will drop -by 1.4% and will further drop its total exports by -16.7% with the ensuing revenue losses of up to -5.2% (Gondwe, 2020).

Transport Network

Transportation, water supply, electricity, and communications systems are amongst the basic commodities needed to support daily living. These amenities have become prone to disruptions due to their complexity, and transport systems are amongst the most affected structure when a such disaster occurs (Zhou, Wang & Yang, 2018), which can be man-made or natural. Earthquakes and hurricanes are noted to cause disruptions to transport systems such as Hurricane Sandy in 2012, cyclone Idai and Kenneth in Zimbabwe and other African countries (European Commission, 2019) and these can increase inefficiencies and pollution (Ganin, Kitsak, Marchese, Keisler, Seager & Linkov, 2017). A transport network always needs to be functional, as it is the only means to provide access to any disruption-affected areas to aid emergency response and recovery activities (Zhuo *et al.*, 2018). From an economic perspective, a transport network ensures the continual delivery of products to end consumers and adds to the GDP growth of any economy. From the welfare perspective, a transport network allows access through varied routes to a place of interest such as evacuations and distribution of relief materials to the most indigent in society. When it comes to the relationship between the transport network and resilience, it is the ability to be operable and maintain functionality despite disruptions. Transport networks may also bring about flexibility to a supply chain as multiple modes of transportation such as rail, road, and sea can be combined to get the product to its destination. With a limited transport network that conveys goods to its different destinations in Africa, it will be difficult for retailers to coordinate activities. In the context of South Africa, it means that if the retail business needs to readjust and reroute its transport network to be able to safely deliver goods to stores for consumers despite disruptions, then that plan should be upheld. However, from the COVID-19 perspective, a report from the World Bank Group forecasted the transport sector has completely been toppled by COVID-19 (World Bank Group, 2020). Coronavirus has disrupted African markets and entrepreneurs have come to the reality to invest in local businesses as a matter of priority (Russon, 2020).

Environmental Changes

The growing pressure on businesses is on the greening of products and using renewable materials, and insight that promotes sustainability. The world is going through climate change, and this extends to the retail business environment hence, as the environment changes, so do the design of a supply chain, to build resilience. From a wider perspective and due to the complexity and changes in its environment, the disruptions faced by the retail industry are overwhelming. Ranging from natural disasters such as flooding and drought situations and man-made disasters such as shrinkage allowing the industry to struggle. Retailers can be a driver of environmentally sustainable consumption for consumers as goods are procured from their stores. As the retail environment is exposed to shocks, disruptions, and uncertainties, businesses are required to reduce their carbon footprint through reusing, reducing, and recycling materials such as plastics, which are being discouraged from using, since it is a non-degradable materials. Retail businesses need to understand their environment in terms of the presence of threats and opportunities, then provide insights to building resilience against unforeseen events. In other words, sustainability can be an essential factor in influencing resilience (Ahern, 2012; Pablo, Metzeri, Katharina, Roberto, Franz, Mariana, Debora & Andrea, 2016) as both concepts are attributes or criteria for a decision-making process (Ardebili & Padoano, 2020). The advent of coronavirus in the retail supply chain created lots of rippling effects from food production, movement of the finished products to points of destination, and the impact of environmental change on the supply chain (Alam and Khatun, 2021).). However, in the context of COVID-19, sustainability is the key to survivability in the retail business industry. Maintaining the availability of products through the global supply chain despite the lockdown restrictions in South Africa is essential to life sustenance.

2.2 Resilience

A retail economy is assumed to be formed on the backbone of its supply chain and transport networks. A true supply chain resilience is not just concerned about mitigation and avoidance but about growth and competitive advantage (Harrington, 2014) and the ability to manage risks and to manage damages better than its competitors (Briano, Caballini, Giribone & Revetria, 2010). With the dramatic increase in supply chain disruption impact, firms are beginning to be concerned about supply chain resilience due to emerging system risks that disrupt supply chains geographically and widely (Wright, 2013). However, resilience creation and maintenance are procedures and not a once-off incident (Petit, Croxton & Fiskel, 2013; Scholten, Sharkey & Fynes, 2014). It can consequently be argued that supply chain resilience is undeniably a good phenomenon that every supply chain should aim to achieve since literature has proven its viability in achieving sustained competitive advantage. The integration and coherence amongst supply chain partners prompt the need to be continually resilient, especially in the retail industry which is characterised by its complexity. Hence, resilience is a desirable trait to possess especially in dealing with disruptions.

2.2.1 Supply Chain Resilience

Christopher and Peck (2004) provided a concise description of supply chain resilience during a research study carried out at Cranfield University. Resilience is seen as a system's ability to return to its original state and move to a novel and more desirable state after being disrupted. Resilience is more than the recovery ability (Barroso, Machado and Machado, 2011); it is also the ability to be better placed than competitors in the management of risks. To handle uncertain risks effectively, a resilient supply chain should be built. Supply chain resilience (SCRES) is described as a situation when one encounters an unexpected disruption, the system of the supply chain is restored to a better stable state through the micro constant development of enterprises' self-organising ability. Also, 62 percent of organisations cited that it is a priority to increase supply chain resilience post-COVID-19 (Supply chain digital, 2020). Although, this outbreak is not the industry's first crisis, however, the impact breaks many global supply chains (Araz, Choi, Olson and Salman, 2020; Ivanov, 2020). When it comes to resilience in supply chains, recent research focuses on supplier diversity, visibility, and transparency; this would allow a switch of supply sources, especially in cases where a crisis affects a region (Schmidt, 2020; Alicke Azcue and Barriball Open, 2020). The next section discusses the research methods employed in the study.

3. Research Methodology

This study used a cross-sectional survey research design and a quantitative research approach (Creswell & Hirose, 2019) to investigate the Retail Supply Chain Design for Resilience in South Africa during the COVID-19 Pandemic period. The cross-sectional survey design suited the objective as it examines the supply chain design resilience of the retail in South Africa during the COVID-19 period. The sample was drawn from the five retail giant retail stores. The data were quantitatively gathered with the use of a questionnaire emailed to some identified retail store managers, owners, and supervisors, in line with the lockdown restrictions in South Africa. The sampling technique adopted in this survey included non-probability sampling, preferably purposive sampling, and snowballing techniques. Purposive sampling is a non-probability sampling method (Saunders & Townsend, 2018) that aided in selecting respondents. The justification for using this sampling method is because the respondents are in strategic positions in the retail business and have the valid information sought and are experienced on the job. The respondents were identified electronically through emails and other social media platforms. Additionally, snowball sampling was employed in this study as the population of employees that work from their homes is unknown, and is geographically spread out (Jalca, Lopez, Sotelo, & Raymundo, 2019). The online survey link to complete the questionnaire was provided to respondents with the encouragement to forward the survey link to their managerial colleagues who were on a work shift at the time of the investigation. After 6 weeks, a follow-up and gentle reminders were sent to respondents to complete the electronic survey, a total of 300 responses were retrieved online. The questionnaire was categorised into four structured sections: Section A included the distinctive demographic, personal, and company profile with other general information. Sections B, C, and D included a series of statements on the phenomenon of study. The responses were constructed on

a five-point Likert scale ranging from strongly agree to strongly disagree. Respondents specified the extent of agreement or disagreement. Figure 5 signified “strongly agree” and 1 symbolised “strongly disagree”. The scale items were adapted from Christopher and Peck (2004). The questionnaire was designed using a Google form to improve access to the respondents using the various online platforms such as smartphones, tablets, and other personal computers or devices. The online survey tool was chosen to improve accessibility to as many respondents as possible in the selected African countries during lockdown restrictions. No disclosed identity of the respondents was collected, and the survey began with an informed consent form that emphasises voluntary participation. Also, respondents were informed that their participation would be anonymous and confidential.

4. Data Analysis

The data were analysed using both descriptive and inferential statistical tools. Descriptively, the data were summarised for easy description using descriptive statistics (mean scores) via Statistical Package for Social Sciences (SPSS) version 26.

Table 1: Sample Table

Gender	Male	46	Total: 300
	Female	254	
Work Years	Over 15 Yrs.	75	Total: 300
	5 – 10 Yrs.	80	
	1 – 5 Yrs.	145	
Position	Supervisors	138	Total: 300
	Store Owners	94	
	Managers	68	

Source: Own compilation

The sample characteristics showed that 300 respondents were employed in the retail business, with 254 females and 46 males enlisted. Some of the respondents have been in the industry for over 15 years (75 employees), 5 -10 years (80 employees) and most employees (145) have been in the industry for (1 – 5) years. The number of respondents that were supervisors is 138 in total, 94 were store owners and 68 were managers in the retail business.

Table 2: Descriptive Statistics on Supply Chain Design Dimensions and Supply Chain Resilience

Test Items	Mean	Standard Deviation	Minimum	Maximum
Transport Network	4.75	0.443	2	5
Technology Advancement	4.42	0.682	2	5
Environmental Changes	4.24	0.746	2	5
Economic Influence	4.20	0.753	2	5
Supply Chain Resilience	4.47	0.681	1	5

Source: Compiled by Researcher from SPSS Analysed Results

Descriptive statistics revealed that the technology advancement scored the mean (M)=4.42 and standard deviation (StD) of 0.682, economic influence had M= 4.20 and StD of 0.753, transport network had a score of M = 4.75 with StD of 0.443, and environmental changes had a mean score of M = 4.24 and StD of 0.746, and the independent variable for this study, supply chain resilience scored an M= 4.47 and StD of 0.681. The descriptive statistics signified the role and strength of transport network M = 4.75, technology advancement M = 4.42, and environmental changes M = 4.24 to supply chain resilience. However, economic influence contributed more to supply chain resilience with a standard deviation of 0.746.

Table 3: Reliability and validity Test

Reliability Statistics	
Cronbach's Alpha	N of Items
.663	5

Source: SPSS Analysed Result

The reliability test was based on testing whether the questions from a 5-point Likert scale are reliable. Cronbach Alpha was used to test the reliability of the instrument indicating how closely related a set of items are as a group. According to Hair *et al.* (2016), a reliability score level of 0.7 to 0.8 is good. The data analysis Cronbach Alpha score was 0.663 which indicates that the instrument of measurement is good. Also, the instrument was validated as all measured constructs were populated accordingly.

Table 4: Pearson Correlation Coefficient Between Supply Chain Resilience and Supply Chain Design Dimensions

Supply chain Design variables		Supply Chain Resilience
Technology Advancement	Pearson Correlation Sig (2-tailed)	0.269 0.000
Economic Influence	Pearson Correlation Sig (2-tailed)	0.157 0.006
Environmental Changes	Pearson Correlation Sig (2-tailed)	0.273 0.000
Transport Network	Pearson Correlation Sig (2-tailed)	0.232 0.000

Source: SPSS Analysed Result

It is clear on the Pearson correlation that none of the independent variables can ignite any multicollinearity amongst variables. It is inferred that all independent variables such as technology advancement, economic influence, transport network, and environmental changes are not influencing the power of predictability.

Table 5: Statistics Analysis on ANOVA, Coefficients, Diagnostics, and Residuals on Supply Chain Design and Supply Chain Resilience Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson							
1	.387	.150	.138	.632	1.533							
a. Predictors: (Constant), Transport Network, Technology Advancement, Environmental Changes, Economic Influence												
b. Dependent Variable: Supply Chain Resilience												
ANOVA												
Model	Sum of Squares	df	Mean Square	F	Sig.							
1. Regression	20.789	4	5.197	12.993	.000							
2. Residual	117.998	295	.400									
Total	138.787	299										
a. Predictors: (Constant), Transport Network, Technology Advancement, Environmental Changes, Economic Influence												
b. Dependent Variable: Supply Chain Resilience												
Coefficients												
Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error				Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	.157	.455		3.458	.001	.678	2.469					
Technology	.3	.058	.207	3.579	.000	.093	.320	.269	.204	.192	.863	1.158
Advancement.	.207	.066	-.103	-	.158	-.222	.036	.157	-.082	-.076	.547	1.830
Economic Influence	-.093	.067	.232	1.414	.002	.080	.344	.273	.181	.170	.535	1.869
Environmental Changes	.212	.085	.203	3.160	.000	.145	.478	.232	.210	.198	.954	1.049
Trans. Network	.312			3.687								

Source: SPSS Analysed Result

Multivariate analysis such as multiple regression assisted in determining the actual variables that are included in the model and have contributed to predicting the dependent variables, the researcher looked at the Beta values. For this analysis, the variables that are significant include (technology advancement = 0.000, environmental changes = 0.002 and transport network = 0.000). The variable with the largest beta coefficient relates to environmental changes with a value of 0.232. This shows that the variable (environmental changes) makes the strongest individual influence in amplifying the variance in the dependent variable (supply chain resilience). In examining the extent of multicollinearity, the Durbin-Watson value is used, which should lie between 1.5 and 2.5 (Pallant, 2011:156). For this analysis, the value of Durbin-Watson is 1.533. There are no issues of multicollinearity that are evident in this analysis, all the tolerance values must not be below 0.10, and all the values in this study are greater than 0.10 (Pallant, 2011:156; Daoud, 2017). For the VIF values, it must not be above 0.10, and the results indicate that all the VIF values were above 0.10. the R Square tells the extent or degree of variance in the dependent variable (Supply Chain Resilience) that is explained by the model (comprising the independent variables). The value is 0.150 expressed in percentage, meaning that the model explains 15 percent of the variance in supply chain resilience. For this study, the R square value is 0.150, $F = 12.993$, with 4 degrees of freedom at a significance level, $p < 0.05$ using the standard multiple regression method. In retailing, the macro environment is consistently exerting pressures on the industry which is already complex. The variables of technology advancement, transport network, and environmental changes have been deduced to influence supply chain resilience hence caution is suggested to the retailers especially during decision making to consider these variables to build resilience. However, in Africa, poverty, unemployment, and economic situations have plunged its citizens to a point of desperation whereby retailers face the brunt of events such as the pandemic. For instance, in South Africa, riots and protests have gripped the nation to a standstill despite the ravaging effects of the coronavirus pandemic and lockdown restrictions. The citizens have taken to the street by rampaging, looting, and burning malls, stores, and small-medium businesses and left the nation on its knees to recover operations. The extent of damage to the retail industries is incredible and may take years to salvage the wasted opportunities. Humans are insatiable hence government needs to rise to the occasion to provide accessibility to businesses to ensure operational continuity.

5. Results and Discussion

It is interesting to note that environmental changes were evidenced to contribute more to supply chain resilience. As with the current pandemic in the global world, known to be contagious and exist in the environment, businesses need to guard their shores by building a resilient supply chain to ensure continuity. Furthermore, technology advancement and transport networks are also contributory to the variance in supply chain resilience and should not be neglected. Its importance to retail especially in these precarious times is undeniable. For instance, the alarming rate of COVID-19 cases in Africa did not deter the unrest in South Africa where the transport network was distorted, creating ripple costs for businesses as drivers of vehicles reroute their movement to safety. Moreover, the Pearson correlation result indicated no collinearity amongst the variables of interest.

The multivariate analysis deduced that the R square value was 15%. The Beta values indicated that environmental changes contributed mostly to the variance in the dependent variable (Supply Chain Resilience). In designing a supply chain, the customer demands, the effect of the environment on the chain, and the internal objectives of the stakeholders must be considered. The business model of the FMCG industry needs to always consider the expected demands of its consumers and efficiently deliver on its promises and in this case, products must always be made available. Enabling efficient product delivery is dependent on advancement in technology that permits seamless operation, harmonisation of relationships with the combined efforts of the supply chain partners. In addition, a range of information on retail and customers can be integrated into a database hub and can be assessed by every retailer to enhance the visibility of sales data, product movements, and status in the supply chain. Better planning on where a business should be located enhances its viability to trade and gain profit, as customers prefer convenience and shopping experience. It then follows that the nature of a retail supply chain demands a unified body of partners that uniquely decides on investing in resources such as technology, to be able to compete in the marketplace. For instance, Africa needs to connect its

infrastructural network so that there can be transferable means to move products across the continent. Resources such as transport can utilise a faster turnaround time in the delivery of products and goods to their destination. This belief can be enhanced when supply chains are interlinked, with an implication that the partners try as much as possible to share accurate information from the downstream to the upstream. Accurate information sharing assists in reducing distorted forecasts or wrong customer demand information to the suppliers. COVID-19 has dealt a blow on the African continent such that the disparity between the rich and poor deepens. Although the implementation of the African Continental Free Trade Area (AfCFTA) can reinforce the supply chains of the different regions, reduce the susceptibility to external disruptions, advance the transition to digital platforms and build resilience against future unforeseen disasters, the long-term effects of the pandemic could increase prices of food as inflation rises. This is because food supply chains are threatened by the virus as most consumers start panic buying and hoarding products in anticipation of shortages, hence triggering price increases and these activities may induce social unrest. According to OECD (2020), Africa is faced with a dual challenge in their public health and economic crisis as the risks increase with the healthcare system, livelihoods, and slow growth in the regions in years to come. It is anticipated that the current pandemic can wipe out years of developmental gains. The report further highlighted that government bond yields spiraled in Egypt, Nigeria, and South Africa hence it is now difficult for the African countries to borrow. COVID-19 exposed the living well-being of the citizens in terms of economic deprivation and social lives. Retail businesses need to be resilient in these tough times to ensure food security for the population.

6. Conclusion

This study statistically found that transport networks, technology advancement, economic influence, and environmental change are the most influential factors that impact supply chain resilience variance. It is therefore important that even though the target of businesses is to survive, supply chain partners must ensure that these variables are strategically placed for the retail supply chain. Tough times call for tougher strategies to ensure continuity. Retail businesses need to advance their technology and diversify their relationship with other African countries to enhance their industrial performance. The agenda of AfCFTA can assist to coordinate the regional cohesiveness of supply chains to ensure food supply and security for consumers. There is huge potential for growth in Africa, but its transport network demands a regional change to its links to increase its distribution and related services. An efficient transport infrastructure could help in disabling barriers and exploit complementarities across countries, resulting in regional integration. Transport and logistics infrastructure is of importance to Africa as it has the largest number of landlocked countries globally. South Africa has a heightened need to strategically invest more in the transport network to improve resilience by drawing from international experiences.

Furthermore, the need to invest and integrate technology cannot be overstated as the 4th industrial revolution is already happening. Technology can improve the visibility, sharing of information, collaboration, and many other efforts towards pursuing resiliency in businesses. Retailers need to understand that technology has reshaped consumer expectations, which are now unique and higher than before. Retailers must acquire and align processes that can streamline customer demands to the business objectives. Proper actions taken before disruption times, help to reduce cost and mobilise resources associated. In this age of technology proliferation, the power of trade is now shifting towards the consumers, therefore, retailers need to be transparent in their business and try as much as possible to integrate consumer needs when making decisions and constantly engage with them through consumer promotional mix, best wishes messages and develop other incentives or reward for their loyal customers. Supply chain retail partners should constantly reevaluate their supply chain in terms of risk propensities, increase mitigating/contingency plans and effectively change and adapt better operational moves to build resilience. Today's consumers are increasingly becoming aware of the environmental changes in their lives and demand environmentally friendly products, packaging, and even shopping bags to minimise waste. Retailers are forced to reduce their carbon footprint by being environmentally responsible in the way goods are sourced, produced, packaged, and sold. This can be achieved through optimised operations enacted holistically in an integrated retail supply chain network.

Furthermore, as pandemics such as COVID-19 may reoccur, retail businesses may need to diversify their channel of sales, from traditional brick and mortar to online retail experience. There must also be a closer look at their liquidity profile to assess the change in working capital dynamics. These strategies can be a form of pandemic planning considerations to provide continuity for the business and have reliable supply chains. These can be supply chains that can be moved closer to the point of need so that future productions cannot be halted. Therefore, retailers that adapt to change will be better positioned to sustain and win over challenges and become stronger in achieving more customer-oriented businesses. This can be achieved through understanding the stakeholder's operation to optimise business communication channels and reduce the time of response towards fulfilling customers' demands.

7. Practical and managerial Implications

The practical implication of this study informs that the findings may be incorporated into retail supply chain strategies, to improve the awareness of disruptions in the retail business environment and build resilience to hedge against it, especially in the post-COVID-19 era. Hence, adapting resilience to retail business operations possibly suggest an optimal readiness in Africa to improve productivity and relationship amongst stakeholders. There is also a great need for retail supply chain managers to support redesigning of their business model for effective resilience in South Africa. This paper highlights the strong influence of the coronavirus crisis on the supply chain design of FMCGs in South Africa and how retailers can navigate their business operations, build resilience and ensure continuity. Retailers are at the frontline and always confronted by COVID-19 impact as the world consumers depend on their products (necessities of life) for livelihood and survival. However, the persistence of the pandemic coupled with lockdown restrictions, have caused most people to avoid visiting stores as was traditionally the case. Thereby, affecting sales and profitability of the retailers, as certain products are not sold due to non-viewing. The practical implication is that the COVID-19 pandemic has reduced the product flow from all the members of the supply chain down to the consumers, because of the restrictions on movement from one place to another. This implies that the negative impact of COVID-19 has created ripple effects in society. To be better, retailers and managers can support and augment recovery from the current pandemic by harnessing innovative capabilities for visibility and enabling a more resilient feat in the future. The reality is that the pandemic does not seem to abate soon, hence retailers and managers must create a new work world such as online retailing, and reinvent and chart optimal strategic moves for their future business operations.

8. Limitations and Future Studies

A cross-sectional survey was conducted in this study; however, it is suggested that future studies deal with longitudinal techniques and well in a different context, aside from retail. The obvious evidence of limitation is that the study is on selected retail stores in South Africa. This limitation links back to the study objectives in terms of South African retail performance towards supply chain resilience within the context of COVID-19. This heeds a call for leaders to advocate for better data structures and governance for the benefit of business growth and readiness for unanticipated events. The preparation will reinforce retail businesses to mobilise mechanisms and respond to a crisis such as COVID-19. As African economies evolve amid the pandemic, so has the retail business survival mode activated to handle food insecurity and shock from the crisis. The perspective of stakeholders in terms of their experience during the COVID-19 pandemic in the retail industry such as suppliers and wholesalers can be investigated in the future, as this study dealt directly with only retailers. The acceleration for open information sharing must be supported for future use in retail, as timely data access that can inform innovations and interventions are employed.

This study would have included the consumers as participants to examine their perspective on COVID-19 and their resilience ability towards survival during tough times. This would have given a clearer picture of the entire actors in the retail supply chain, fashioned out the means or resources, and cushioned the effect of the pandemic for the business continuity. The findings of this study have presented an informed empirical analysis that the managers of the fast-moving consumer goods

industry can adopt in readiness or response to disruptions such as COVID-19. This can be done by building a tighter relationship with trade partners and as well rethink their business models by restructuring their supply chains. Managers can do this by sourcing supply chain specialists that are experienced in remodeling and redesigning a business to effect the necessary change. This action needs access to the right technologies that can comply with different standards such as end-to-end visibility of the supply chain. Therefore, a decision on the tradeoff between the benefits to be achieved by the retail business and the cost of restructuring the supply chain should be made. The reason why managers should do these, concerns the competitive edge over other competitors, that the retail business will achieve. Managers can also implement disruption management plans to handle and minimise the effect on the retail business. The authors suggest that retailers and managers leverage technology to enhance competitiveness and market position. In addition, understanding the market dynamics and conditions amid any crisis will assist the retailers to prioritise business opportunities, carving their niche offering, and investing in resources appropriately.

This study adds to the value of the body of knowledge as it is one of those studies that investigates supply chain design for retail resilience in South Africa. The study also contributes globally to the scarce literature on supply chain design for resilience in the FMCG industry. Therefore, it is recommended that retailers need continually improve their technology for business growth. The current technology age indicates that the trading power is fluctuating towards the consumers, hence transparency in business, as well as their integration, will be important for decision making in the retailing industry. The retail supply chain partners know that the business environment is ever-changing and therefore must quickly adopt optimal objectives that can differentiate and position their business well in the market.

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Organisational Adaptability In South African Retail Firms During The Covid-19 Pandemic

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Keywords

Internal strategy,
Organisational
adaptability,
Organisational culture,
E-commerce

Abstract

The business environment today presents only one certainty: the future is unknown and will offer up unknown disruptions. The COVID-19 pandemic presented the business world with a unique set of complex and uncertain disruptions. Organisational adaptability was critical to ensure survival and success: resilience, agility and flexibility all contribute to an ability to adapt.

The purpose of this research was to identify the critical success factors of South African retail firms during the COVID-19 pandemic, that demonstrated significant adaptive capacity to allow for effective transitions to e-commerce. The focus was on three organisational dimensions: strategy, culture, and structure, and how they could be leveraged to build adaptive capacity.

This exploratory qualitative research collected data through in-depth interviews with a purposive sample of four consultants and five retailers. A thematic analysis was conducted to extract the themes giving the lived experiences of participants.

It was found that a lack of strategic direction and myopic responses led to missed opportunities; further, a culture that was not open to change and tended to be risk averse following the shock of the COVID-19 pandemic compounded the slow response to invest in e-commerce. The organisational structural shift to separate e-commerce teams and flatter structures has been after the fact and is deemed to have facilitated the initial roll-out of e-commerce.

This research developed an adaptability framework that provides consultants with practical recommendations to determine the level of adaptive capacity required, at different uncertainty and volatility levels.

1. Introduction

The business environment today presents only one certainty - the future is unknown and will offer up unknown disruption. The COVID-19 pandemic presented the business world with a unique set of complex and uncertain disruptions. The harsh lockdown measures implemented by the South African government restricted many industries, forcing them to adapt or suffer the consequences. COVID-19 was a 'black swan' event (an unforeseen event of large magnitude) that caught most people and organisations by surprise. Schwab and Malleret (2020) however highlight that characterising the pandemic as a 'black swan' event is a mistake, and they refer it to as a 'white swan' (an event of catastrophic proportions predicted with certainty to occur at some time) despite many of the consequences of COVID-19 being unexpected. Whatever the case, with supply chain disruptions, reduced consumer spending and strict lockdowns, there emerged clear winners in the competitive South African retail arena, who were able to adapt and therefore exploit available opportunities.

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Today the business environment is far more unstable, for example the VUCA acronym (volatility, uncertainty, complexity, ambiguity) was popularised in business culture around 2007 (Saleh & Watson, 2017), and the rate of change in this environment is increasing (Papulova & Gazova as cited in Minciu et al., 2020). In times of high uncertainty, organisations that can be both resilient and agile have a higher probability of above average returns (McCann et al., 2009). Reeves and Deimler (2011) suggest that the traditional strategy approach, which is based around stable patterns, is no longer effective and that adaptability is the new competitive advantage. Pfeffer (2007) describes conventional strategy practices as too rigid and predictable and promotes a more fluid, iterative and dynamic process. The emergence of adaptability as an overarching theme is further validated by recent research from McKinsey that points to adaptability as the critical success factor in times of rapid change (Brassey et al., 2021).

With only 2% of total sales in South Africa being conducted online (Daniel, 2020) before the pandemic, putting the South African e-commerce market far behind “the global average of 16%” (Daniel, 2020, para. 6), those who were poised to tap into this space have reaped the rewards. E-commerce has been a response to the pandemic and a marker of adaptability in organisations. As highlighted by Braithwaite (2020), retailers that have offered groceries and essential goods online were able to capitalise on strict lockdowns. Understanding the internal attributes of these organisations, in relation to strategy, culture and structure will enable future organisations to future proof their businesses and effectively pivot out of catastrophic world events and business cycles.

1.1. Problem Statement

As stated by Zucker and Rowel (2021), “while we hope to avoid future pandemics, one thing is clear – we cannot avoid ever increasing complexity.” (para. 1). They argue that the past two years (2020-2021) present us with valuable learnings for continued effective leadership of successful businesses defined by their ability to “...continually learn, evolve and navigate...”. The authors put forward the idea that as complexity increases, businesses are increasingly required to get comfortable with the unknown. Previously a lack of knowledge was perceived to present too much risk; however, now a business’ success is defined by its ability to keep learning rather than know it all. Finding the perfect solution is no longer held as the ideal, instead those able to absorb mistakes and make progress in a constantly changing and moving environment are better positioned to succeed (Garvin et al., 2008). This research sought to determine responses to the COVID-19 pandemic in order to extract learning, in terms of the endogenous or internal factors inherent to retailers that have resulted in survival and/or success during this time. These endogenous factors fall under three key areas: strategy, culture, and structure, as they were found to be of critical importance in building dynamic capabilities and adaptive capacity (Håkonsson et al., 2013). This research used the transition or expansion into e-commerce by retailers, during the pandemic in South Africa, to study adaptability.

1.2. Research Objectives

Consequently, the aim of this study was to determine the endogenous factors, inherent to retail firms, that determine their ability to adapt to e-commerce in times of high uncertainty and volatility. The research objectives were:

- to identify the characteristics of the internal strategy employed by retailers for successful transition to e-commerce,
- to ascertain the dimensions of organisational culture for successful transition to e-commerce by retail firms,
- to determine the organisational structural characteristics of retail firms who have successfully transitioned to e-commerce.

2. Literature Review

The literature review begins by examining the nuances of the South African retail sector and how it was impacted by COVID -19, followed by a definition of adaptability as it is used in this research, as there is some disagreement amongst scholars on its broad definition. Thereafter each of the three key

dimensions described in the introduction are expanded on: strategy, culture, structure and their role in enabling organisations to adapt.

2.1 The Impact of COVID-19 on the South African retail sector

Retailers in South Africa received limited government assistance due to COVID-19 (Robertson et al., 2022), which meant that small to medium enterprises (SMEs) in retail were particularly vulnerable to the strict and lengthy lockdowns, some of the harshest in the world (Greyling et al., 2021), as well as reduced consumer spending. Retailers that profited from the unique opportunity presented in South Africa, both in terms of a nascent e-commerce market and limited physical mobility due to lockdowns, were able to internally leverage digital capabilities to adapt to the new market environment (Abe & Mugobo, 2021; Robertson et al., 2022), with online revenue of food and grocery retailers increasing by more than 50% in 2020 (Dakora & Rambe, 2022).

2.2 Adaptability in a business context

Agility as defined by Holbeche (2015) as the “the search for speed and adaptability” (p. 48) is an important component of adaptability. Nauck et al. (2021) assert that the majority of companies operate based on the assumption that “smooth business conditions” (p. 2) will remain on-going. A new approach is required though, not only spurred on by the COVID-19 pandemic shock, but the access to information at our finger tips through the digital revolution demands agile and faster decision making (Nauck et al., 2021). In summary “decision-makers have more information and more analysis than ever before, but less time to decide” (Schwab & Malleret, 2020, p. 17), and thus need to adapt to making quicker and more effective decisions.

The literature is conflicted on whether adaptability is the result of creating a resilient organisation (Folke et al., 2010; Lee et al., 2013) or whether adaptive organisations are by nature resilient and therefore more competitive (Brassey et al., 2021). As outlined by Brassey et al. (2021), adaptability is set apart from terms such as resilience, agility, flexibility and innovation as it speaks to bouncing forward into an improved state as opposed to simply bouncing back or surviving. This sentiment is further backed by Eshima and Anderson (2017), where the concept of ‘adaptive capability’ is defined as capturing the value of combining existing resources with new ones developed through adaption – effectively how proficient a firm is in “altering its understanding of market expectations” (Eshima & Anderson, 2017, p. 771). This flexibility and willingness to adapt enables firms to align and realign constantly (Holbeche, 2015).

This research views the ability to adapt as the key determiner of success, this ability is defined by three key dimensions: the internal strategy, culture and structure.

2.3 Adaptability as an internal strategy

The theory that closely relates to adaptability in organisations is the dynamic capabilities view (DCV) from the land mark article by Teece et al. (1997), who theorise on why certain firms experience growth in their competitive advantage whilst others experience this advantage eroding over time. They postulate that the competitive advantage of firms stems from internal processes and the effective manipulation of resources. These endogenous factors enable the firm to rapidly adapt and capitalise on new opportunities or offer flexibility when consumer and market forces shift. Teece (2014) explicitly divides capabilities into ordinary or dynamic: *ordinary* capabilities are what is termed ‘best-practice’ and are efficiency orientated, such as the performance of an inventory tracking system, and *dynamic* capabilities are the management of internal resources by top management in order to steer the organisation in the market. More succinctly put “... ordinary capabilities are about doing things right, dynamic capabilities are about doing the right things...” (Teece, 2016, p. 210).

The DCV emerged from the resource based view (RBV), by adding a dynamic component to strategic thinking in which constant innovation and shaping is necessary to stay competitive, versus the RBV model which assumes static market forces (Madhani, 2010; Teece, 2007; Wang & Ahmed, 2007).

It is clear that when the business environment is uncertain and volatile, organisations need to shift their resources into areas that will allow for greater dynamic capability (DC). As per the DC framework (Teece et al., 1997) depicted in Figure 1 below, these are areas that will enhance sensing, seizing, and transforming activities. From a retailer perspective, sensing could be to set up a dedicated team that conducts market research in order to establish shifts in consumer behaviour or new market opportunities/threats, ideally before its competition thus giving it a ‘first mover’ advantage. Seizing would be the capability to act on information provided through sensing, i.e., how quickly can a retailer go to market with a new product or setup a new sales channel. Transforming would be the organisation’s propensity for continuous improvement, challenging the path of least resistance and seeing change as a positive enabler towards operational excellence.

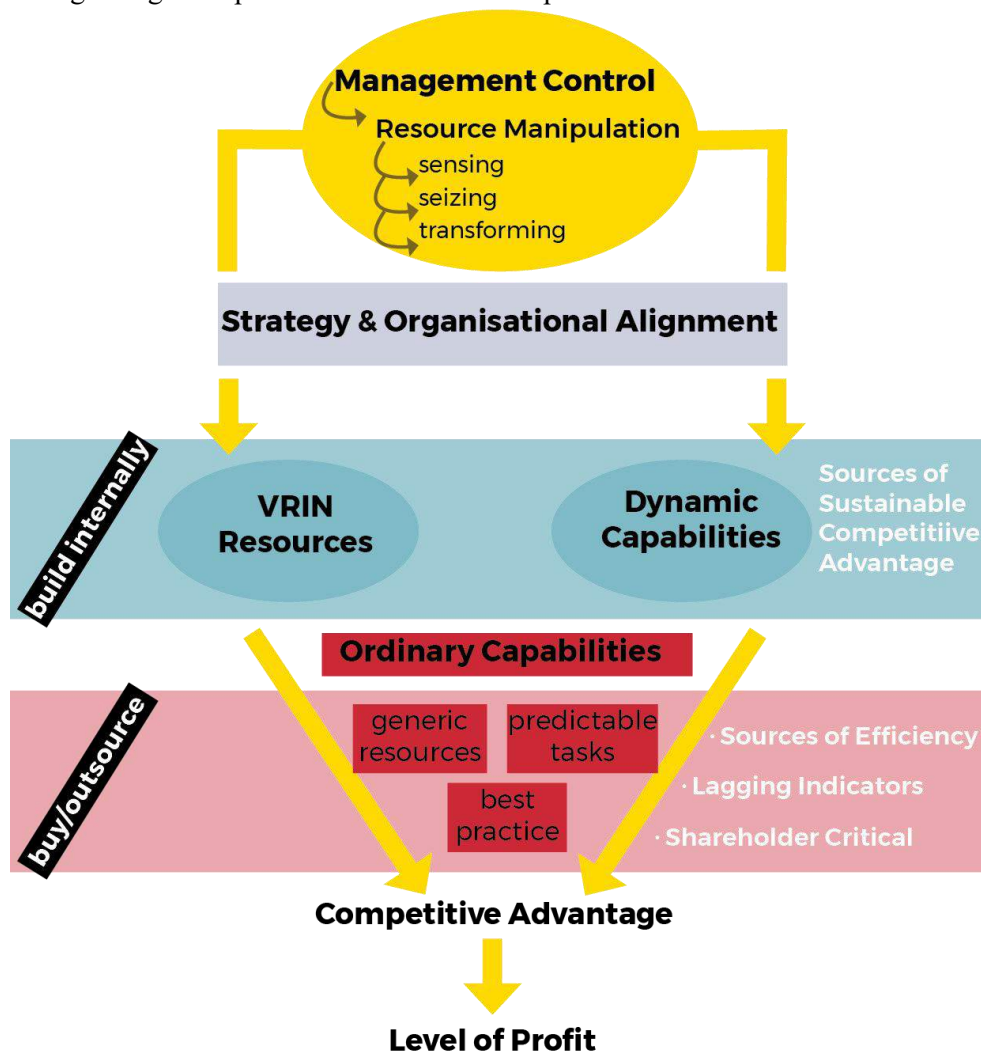


Figure 1: The Dynamic Capability (DC) framework (adapted from: Teece, 2014).

How well an organisation can shift its resources internally, coupled with a good strategy as depicted in Figure 1 (Teece, 2014), thus equates to how adaptable an organisation fundamentally is. In order to ensure the success of such a DCV strategy, two other key areas in the organisation, namely culture and structure, need to be ready to receive it.

2.4 Organisational culture

Culture is a ‘fuzzy’ concept, difficult to pinpoint, “Culture is not primarily ‘inside’ people’s heads, but somewhere ‘between’ the heads of a group of people where symbols and meanings are publicly expressed” (Alvesson, 2002, p. 4). Nonetheless its importance today in seeking competitive advantage is perhaps more important than it has been in the past. As key resources become more accessible to competitors, organisations need to focus internally to cherish and build VRIN (Valuable, Rare,

Imperfectly Imitable, and Non-substitutable) capabilities, thus culture can be a source of sustained competitive advantage (Barlett & Ghoshal, 2002; Pfeffer, 1994).

Schein's model of organisational culture conceptualised in the 80s (Schein, 2004), is perhaps one of the most influential to date and still has wide usage (Birkinshaw & Mark, 2015; Burkus, 2014; Chatman et al., 2014). According to Schein, organisational culture can be interpreted by analysing three different elements: *artefacts*, this is physical matter that can be observed such as employees wearing informal attire or free lunches at the canteen; *espoused beliefs and values*, this is stated and explicit, either through dialogue or in writing, it is the intent and norms of the organisation and its members; *underlying assumptions*, is the implicit behaviour of members, the taken for granted aspects, the underlying assumptions (Schein, 2004). It must be noted that any cultural interpretation using this model is subjective and dependant on individual perceptions (Burkus, 2014).

In order to be adaptive as an organisation a focus on learning, and an environment or culture that fosters learning, is required. As discussed by Garvin et al. (2008) an organisation where the employees "continually create, transfer and acquire knowledge" (p. 1) supports that organisation to adapt to unforeseen changes in the market faster than others, leaving them on top. In essence adaptability is not only your ability to react to volatility, but it is a culture that is fostered, or rather a 'fitness' that is part of the culture to ensure agility in response to anything thrown their way. The warning to businesses is to "avoid the loss of learning, a precursor to rigidity" (Holbeche, 2015, p. 51), which in turn reduces your dynamic capability as an organisation.

Chatman et al. (2014) further defined several cultural norms that promote adaptability in organisations, these being: flexibility, propensity for risk taking, experimentation, future orientated, cannibalising existing products, fast moving, not overly focused on making the numbers, proactive, quick decision making. Similarly, Costanza et al. (2016) developed an adaptive culture scale, based on the existing literature, and rated ninety-five organisations founded prior to 1940, to ascertain the effect of adaptive culture on long-term survival. The culture scale consisted of nine characteristics under two dimensions *action-orientation* and *values about change*: external focus, anticipation, risk-taking, open to change, confidence, development of capabilities, collaborative action planning, executing change, sustaining change. Costanza et al.'s (2016) findings showed that organisations with high *action* scores as well as both high *action* and *values* scores were more resilient.

Coupled with a culture of continuous learning, needs to be a culture for healthy debate and dissent (Bello et al., 2020; Garvin et al., 2008; Sibony et al., 2017). Dissent allows employees at multiple levels in the organisation to challenge the status quo, streamline processes and be innovative. For example Google, Amazon and McKinsey all stipulate in their employee code of conduct that dissent is a necessary obligation (Sibony et al., 2017). These challenges will ultimately lead to continuous change, unlike the traditional view that assumes change as a step wise process (Cummings et al., 2016). An organisation that embraces continuous change, by aligning the internal rate of change with the external environment through building and destroying routines, will deliver better long-term performance as found in the study by Håkansson et al. (2013).

2.5 Organisational structure

Top down or hierarchical structures have been a classic example of organisational architecture in the past, but there has been a growing trend towards flatter structures that allow increased flexibility, innovation and quicker decision making (Kettley, 1995; Vaara et al., 2021). Currently due to COVID-19 other organisational models, such as remote work and hybrid work, are being developed to cope with the hard lockdowns (De Smet et al., 2021).

In the seminal article by Mintzberg (1980), a framework on organisational structure was put forward to understand the internal and outward dynamics of an organisation (Lunenburg, 2012). Mintzberg (1980) suggested that structure can be broken down into four key components: (1) the basic elements of the organisation – the operating core, strategic apex, middle line, technostructure, and support staff; (2) the methods of coordination; (3) the dynamics of processes and systems as factors of

decentralisation; and (4) inherent factors such as age and size. As described by Lunenburg (2012), to analyse a structure it must be understood which element of the organisation plays a major role, this could be middle management or front line workers, the method of coordination such as standardised processes or direct supervision, and lastly an understanding of the involvement of subordinates in the decision making process. Additionally, Mintzberg (1980) posited five pertinent management structures: simple structure, machine bureaucracy, professional bureaucracy, divisional form, and adhocracy. Adhocracy is the most popular new-age structure and stands out as an enabler for creativity and innovation, and is well positioned for an environment that is both complex and dynamic (Mintzberg, 1980), which is seen to be the most conducive for adaptability.

Håkonsson et al. (2013) found that it is not the level of inertia in an organisation that impedes flexibility, it is the rate of inertia that it is the critical factor. Therefore, if an organisation has high levels of inertia or routines, but an equally high rate of routine turnover (change in the routines), it will be more adaptable than organisations with lower levels and rates of inertia. This ‘dynamic fit routine’ as described by Håkonsson et al. (2013) allows for organisations to move away from static states and reactive responses to a dynamic state that is in-line with the external environment. Further, Håkonsson et al. (2013) assert that well designed organisational structures, that have the correct rules in place, enable adaptability.

As dynamic capabilities are essential to organisational adaptability, organisational designs that enhance this capacity will be at an advantage in uncertain and volatile environments. Felin and Powell (2016) conducted a case study of Valve Corporation to determine its design attributes, an organisation that pushes boundaries and has successfully adapted in changing environments,. Valve’s distinguished feature is that employees are free to choose which projects to work on. The organisation is thus polyarchal and relies on a unique set of social proofs to ensure that the correct decisions are made. Sensing is achieved by having a highly decentralised structure with the majority of employees on the periphery testing new ideas; seizing is done though Valve’s social proofs in that three or more members need to agree on a new idea for the organisation to take it on; and transforming happens seamlessly in an organic and fluid way through widespread communication with a transparent strategy, which is constantly being shaped. The proof of their success is in having had higher unaudited revenue per employee than either Facebook or Google (Felin & Powell, 2016).

A further development in designing organisational structures, which is still gaining momentum in the practitioner’s realm, is the role of behavioural psychology in strategic decision making. Sibony et al. (2017) define three organisational processes: large investment decisions, resource allocation, and blue sky processes, which relate to risk taking, agility, and innovation respectively. Their aim is to point out the corporate biases that exist when making these strategic decisions, and offer seven organisational design levers to mitigate these biases: *formality, layering, information, participation, incentives, debate, closure*. These levers can aid in the development of organisational structures that facilitate organisational adaptability to disruptions.

3. Research Methodology

The design of this research follows a similar study on dynamic capabilities by Teece (2014), in which defending the lack of empirical evidence for his theory, he argues that a positivist approach is unfavourable due to the lack of constants and states “management theory is not physics” (p. 335) and suggests that a qualitative study based on “introspection and observation” (p. 335) is more suitable. Thus by adopting an interpretivist research philosophy, this study subjectively questioned adaptability, which required the authors to remain critical and prepared to scrutinise and revise assumptions as data was collected through interviews (Saunders et al., 2009).

The exploratory, qualitative and inductive design of this study was positioned to help the researchers learn from the lived experiences of others (Bryman et al., 2014). The interviews were conducted over a period of 4 weeks (latter 2021) and provided a snapshot of the lived experiences of business practitioners and consultants. This cross-sectional study situates itself within the period of the

COVID-19 pandemic (early 2020 to end of 2021), specifically analysing the business strategies and tactics deployed in the uncertain and volatile business environment at the time.

As suggested by Saunders et al. (2019), when trying to understand the why of a phenomenon versus the what, such as why certain retailers have pulled ahead of the competition during the pandemic, conducting research inductively is more appropriate as the research undertaken aims to generate meaning from the observations and findings obtained. An inductive approach is also recommended when using small samples of qualitative data (Bryman et al., 2014), which was obtained through interviews in this research. Saunders et al. (2009) also suggest that this less structured and inductive approach is suitable to a qualitative study. A qualitative research strategy is flexible and exploratory. Bryman et al. (2014) state, "Qualitative data analysis involves trying to identify inherent patterns rather than imposing preconceived ideas on the data" (p. 43).

The population for this qualitative study included middle to senior managers in the retail sector who were involved in the transition or the build-up of e-commerce in their firms during the pandemic, as well as business consultants with relevant experience through their engagements with retail firms. A non-probability snowball (judgemental) sampling technique was used that led to data saturation after five business practitioners and four business consultants had been interviewed.

Data was collected through semi-structured interviews on MS Teams, averaging 30 minutes. Interviewees were always asked to have their cameras on during interviewing, as this has the potential for visual cues to provide deeper meaning to answers (Holt, 2010). Two interview guides were used for the different samples with open-ended questions, where the responses of the interviewee guided the conversation allowing information to emerge (Saunders et al., 2009). The interviews were recorded and transcribed, the data was coded, the categories were tabulated in Excel, and then high-level themes were identified.

The primary purpose of coding was to condense data, it was therefore by no means exhaustive (Elliott, 2018). Three levels of data funnelling were used in this research and labelled as codes for the primary level, categories for the secondary level, and themes for the highest order level. When new categories emerged that were not part of the literature review, further desk research followed which allowed for further tuning of the interview questions, however due to time constraints a balance had to be struck. Data saturation was achieved when significant themes failed to be extracted from new data. The aim of this study was to have 'depth' in the information provided and not 'breadth'.

The participants' identities and data were kept anonymous and confidential, what is shared was established in discussions prior to commencing the data collection with the interviewees. The nature of the data collected has the potential to compromise the competitive advantage of some firms. Therefore, it was important for the authors to limit the potential risk of a data breach whilst sharing insights that led to the success or failure of some retailers.

Guba and Lincoln (1994) proposed trustworthiness as a primary criterion for assessing a qualitative study, together with authenticity. Trustworthiness consists of four aspects (credibility, transferability, dependability, and confirmability) which align to validity and reliability. Credibility and Transferability align to internal and external validity respectively. Dependability aligns to reliability and Confirmability examines the objectivity of the investigator. Credibility was enhanced by sharing the research report with participants to ensure their perceptions were accurately accounted for, and triangulating data. Transferability in qualitative research is limited due to the small sample sizes, but the rich data gathered will allow future researchers to develop specific frameworks. Dependability has been carried out through close supervision, which to some effect can be seen as auditing of the research methods. Confirmability was achieved by following the protocols on interviewing.

The limitations of the research included the small, non-random and non-representative sample size, implying that the results cannot be generalised to the population, as well as potential bias in the sample selection.

4. Results and Discussion

The five retailers represented different industries and had differing perceptions of the degree of adaptability, from low to high. The discussion below is presented according to themes extracted from the research. These themes were developed through content analysis of the interviews with business practitioners and consultants and then triangulated with desk research to validate their importance and provide useful and practical recommendations.

The results are presented in response to the three Research Objectives:

4.1 Characteristics of the internal strategy employed

The characteristics of the internal strategy employed for successful transition to e-commerce as perceived by the participants were classified into five emergent themes: sensing abilities, sense of urgency to action, internal capabilities, internally performance driven, and clear strategic intent, discussed as follows:

Sensing abilities:

The overall feeling from consultants is that not all retailers were able to sense or anticipate the shift towards e-commerce, with some clearly struggling to accept the new realities of doing business. With practitioners the results are mixed, retailers that have been perceived to have shifted effectively have anticipated market forces through sensing, whereas the laggards in the e-commerce space have not highlighted the need for this capability. Some of the quotes that highlight this theme are given in Table 1:

Table 1. Key quotes regarding sensing capabilities

Interviewee code	Quote
C1	"If people are in a situation where they are able to use online and they don't feel comfortable going out they will do so"
C2	"Retailer 1 and retailer 2 didn't have it as a strategy, but even two years into the pandemic, they still don't seem to have a sense of urgency about delivering it"
P2	"But I think lockdown proved that people will use e-commerce if it's easy"
P3	"When the lockdowns kind of first presented itself at the end of Feb to beginning of March 2020 my business partner and I realized that there was going to be a massive online movement, retail stores were going to close for some period of time."
P4	"I don't think they took it seriously enough up front. There were a lot of naysayers upfront, doubts saying that e-commerce is general merchandise thing. It's never going to take on in grocery. It's 1% or whatever, but everyone's been able to prove that wrong."
P5	"But I think what has happened over the last 18 months has become increasingly important in our minds to focus on e-commerce. It was a growing realisation as to how important omnichannel is for our future."

To the detriment of some organisations, when sensing is not seen as an important day to day task, a tendency to normalise risks or falsely believe that nothing will change, may set in (Schoemaker et al., 2018). Almost every participant has mentioned sensing, either demonstrating their inability to sense in transitioning to e-commerce, or its importance.

Sense of urgency to action

Consultants identified that many of the laggard retailers have been very slow to act and have not seized new opportunities. The results from retailers are mixed, with two vastly different approaches between organisations perceived as 'fast movers' seizing online opportunities as soon as they emerged, and laggards. Some of the quotes that highlight this theme are given in Table 2:

Table 2. Key quotes regarding sense of urgency to action

Interviewee code	Quote
C2	<p>“You know too many companies are sitting and waiting for things to happen. Probably even hoping that this pandemic will go”</p> <p>“I'm seeing companies scrambling around quite a bit especially the ones that are being left behind”</p> <p>“We've been in the pandemic now for almost two years and still some companies are trying to trade out of it as if there was no pandemic or change”</p>
P1	<p>“We geared significantly and so we had a call centre of over 1000 agents in the call centre which gave 65% of the business, phoning customers placing orders. So we went on a shopping spree and we bought. I think we managed to get 600 laptops in sort of seven days”</p>
P3	<p>“Prior to lockdown we decided to leverage the systems and the operations and the website that we had and the customer base that we had to sell them more relevant product which ended up being fresh groceries”</p>
P4	<p>“The leadership team sat up once we saw what was happening with some of our bigger competitors and they tried to implement a basic Shopify platform.”</p> <p>“We lost 2% market share to our competitors”</p>

Once an important threat or opportunity is identified, the organisation needs to seize the moment and act (Felin & Powell, 2016; Schoemaker et al., 2018). In the adaptive scale developed by Costanza et al. (2016), in which two key dimensions were established, values and action, the authors found evidence that organisations with high action scores were significantly more likely to survive long-term when compared to organisations with low action scores. From the interviews, the quotes show that a number of retailers have low perceived adaptability.

Internal capabilities

There were mixed responses in terms of building internal capabilities, “because of the understanding of the business”, versus bringing in expertise from outside, as highlighted in Table 3:

Table 3. Key quotes regarding internal capabilities

Interviewee code	Quote
C3	<p>“Those clients who have an internal development skill end up with a much better product than those clients who rely on external.”</p> <p>“let's build a team that can solve that problem and then use that skill set within the business”</p>
C4	<p>“But it is about strategic partnerships. It is no longer about building and owning it all ourselves, we can get access and route to market using partnerships to be agile and adaptable. So I think strategic partnerships is critical”</p> <p>“From a consulting perspective often we say what is the strategic thing of the ‘secret sauce’ that you want to keep in house and what is a commoditised service that you can go an outsource”</p>
P2	<p>“Bought company 1 and company 2 to strengthen the areas we knew we were weak and then our competitors are doing the same kind of stuff. So it's a bit of a land grab at the moment”</p>
P4	<p>“We will be building capability internally though, so as I'm developing I'm also bringing in new people to help.”</p> <p>“Going forward is just getting the right data science, data engineering skills and capabilities into your company”</p>

At the onset of the pandemic most retailers did not have reliable e-commerce platforms to accommodate the influx of customers, and there were a few complains about websites crashing and the wrong goods being delivered. Teece (2014) suggests that in order to establish sustainable competitive advantage (SCA), dynamic capabilities should be built, whereas ordinary capabilities can be bought, which was shared by some respondents. However, outsourcing is not a band aid solution and needs to be coupled with an intent to learn and grow as well as a ‘secret sauce’ as described by C4 (Pezeshkan et al., 2016).

Internally performance driven

Being overly focused on numbers and internally is an endemic problem with retailers, as well as the external shareholder pressure to hit performance targets based on lagging data. This internal focus versus understanding the challenges of the market are highlighted in Table 4:

Table 4. Key quotes regarding the internal focus

Interviewee code	Quote
C2	“Retailers are a very good example of this. They’re managed by the quarterly results. The disadvantage of that is that the guys are penalized if they're focused too far into the future, and not delivering on those quarterly increases in returns”
P1	“I think where the business lacked was that they were very internal - I'd say internal locus of control where they were very focused internally about if something goes wrong it is something that they've done, not something that's happened externally” “But when it came to what is happening externally so more macro-environment versus a microenvironment, we're very weak.”
P3	“I would say that it was so such an intense, detail-oriented learning process that we at times lost focus on the big picture and the environment that we were actually operating in and the changing needs of that environment”
P5	“Yeah, I think traditionally retailers love the numbers”

Chatman (2014) describe “making your numbers” (p. 794) as a factor that negatively affects adaptability, and similarly Kotrba et al. (2012, as cited in Costanza et al., 2016) suggest that organisations who are too internally focused struggle to adapt. This internal focus can thus attract resources away from sensing capabilities, leading to potential blind spots (Schoemaker et al., 2018; Teece, 2014). This was highlighted by a number of respondents where retailers are too internally focused.

Clear strategic intent

The importance of strategic intent or lack thereof was highlighted by the participants in Table 5:

Table 5. Key quotes regarding strategic intent

Interviewee code	Quote
C2	“The second issue for me and this will sound biased, but I don't think they have a strategy for this. I think that they have been very slow to adapt”
P1	“Definitely the strategic direction is given from a board level and executive level”
P4	“Until we have that clear strategy crafted and signed off you don't know what you're running at, it's always a lot harder, right? So that's my role, to say this is the vision.” “We've had to do a massive strategy overhaul in terms of our digital transformation, so we've been trying to build that narrative internally.”

Teece (2014) stresses the importance of sound strategy in order for dynamic capabilities to be effective. Dynamic capabilities encourage organisational flexibility, however with this flexibility comes a need for direction, which ultimately comes from the strategic objectives of the organisation (Zheng et al., 2010). The requirement for a strong strategic intent was recognised by the participants.

4.2 Dimensions of organisational culture

The respondents were asked questions specific to organisational culture, structured to gain insight into a particular dimension of culture: learning, creativity, mistakes, atmosphere. The data analysis revealed three themes: resistance to change, entrepreneurship culture based on lean start up philosophies, and learning culture coupled with a desire for continuous improvement, discussed as follows:

Resistance to change

Resistance to change at a senior management level is prevalent in retailers, with barriers to change often due to legacy systems and hierarchies that have stifled the voices of employees. This is illustrated in Table 6:

Table 6. Key quotes regarding resistance to change

Interviewee code	Quote
C1	“So where hierarchies are enforced where people are not encouraged to present ideas, that is where they’ve struggled the most.”
C2	“I think one of our difficulties in South Africa, and it does link to this capability issue and adaptability, is that we do tend to hire CEOs that we know are from our industry or out of our industry, but very few of them are really game changers and this adaptability to the future requires us to think differently about it.”
C4	“That is a little bit down to do with legacy and the SAPS systems that have been in place and not being able to be nimble and adapt”
P4	“So I would say this, the culture is a whole lot more conservative. They haven't had a culture of innovation, they are only now implementing it ASAP it's been very much about legacy systems with some data sitting in very disparate places”

Carter and Varney (2018) advocate for placing more importance on the human aspects of change over organisational intricacies. Standardised methods, which become routines in an organisation can be sources of inertia that prevent dynamic responses (Feldman & Pentland, 2003). This resistance to change was identified as a challenge to most retailers.

Entrepreneurship culture based on lean start up philosophies

While some retailers have been dynamic and proactive where others have remained fairly static, the ‘can do’ spirit highlights the entrepreneurial nature of some retailers, as illustrated in Table 7:

Table 7. Key quotes regarding entrepreneurship culture

Interviewee code	Quote
C2	“There's a culture in some of these companies of getting the job done. Let's do it. We know it's a risk. We know we won't be perfect, but let's do it.”
C3	“Their biggest problem again was pre pandemic they weren't flexible”
P1	“It's more a personality trait a sort of entrepreneurial personality. A trait related to owning the situation versus a person being an employee of the business”
P4	“Yeah, there like I say there hasn't been a massive culture of experimentation, so people are very conservative, and I think that's almost got them stuck because no one really wanted to do something in case it failed. You have to be prepared to fail and fail quickly. Learn quickly.”

Anderson et al. (2015, as cited in Eshima & Anderson, 2017) define entrepreneurial orientation as a proactive attitude and a “managerial willingness to pursue opportunities with uncertain outcomes” (p. 770). The lean start-up method encourages organisations to continually test their products through real world experimentation while concurrently building and adjusting (Ladd, 2016). There is a strong

correlation with perceived adaptability and the level of experimentation that took place at the beginning of the pandemic, as evidenced from the responses.

Learning culture coupled with a desire for continuous improvement

Two different cultures were identified, the first culture blocks ideas for improvement which proved to be a major disadvantage in adapting to the pandemic, the second culture encourages new ideas and was described as adaptable. The learning culture and continuous improvement comments are given in Table 8:

Table 8. Key quotes regarding the presence of a learning culture

Interviewee code	Quote
C3	<p>“The culture of the company was one-way, people were told ‘do your job!’ ‘don't bring up any questions!’ ‘don't bring up any improvements!’ When the pandemic hit, they basically went to a complete standstill and had to pay salaries for people who couldn't do any work, ended up having to downsize.”</p> <p>“So the companies that go around the table and says everyone said what they needed to say? Has anyone got any questions left? Please ask. Those are the companies that manage to adapt and survive. The companies that refused to allow ideas beforehand had a lot of dead weight when the pandemic hit”</p>
P3	<p>“We delivered marketing at times that wasn't on the right track and in a lot of ways wasted a lot of digital marketing. It wasn't efficiently deployed as it should have been, but it was a very fast and intense learning curve.”</p>
P4	<p>“We've already lost a lot of people to our competitors and trying to bring young inquisitive minds into your businesses is super critical, so again, that's a big culture shift and a way of working shift.”</p> <p>“Our CEO has realised that bringing some outside in is good in many ways because a lot of our staff are old, a lot of them have only ever worked with us and being the only company that you've worked at you're not exposed to what's happening outside. You get into a very slippery slope where learning isn't driven.”</p>

Empirical research has begun to show that a desire to continuously improve is linked to long-term survival in organisations (Wang & Ahmed, 2007); further, Costanza et al. (2016) include ‘open to change’ and development of capabilities’ as critical factors that enable adaptability. The results of this research reinforced the requirement for a learning culture as necessary for successful adaptation.

4.3 Characteristics of organisational structure

This objective investigated how streamlined process were within the firm, the level of autonomy in e-commerce teams, and how information flowed and decisions were made. This lead to four emergent themes: cross department synergies specifically between business and IT, the importance of fast and sound decision-making, flatter structure smaller agile teams in e-commerce, and information feedback loops from customers and the bottom of the firm, which are discussed as follows:

Cross department synergies, specifically between business units and IT

When business and IT function independently, it is difficult to implement e-commerce effectively. Either a closer relationship between the business units is required, or e-commerce could be a separate team, as highlighted in Table 9:

Table 9. Key quotes regarding cross-departmental synergies

Interviewee code	Quote
C3	“Specifically with regards to e-commerce organisational structures where business and IT are separate have struggled a little bit more.”
C4	“For example one company I worked with has brought in external expertise to head up e-commerce as opposed to it being a function of the IT department. They have set up a separate e-commerce route to market and channel, so it is no longer just an IT job.”
P2	“It's very much a closer relationship between products and business versus business throwing a requirement to IT. That's kind of a shift we're seeing, and that's a bit more how the digital companies are being run”
P4	“I think they didn't necessarily have people with the right skill set or experience that understood the space and they simply looked at it as an IT project, whereas we all know it's a business project, its business strategy and it's very much holistic in terms of the ecosystem that you need to build”
P5	“I took it over in March and we had two businesses running separately and we have now pulled them together and much closer to our core operations and our core stores.” “I think the main reason is because, it means that you are not fighting internal battles”

Destroying silos and streamlining processes is recommended when trying to innovate and build an agile organisation (Rigby et al., 2016; Lee et al., 2013). Collaboration between business units is also one of the nine key factors in the adaptive scale by Costanza et al. (2016) which was used to determine the likelihood of the organisation’s long-term success. As stated by these participants, e-commerce is a business and IT project, the two functions need to be intertwined as retailers build go to market e-commerce strategies.

The importance of fast and sound decision-making

Decision making has been a critical factor for retailers and flatter structures are advocated to speed up this process, as highlighted in the comments in Table 10:

Table 10. Key quotes regarding the importance of fast decision making

Interviewee code	Quote
C2	“The one I'd like to add is obviously a culture linked to the structure of having speed of delivery of key decisions as both a culture and a structure.” “So I would add innovation and collapsing the structure to allow communication, speed of decision-making”
C3	“So organisational structure has a lot to do with decision making and the speed of that decision does come through the number of levels that it has to pass within the organisational structure”
P3	“I made decisions on the spot right there because it was a small and nimble operation”
P5	“Going back to March 2020 because when you are speaking about organizational adaptability it was the most extraordinary time to be in retail; the whole world shutdown, South Africa shut down and there was panic buying.”

The speed of the decision needs to be considered with the potential risk inherent in making the wrong decision. Sibony et al. (2017) offer seven organisational levers to match the level of complexity with the impact of the decision and suggest delayering, less formal process, with less rules when small decisions need to be made fast.

Flatter structure, smaller agile teams in e-commerce

There has been a growing trend across the industry towards a flatter structure, with smaller more autonomous teams as can be seen from the interview quotes in Table 11:

Table 11. Key quotes regarding flatter organisational structure

Interviewee code	Quote
C2	“And they've structured it [e-commerce] as a separate business. It might be internal, but it's a separate business unit. There are separate staff working there” “I think we're seeing a matrix structure rather than hierarchical.”
C3	“I think definitely the more levels there are in an organisation, the slower they are to adapt.”
P2	“So it's changing up, e commerce is definitely flattening it out. So I think we still look like a traditional corporate, but within E-commerce we are flattening out to more product structures with defined ownership but more of a digital company kind of setup.”
P3	“From an organizational structure perspective, we kind of used a very similar model to what we had in our parent company, which is relatively flat. It's not particularly hierarchical”
P4	“I think the biggest barrier is for sure the operating model - there's just so many different levels.”

Multiple information paths and blurry decision channels are two major hindrances of matrix structures (Bartlett & Ghoshal, 2002). In general flatter structures allow for short decision paths and enable quick decision making (Kettley, 1995), with autonomous teams as a symbol of decentralisation, which appears to be the path chosen by retailers.

Information feedback loops from customers and employees

There was a proliferation of communication channels during the pandemic, e.g. WhatsApp groups, that were very effective means of communication from the bottom of the organisation to the top, as illustrated in Table 12:

Table 12. Key quotes regarding information feedback loops

Interviewee code	Quote
P1	“Very autonomously in being able to make decisions because we met weekly. In these weekly ops meetings we were feeding back on a weekly and day-to-day basis, would be definitely feeding from the bottom up” “On a daily basis I was given direction and feedback to the team and we measured everything”
P5	“WhatsApp groups have sprung up far more effectively than any of the corporate tools and teams. They are just so intuitive and natural or easy to set up that they have become a pretty important way to disseminate info quickly to large groups of people.” “Then over time these things grew because where there would have been a culture of calling people before it's just that it's much easier to WhatsApp or send a picture. I think it was very much a ground swell of bottom-up use of WhatsApp groups!”

Effective communication and access to reliable information has been described as fundamental to organisational adaptability (Bello et al., 2020; Carter & Varney, 2018; Costanza et al., 2016). In order to enable adaptability, communication needs to happen both ways (Carter & Varney, 2018) and Robinson and Schroeder (2014) discuss the merits of idea generation from the bottom, such as in the use of WhatsApp groups.

5. Conclusions

The aim of this study was to determine the endogenous factors, inherent to retail firms, that determine their ability to adapt to e-commerce in times of high uncertainty and volatility. The research focused on three key dimensions to address this aim which are strongly linked together. The way in which people process external information, interact with one another and make decisions based on emotion

is all influenced by the *culture* in the organisation. The processes and routines in an organisation are shaped by the organisational *structure*. Keeping the people and processes aligned to achieve specific objectives is the *strategy* deployed by the organisation. The conclusions to the research objectives are summarised below:

5.1 Objective 1: The characteristics of the internal strategy

Retailers that adapted to new market dynamics, imposed by the pandemic, were able to pre-empt the rise in demand of e-commerce goods, with some clearly benefiting from first mover advantages. This foresight was made possible due to strong sensing capabilities, which is one of three, core capabilities for long-term survival in dynamic environments, according to the dynamic capability view (DCV). The other two capabilities are seizing and transforming. Sensing activities pull resources away from ordinary capabilities such as managing stock or controlling margins and thus have a negative effect on efficiencies, which unfortunately are strong performance indicators for retailers. Retailers that were perceived to be more adaptable than average, made a strategic choice to balance external sensing with internal efficiencies, when compared to laggards in the industry that tended to have myopic attitudes coupled with assumptions that ‘normality’ would return.

The resulting inaction or ‘head in the sand’ approach, of less adaptable retailers, meant lost opportunities and likely loss of revenue as mentioned by an interviewee candidate that lost market share. Not being able to seize opportunities, another capability of the DCV, can be attributed to a lack of strategic direction, leaving the organisation in ‘no man’s land’.

Most retailers are now invested in e-commerce, with different strategies deployed concerning the acquisition of necessary skills in order to role out and scale e-commerce. According to Teece (2014), dynamic capabilities should be built in-house, whilst ordinary capabilities can be outsourced. The source of competitive advantage lies in dynamic capabilities or the ‘secret sauce’ as one of the consultants interviewed put it. Two of the four consultants as well as one of the retailers (P4), alluded to the advantages of building in-house, a strategic choice supported by the literature. How the retail e-commerce space unfolds now will depend on strategic partnerships formed and the inherent dynamic capabilities of retailers.

To summarise, based on the triangulation of desk research, interviews with consultants, and interviews with retailers, the strategic choices of successful retailers were: sensing capabilities to foresee the rise in demand of e-commerce goods at the onset of the pandemic; strategic intent and direction to seize opportunities identified through sensing; building of internal dynamic capabilities in the e-commerce space; and forming strategic partnerships.

5.2 Objective 2: The dimensions of organisational culture

One of the most important characteristics that adaptable retailers have shown to possess, is a culture that is open and embracing of change. Resistance to change is seen as an inhibitor to adaptability and was prolific amongst retailers with low perceived adaptability. This resistance was caused by legacy processes, hierarchical structures that did not give employees a voice, and executive boards that lacked diversity and did not understand the online space. The retailers that had high perceived adaptability, both showed an entrepreneurship culture and learnt through experimentation using a lean startup approach. This was combined with a strong desire to continuously improve and learn.

From Schein’s (2004) organisational culture model, the espoused beliefs and underlying assumptions are not explicitly stated by members of an organisation. This objective had the least number of themes extracted, possibly due to the difficulty by interviewers to narrate these experiences. In summary, organisations that had a culture that promoted innovation and were open to change were seen as the most adaptable.

5.3 Objective 3: The organisational structural characteristics

The retail industry has experienced a trend towards flatter structures with separate e-commerce teams. Retailers with a high perceived adaptability rating, had short communication paths that enabled quick

decisions. At the onset of the pandemic, business and IT operations were separate, which created internal friction and added unnecessary layers. The trend towards a separate e-commerce team has enabled business and IT considerations to be taken simultaneously when making decisions, has increased inter-team collaboration and streamlined the processes. The heads of these separate e-commerce teams are now sitting at very senior levels within the organisation, having direct links to the CEOs, which points to the urgency of not losing market share in this dynamic space. An urgency which as described before was not present.

The machine bureaucracy structure of traditional retailers (Mintzberg, 1980), with a large segment of staff towards the bottom of the pyramid has the potential to leverage off the vast amount of information and ideas held at the front-line level in order to generate continuous improvement. One of the retailers interviewed described how WhatsApp had become a preferred tool for communication across the organisation, whereby taking pictures and posting onto a group was perceived to be a faster and more effective way of communication. Retailers that move away from hierarchal structures and are open and encourage idea generation at the bottom with short and effective communications channels to the top, have strong adaptability potential as the literature review has shown.

6. Managerial Implications

The adaptability framework below has been developed to help consultants when engaging with clients on adaptability assignments, or retailers in improving their adaptability. This framework (Figure 2) shows two distinctive strategic paths that can be followed, that allows enough flexibility to tailor the approach to the organisation's operating environment and the external environment.

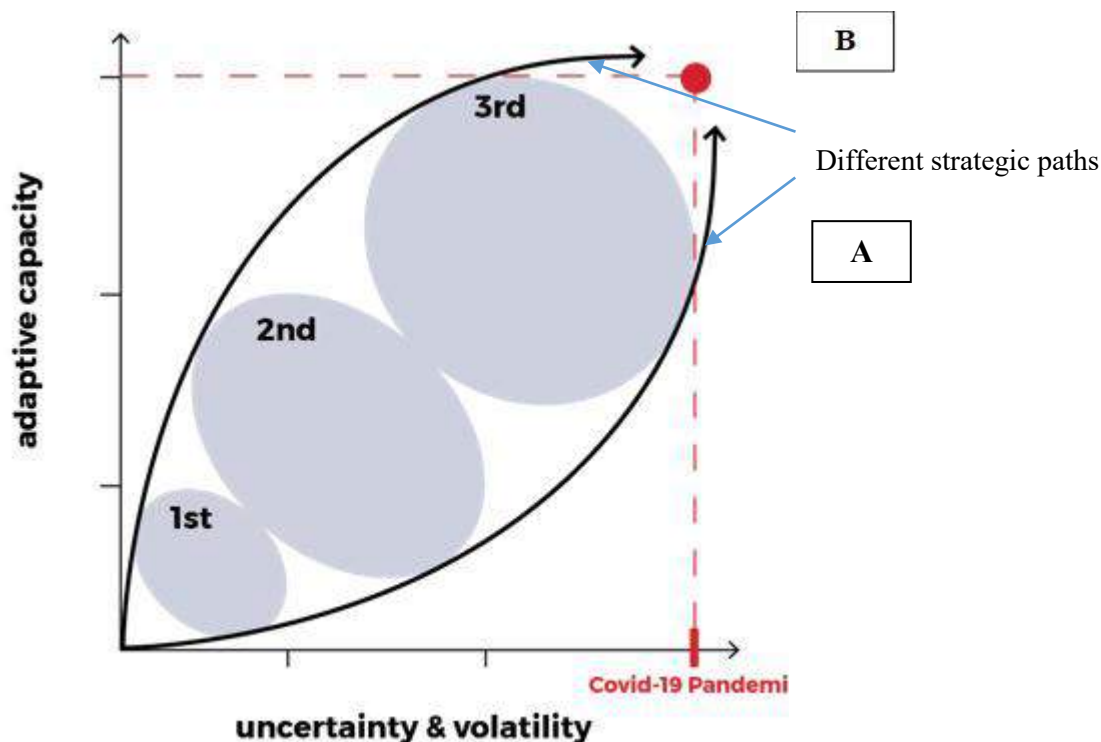


Figure 2: Adaptability framework for retailers (developed for this research)

The level of adaptability necessary is determined by what the operation or environment is, for example an accounting firm would face lower levels of uncertainty and volatility as opposed to a software engineering company. The accounting firm might therefore want to strategically keep its adaptive capacity low, in order not to waste resources unnecessarily, i.e. follow path A. In contrast the software company operating in an ever evolving and competitive industry might make the strategic decision to maximise its adaptive capacity, in order to benefit from possible first mover advantage when exploring new opportunities, path B. In Figure 2, it can be seen that the strategic paths are

tangent to circles 1, 2 and 3. These circles represent the gears that an organisation can choose to be in, so in the figure, 1st gear represent an environment with low uncertainty and volatility which requires low levels of adaptive capacity, again the two extremes are path 1 and path 2 that can be tailored to the organisation's strategy. Gear 3 represents the level of adaptive capacity recommended at very high levels of uncertainty. Each of the three gears have a unique set of recommendations required to achieve that state, these are:

Gear 1: Flat structure, implement short feedback loops of information from the front lines, deploy sensing capabilities.

Gear 2: Set up autonomous teams to seize new opportunities, increase levels of experimentation, increase sensing capabilities, increase learning activities.

Gear 3: Polyarchy structure, idea generation by single employees to prevent decision biases, maximum experimentation, streamline processes, clear and simple strategic objectives, encourage dissent in the organisation.

The analogy that both path A and path B lead to the same point on the graph is important because it highlights a conclusion of this research: in times of extreme uncertainty and volatility no operation is safeguarded, no matter how static its environment is, i.e. accounting firms will need to maximise their adaptive capacity to future-proof their businesses, however this is not the case when gear 2 is recommended following path B.

7. Recommendations for Future Research

This research study was exploratory, which provides several opportunities and directions for research. Researchers could do a quantitative study with a representative sample to verify the findings of this study.

The proposed steps and model proposed in the Recommendations (Figure 2) is a high-level summary and can be enhance by a more in-depth study and by drawing on existing literature on the individual steps.

This study focused on retailers developing e-commerce, and future potential topics for studies could be: 'the role of emotions and unpredictability in decision making for retailers', 'polyarchy organisational structure and their relevance to more traditional sectors such as retail', 'Strategic partnering, outsourcing capabilities or building inhouse capabilities as important decisions for retailers'.

In addition, the study could be replicated in other industries and other emerging markets to determine similarities and differences, e.g. due to cultural issues.

Finally, a longitudinal study after an adaptability intervention could provide insights into the effectiveness of the intervention, and the factors determining the success or otherwise.

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The Determinants of Bank Liquidity in South Africa: A COVID-19 Inclusive Perspective

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Keywords

COVID-19, Liquidity risk, South Africa, Banks.

Abstract

This study examines the factors determining liquidity in the South African banking industry, focusing on the COVID-19 pandemic. The study estimates liquidity risk for South Africa banks using the panel data regression method and secondary quarterly panel data spanning 2012: Q1 to 2021: Q4. The results of the study reveal that COVID-19 lockdowns did not significantly affect the liquidity of the South African banks. It shows that South African bank liquidity is determined by bank-internal factors such as bank size, capital adequacy, deposits and loan advances to foreign banks. Like the COVID-19 pandemic, economic factors such as business cycles and employment are not crucial in determining the banks' liquidity.

1. Introduction

An effective business strategy matches a company with its external and internal environment. It should enable a business to survive all forms of internal and external shocks and ensure continuity, growth and profitability (Tikhonov and Zelentsova, 2021). The business landscape is vested with different types of risks that can deter a business from achieving its goals; this makes risk management an essential component of business management (Venkat and Baird, 2016). This study is intended to examine factors that determine liquidity risk in the South African banking industry with a focus on COVID-19.

The rising threat of the COVID-19 pandemic in March 2020 resulted in a series of lockdowns inhibiting economic and financial activity across the globe. The banks were one of the most affected units in the scope of the general economic system as other entities rely on them for operational and financial support (Wu and Olson, 2020). The banks were exposed to extreme levels of instability as their operations and financial stability depend on the proper functioning and financial viability of other units in the economic system (Emenike, 2021). The business and economic activity interruptions during this period affected the banks' capital flows. The banks were forced to provide loan payments concessions to their personal and business clients. Some businesses collapsed while others minimised operations resulting in retrenchments and increased loan payment default rates on already extended loans (Dettling and Lambie-Hanson, 2021).

Liquidity is defined as the ability of an institution to meet its financial obligations and to finance its increase in assets without experiencing undesirable losses (Patora, 2013). Under extreme circumstances, an institutional liquidity crisis can lead to business failure. Hence banks are regulated to ensure that they comply with the prescribed requirements and standards. In South Africa, as in most countries, the central bank is mandated with authority to oversee the banking industry regulatory framework. In return, the national regulatory framework must conform to the standards and requirements of the Bank of International Settlements' operating Basel Accord through the Basel Committee on Banking Supervision (BCBS).

There is a limited amount of research analysing funding liquidity risk on banks in South Africa and there is no research that specifically looks at the effect of the COVID-19 pandemic on banking liquidity in a South African setting. Studies that have examined liquidity in South Africa include the study by Kumbirai and Webb (2010). The study used financial ratios analysis as its tool of analysis

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and used data from 2005 to 2009. The financial ratio analysis methodology has limitations as its results cannot provide cause and effect relationship information that would otherwise be provided by regression analysis used in the study at hand. The results based on 2005-2009 data that Kumbirai and Webb's (2010) study may not be appropriate because, after the global financial crisis, significant changes were made on the bank liquidity regulatory framework and risk management strategies that banks adopted. Esterhuysen, Vuuren and Styger (2012) also conducted a study intended to analyse the determinants of liquidity creation in the South African banking sector. Like Kumbirai and Webb (2010), the study was conducted using pre and during-financial crisis era data; hence does not reflect the evolution of the bank risk management strategies post-transformation and bears no reflection on the effect of the COVID-19 pandemic on the banks' liquidity.

Although there is evidence of research on determinants of liquidity done on South African banks, most of the studies were conducted during the global financial crisis period. The bank operation is continuously evolving, and the regulatory framework is also changing. The study at hand intends to analyse liquidity risk in South Africa in the era that will capture the transformation of the banks post the global financial crisis and in a period of the COVID-19 pandemic. This study aims to provide an econometric account of the determinants of bank liquidity risk in South Africa post the global financial crisis and an analysis of the effect of the COVID-19 pandemic. Consistent with such studies as Moore (2010), Vodova (2011), and Khoury (2015), this study further intends to use multiple measures of liquidity to address the noted lack of consensus on the appropriate measures of liquidity.

The outline of this paper is as follows: The subsequent section offers information about the South African banking industry and the COVID-19 trajectory. Section 3 provides the literature review, in Section 4 the data is presented, the variables are defined, and the econometric model used is specified. Empirical determinants of banks' liquidity are presented and discussed in Section 5 before the conclusion in section 6.

1.1 The South African Banking Sector and the COVID-19 Trajectory

The South African banking sector hosts 14 locally controlled banks, four foreign-controlled banks, three mutual banks, 28 foreign bank representatives and 13 branches of foreign banks (South African Reserve Bank, 2020). The sector is legislatively well regulated as it subscribes to the Bank of International Settlement (BIS) regulatory framework intended to ensure standards that guarantee the banking system's overall safety, soundness and stability across the globe (Jacobs, Styger and Van Vuuren, 2012). The relatively recent significant disruptions to the banking industry's stability in South Africa and globally were the global financial crisis, followed by the COVID-19 pandemic almost ten years later. In response to the COVID-19 pandemic, South Africa had its first lockdown in March 2020. Working closely with other national entities, the government designed a program ensuring that the lockdowns were applied and implemented in levels ranging from level one with minimal restrictions to the most stringent level five permitting only entities delivering essential services (Stiegler and Bouchard, 2020). The banks were declared as part of the entities providing essential services; however, they had to reduce their workforce operating in their physical structures to a bare minimum (South African Government, 2022).

2. The Determinants of Bank Funding Liquidity: An Empirical Overview

This study recognises the COVID-19 pandemic as one of the factors that could have affected the banks' liquidity in South Africa. The literature presented in Section 1.2 above has indicated that there are other influential factors. These factors include bank-specific factors that emanate from the internal environment of the banks, such as bank size, capital adequacy and bank deposit volumes. Other factors are macroeconomic, these include; market interest rate, economic cycle, inflation and employment (Ahamed, 2021; El Khoury, 2015; Kim, 2018; Patora, 2013). These factors are non-specific, they emanate from the banks' external environment. The COVID-19 pandemic is also classified as a non-bank-specific liquidity determining factor.

One of the studies that examined factors determining liquidity risk was conducted by Khoury (2015). Using Lebanese data from 2005 to 2013, dynamic, fixed and random effect panel regression models,

the study estimates liquidity risk using four equations with four different proxies for funding liquidity. The results of the study reveal a positive association between bank liquidity and bank size, the interbank market, the loan book size, inflation and financial crisis. The study, however, could not establish a significant relationship between bank liquidity and capital, economic growth and the level of unemployment in Lebanon.

Patora (2013) also conducted a study aimed at establishing the determinants of bank liquidity in Central Eastern European (CEE) countries using data from 2004 to 2012 based on a sample of 21 banks from five of the CEE countries. The study uses pooled ordinary least squares as a method of analysis. The results of the study indicate that the liquidity position of the banks in CEE countries is negatively affected by changes in capitalization and market share. The study further shows a positive relationship between bank liquidity and unemployment rate and bank profitability. Like Patora (2013), the study by Trenca, Petria, Mutu and Corovei (2012) also investigated the determinants of bank liquidity using quarterly data from 30 commercial banks operating in Central and Eastern Europe for a period covering 2001 quarter 1 to 2011 quarter 4. The result of the study indicates a negative relationship between lending rates and the banks' liquidity. Consistent with Patora (2013), the results also reveal that capitalization negatively affects bank liquidity.

Using the generalized least squares (GLS) method and data from 2006 to 2013, Gafrej and Abbas (2017) conducted a study investigating the effect of bank-specific factors and the macroeconomic factors on bank liquidity specific for Islamic and conventional banks. The results uncover that liquidity position is very persistent for the Islamic bank as past liquidity position has an influence on the preceding period liquidity position and further establishes a negative association between liquidity and capitalisation. The findings of Gafrej and Abbas (2017) are consistent with those of Patora (2013) whose study also revealed a positive association between liquidity position and profitability and capitalization for conventional banks. Using the panel data regression method on 15 commercial banks and monthly data spanning 2009 to 2012, Chikoko (2013) finds a negative association between funding liquidity, bank size and capital adequacy in Zimbabwean commercial banks.

Umar and Sun (2016) conducted a study analysing the determinants of bank liquidity for BRICS countries for a period from 2002 to 2014 using multiple linear regression. Contrary to the studies of Gafrej and Abbas (2017) and Khoury (2015), which indicated that bank size is one of the significant determinants of liquidity, Umar and Sun (2016) found that bank size bears no significant effect on the liquidity of the BRICS banks as in their three models of liquidity. The study further established that the financial crisis had a negative effect on the liquidity position of BRICS banks.

Using a combination of ordinary least squares (OLS) and Fully-Modified Ordinary Least Squares (FMOLS) regression methods in the Czech banking sector spanning 2003 to 2014, Kašparovská, Laštůvková, and Sřelec (2016) conducted a study primarily intended to establish the effect of exchange rate on bank liquidity. The results indicate that the fluctuations between the Czech Crown (CZK) and the Euro positively affect the banks' liquidity. The study also indicates that the interbank offer rate and inflation negatively affect the banks' liquidity. The results further show that Gross Domestic Product (GDP) does not significantly affect the banks' liquidity position.

Another study on the Czech banking sector was conducted by Vodova (2011) using bank financial data covering the period from 2001 to 2009 and panel regression analysis. The study indicates a positive association between bank liquidity and capital adequacy. The study further establishes that inflation, financial crisis and business cycles have a negative effect on banks' liquidity. A similar study by Vodova (2013) examined the determinants of bank liquidity for Hungary's commercial banks using data from 2001 to 2010 using panel data regression analysis. Consistent with the findings in Czech, the results of the Hungarian study indicate that capital adequacy has a positive relationship with the liquidity of the banks. The study further reveals that interest on loans, monetary interest, and interbank rates are directly related to the banks' liquidity position. The study, however, discovers that the relationship between business cycles and liquidity is ambiguous.

3. Data, Variables, and Specification of the Model

3.1 Data

This study uses quarterly financial data on 28 South African banks and macroeconomic data spanning 2012 quarter 1 to 2021 quarter 4. The period immediately after the end of the global financial crisis was followed by a period of strategic review of the risk models and strategies by the banks and regulators. The study assumes that in 2012, all the necessary adjustments to models and regulations had been completed. The data used in the study is sourced from the South African Reserve Bank (SARB) database.

3.2 Variables

3.2.1 Dependent Variables

The identified inconsistencies and general lack of consensus in the literature on the appropriate liquidity indicator justify the estimation of bank liquidity using multiple measures to ensure the reliability of estimated results. *Total loans/(deposits and short-term loans)*, *Total loans/ total assets*, *Liquid assets/(deposits and short-term funding)* and *Liquid assets/Total assets* are the most used measure of bank liquidity (El Khoury, 2015; Vodová, 2012; Vodová, 2011). This study adopts *Liquid assets/(Deposits and short-term funding)* and *liquid assets/Total assets* as measures of liquidity. The results of the equations based on the other two measures have not been reported in this study because they failed most of the critical specification tests. Below are the definitions of the dependent variables reported in this study:

Liquid assets/Deposits and short-term funding (LIQ1): Liquid assets include all the near-cash assets of the bank; these assets include bills. The higher the calculated value of the ratio, the lesser the liquidity pressure on the bank and the lower the liquidity risk (Khoury, 2015; (Vodova, 2011)

Liquid assets/Total assets (LIQ2): Like in the case of *LIQ1*, Liquid assets include all near-cash assets of the bank. The higher the value calculated the lower the liquidity risk facing a bank (Khoury, 2015; Vodova, 2011).

3.2.2 Independent Variables

Literature has indicated that bank liquidity is determined by the factors that are specific to the banks and factors that emanate from their external environment. Bank-specific factors can be controlled internally and are nonfundamental in nature. The factors that emanate from the external environment of the bank are systematic or fundamental in nature. Although the banks can restructure their balance sheet position and manage their transactional exposures in response to changes in these factors, they lie outside their direct domain of influence. In accounting for these systematic factors, this study focuses on macroeconomic factors. The liquidity determining factors are outlined and discussed, starting with the factors deemed bank-specific.

3.2.2.1 Bank-specific factors

Size (Bank Size): The influence of the bank size on its liquidity and profitability remains conclusive. Examining the relationship between bank size and liquidity also evaluates the most popular “too-big-to-fail” hypothesis. This variable is also used in the studies of Gafrej and Abbes (2017) and Khoury, 2015)

Ln_CAP (Capital Adequacy): If bank customers were rational, they would pursue to place their money with the banks that are well capitalised as these banks would have a cushion to absorb financial risks and have relatively better chances of survival (Trenca *et al*, 2012; Patora, 2013)

Ln_DEP (Change in Deposits held by the banks): One of the traditional business functions of banks is to move money around its customers. Those with surplus funds place them with the banks as deposits and those who are financially deprived take loans. *Ceteris Paribus*, the drying up of the funding sources can expose a bank to a liquidity crisis, and the opposite is also true.

Lnadvfor (Change in Loans and advances to foreign banks): The variable represents advances to foreign banks. The presence of foreign banks in the South African banking sector is primarily a product of financial integration and globalisation. The variable provides information on the impact of the foreign banks and their business participation in the South African banking system with respect to liquidity. The sign and significance of the coefficient of the variable will provide information on whether the presence of foreign banks has enhanced liquidity conditions within the South African banking industry or not.

3.2.2.2 Macroeconomic factors (Systematic factors)

M_Rates (Money Market Interest Rates): *Ceteris Paribus*, Vodová (2011) found that when the short-term interest rates increase, it becomes attractive for the banks to place investable funds into the short-term market, thus improving their liquidity conditions. However, when banks may need funding in the short term, when money market interest rates are high, borrowing in this market becomes costly, creating more liquidity pressure on the banks.

EMP (Employment Growth): The way employment affects the banks' liquidity is two-fold. As more people get employed, the bank's customer base increases. The amount placed as deposits at the banks may also increase as the number of income earners increases. *Altera parte*, as the number of income earners increases, the amount of funds extended as loans may also increase as the general customer's ability to pay increases. The two have a counteracting effect as an increase in deposits enhances liquidity and an increase in loans extended deteriorates liquidity. The direction of influence of employment growth on liquidity is inconclusive.

MS (Money Supply): The amount of money in circulation is controlled by the Reserve Bank of South Africa. An **increased money supply** is associated with increased **liquidity** (Brunnermeier and Pedersen, 2009). This study uses M2 as a measure of Money Supply. The use of M2 as a proxy for money supply can also be found in the studies of Leeper and Gordon (1992) and Omankhanlen, Ilori, Isibor and Okoye (2021).

3.2.2.3 Pandemic factor

COVID-19: Caselli, Grigoli, Lian and Sandri (2020) assert that the lockdowns that were adopted by countries as a response to the COVID-19 pandemic resulted in a decline in economic activity. During the same time, bank transactions, especially withdrawals, could have declined as the bank visits declined with restricted public movement. The loans by companies could have increased as their incomes declined due to a decline in product use while their costs, including salaries, remained fixed in the short run. The decline in withdrawals and increase in loans have a counteracting effect. Flogel and Gartner (2020) assert that the lockdowns that were placed by the countries in response to the pandemic influenced the liquidity demand and the default risk in the banking industry.

In table 1, the notation for the variables used in the study is presented in column 1, the definition or mathematical derivation of the variables is provided in column 2. In column 3 the source of the data used in the study is provided.

Table 1: Description of Variables

Variable	Definition	Source
LIQ 1	Liquid assets/Total Deposits and short-term funding	Reserve Bank of South Africa nested in EasyData (Quantec)
LIQ 2	Liquid Assets/ Total Assets	Reserve Bank of South Africa nested in EasyData (Quantec)
Ln_DEP	Ln of (total deposits)	Reserve Bank of South Africa nested in EasyData (Quantec)
Size	Ln of (Total Assets)	Reserve Bank of South Africa nested in EasyData (Quantec)
lnGDPsa	Ln of GDP	Reserve Bank of South Africa nested in EasyData (Quantec)
Ln_CAP	Ln of (Total Equity/Total Assets), measures capital adequacy	Reserve Bank of South Africa nested in EasyData (Quantec)
COVID-19	A dummy variable, taking a value of 1 during the COVID-19 pandemic period and a 0 otherwise	Reserve Bank of South Africa nested in EasyData (Quantec)
EMP	Employment Growth	Reserve Bank of South Africa nested in EasyData (Quantec)
M_Rates	Money Market Interest Rates	Reserve Bank of South Africa nested in EasyData (Quantec)
MS	Money supply measured by M2	Reserve Bank of South Africa nested in EasyData (Quantec)
Lnadvfor	Loan and Advances to Foreign Banks	Reserve Bank of South Africa nested in EasyData (Quantec)

Table 2 provides a summary of the descriptive statistics of the variables used in this study. The number of observations for most of the variables is 878. Comparatively, *LIQ1* is more volatile than *LIQ2* and the rest of all the other variables. The variable for loans and advances to foreign banks has fewer observations as the business models of some of the banks in the sample do not involve giving loans to foreign banks while other banks are not in the business of giving out loans at all.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. dev.	Min	Max
LIQ1	878	1.492196	4.986281	0	35.59401
LIQ2	878	1.372251	5.105084	0	36.58206
Lnadvfor	391	13.28407	2.587387	0	16.29383
Size	878	16.55944	2.177675	12.17459	20.83487
lnGDPsa	858	0.015419	0.040302	-0.18595	0.151854
COVID-19	880	0.190909	0.393241	0	1
Ln_CAP	878	-1.67982	0.640585	-3.37106	0.861799
M_Rates	858	-0.03308	0.45984	-2	0.73
EMP	858	15.25641	3.916216	10	25
Ln_DEP	878	16.64984	2.10629	10.20606	20.82615
MS	840	7.605	2.809462	3.316667	15.16333

3.3 Specification of the model

The study estimates two liquidity estimating equations that incorporates the effect of macroeconomic and bank-specific factors as follows:

$$Y_{it} = \alpha + \beta_0 X_{it} + u_{it} \quad (1)$$

Where Y represents LIQ1 and LIQ2 and Y_{it} denotes liquidity risk for bank i at time t X_{it} denotes the independent variables explaining liquidity risk for bank i at time t and e_{it} is the random error term.

In Table 2, the descriptive characteristics for the explanatory variables and the dependent variables are provided. The descriptive information includes the mean, standard deviation, minimum and maximum. Most variables have 880 observations. The number of observations is, however, not consistent across all the variables. A variable with the least number of observations is the loan growth series, with 687 observations. Some banks are not providing loans; hence, no loan data was captured for those. Other banks are not providing loans to foreign banks at all; hence the noticeable low number of observations for 'Lnadvfor' series. The other inconsistency that can be seen is the discrepancy between the number of observations for the macroeconomic data and the commercial bank-related data. Although the data is from the same database, the commercial bank data seems to be updated more frequently than the macroeconomic data.

4. Empirical Results

In determining banks' liquidity, a series of tests had to be performed collinearity, stationarity and autocorrelation to ensure consistency, reliability and robustness of the estimated equations. The details of the tests conducted, and the results are provided.

4.1 Stationarity test

To determine unit root in the variables used in the estimation of the model, the Fisher type/Dickey-Fuller unit root test is applied on all variables. As Table 3 indicates, the test renders all the variables but inflation, market interest rates and growth as stationary. The COVID-19 variable is also not stationary as it is a dummy variable. All the variables that were found to be stationary in their level form became stationary after the first difference. COVID-19 is the only variable that was included in its natural form without treating stationarity as it is a dummy variable.

Table 3: Unit root test

Variable	Fisher type / Dickey-Fuller Inverse chi-squared (44)	P-Value
LIQ1	80.9677	0.0000
LIQ2	119.4902	0.0000
Lnadvfor	82.6159	0.0000
Ln DEP	82.6159	0.0000
Size	108.4162	0.0000
lnGDPsa	12.2704	0.0000
Ln CAP	109.9807	0.0000
COVID-19	4.4688	1.0000
MS	86.0745	0.0002
M Rates	6.8927	0.0000
EMP	174.5293	0.0000

4.2 Collinearity Test

Table 4 shows correlation coefficients of the variables calculated over the period 2012 quarter 1 to 2021 to quarter 4. The results of the correlation analysis show a weak correlation between most of the independent variables. However, there is positive correlation between lntotaldeposit and the size variable. There are options that could have been adopted to address the problem such as variable elimination, combining the variables or using the ridge regression. The concern of using these

procedures is that the application results in more problems as it leads to loss of vital information that could be lost from the regression models (Hryckiewicz and Kowalewski, 2010). O'Brien (2007) and O'Brien (2017) also assert that collinearity does not affect the results as long as the coefficients of the variables in question are statistically significant.

Table 4: Correlation Matrix

	LIQ1	LIQ2	Lnadvfor	COVID-19	Size	Ln_CAP	Lngdpsa	lnM2	EMP	M_Rates	Ln_DEP
LIQ1	1										
LIQ2	0.9832	1									
Lnadvfor	-0.2681	-0.3044	1								
COVID-19	0.1272	0.1185	-0.0973	1							
Size	-0.6834	-0.7158	0.5357	-0.0661	1						
Ln_CAP	0.7002	0.7	-0.3792	0.0737	-0.7531	1					
Lngdpsa	0.2166	0.2392	-0.0759	0.5325	-0.154	0.3069	1				
lnM2	-0.0175	-0.0356	0.0338	0.2636	0.0442	-0.0925	-0.2272	1			
EMP	0.1146	0.1099	-0.1267	0.6561	-0.0611	0.1156	0.3365	0.4195	1		
M_Rates	-0.0114	0.0092	0.1208	-0.8011	0.0012	0.0902	-0.0504	-0.3871	-0.5839	1	
Ln_DEP	-0.6303	-0.6732	0.5476	-0.0536	0.9958	-0.722	-0.1406	0.044	-0.0525	-0.004	1

4.3 Heteroscedasticity and Serial Correlation

Modified Wald statistic for groupwise heteroscedasticity test is applied in the two equations as well as the Lagrangian-Multiplier test for serial correlation. The two tests indicated the presence of serial correlation and heteroscedasticity in both equations. To address the observed heteroscedasticity, the study estimated the LIQ1 and LIQ2 equations using the *Huber/White estimator*, the procedure produces more robust and reliable results.

Table 5: Autocorrelation Test

WOOLRIDGE TEST	LIQ1	LIQ2
F (1, 9)	5.265	9.319
Prob>F	0.0474	0.0137

Table 6: Groupwise Heteroscedasticity

Wald Test)	LIQ1	LIQ2
Chi2(5)	179.2787	181.1745
Prob	0.000	0.0000

5. Empirical Results and Discussions

This study intended to examine the determinants of liquidity risk in South African banks using panel data regression. The estimation technique and model used in the econometric analysis should be consistent with the nature of the study's data. In estimating the intended equations, a decision had to be made whether to adopt the Pooled Ordinary Least Squares (POLS), the Fixed Effects Model (FEM) or the Random Effect Model (REM). The Hausman test was used first to determine an appropriate model between the FEM and the REM. Where the results of the Hausman test would have favored the REM to the FEM, the study would use Breusch-Pagan Lagrange multiplier (LM) to determine whether POLS would be better suited for estimation or the REM. After applying all the necessary tests, both equations were estimated using Random Effect Regression technique as the procedure deemed to be the most appropriate. The noted heteroscedasticity and serial correlation in both equations rendered the use of the more robust Huber/White estimator REM more appropriate.

Table 7: Empirical Results

	Equation 1 (LIQ 1)		Equation 2 (LIQ2)	
INDEPENDENT VARIABLES	Coefficient	Std. Err.	Coefficient	Std. Err.
BANK SPECIFIC VARIABLE				
<i>Lnadvfor</i>	-0.0060025***	0.001957	-0.00417***	0.001221
<i>Size</i>	-0.6172133***	0.080696	-0.19884***	0.03084
<i>Ln_CAP</i>	0.2374646***	0.030827	0.183769***	0.022739
<i>Ln_DEP</i>	0.5982524***	0.07224	0.184412***	0.029376
MACROECONOMIC VARIABLES				
<i>Money Supply (M2)</i>	0.0216551**	0.011074	0.005701	0.009335
<i>M_Rates</i>	-0.0129254*	0.007417	-0.00642*	0.003781
<i>EMP</i>	-0.00124	0.000785	-0.00039	0.000568
<i>LnGDPsa</i>	-0.11331	0.09105	-0.06448	0.057027
PANDEMIC VARIABLE				
COVID-19	0.004988	0.026353	0.008204	0.017008
CONSTANT				
<i>CONSTANT</i>	1.02882***	0.32408	0.823501***	0.268133
No. Observations	279		279	
R- Squared – Within	0.6576		0.5509	
R-Squared - Between	0.7394		0.6541	
R-Squared - Overall	0.7307		0.6442	
Wald chi2(8)	3991.33		7304.71	
Prob > chi2	0		0	

***, **and * indicate that a variable is significant at 1%,5% and 10% respectively

The derivation of both LIQ1 and LIQ2 variables, which are liquidity measures is different in the two equations presented but the interpretation of the result is the same. For both equations, a positive coefficient indicates a positive relationship between liquidity and a factor under observation.

5.1 The Bank Specific Variables and Banks' Liquidity

The sign of a deposit variable (Ln_DEP) is positive and significant in both equations. The positive and significant result indicates that the liquidity pressure reduces with an increase in deposits received by the banks. The sign for capital adequacy (Ln_CAP) coefficient is also positive and significant in both LIQ1 and LIQ2 equations. The positive and significant coefficient sign indicates that as the banks' capital adequacy improves, the banks' liquidity conditions also improve. This finding is consistent with the results of the study by Vodova (2013) conducted using Hungary data. The size variable is negative and significant in both equations, nullifying the 'too-big-to-fail' hypothesis. This finding is also reported in the study of Zaghoudi and Hakimi (2017). *Appendix 3: Figure 3* shows that on average the trajectory of liquidity risk carried a consistent trend only dropping in 2019, it dropped to the trend it followed between 2014 to 2017 in 2019. *Appendix 2: Figure 2* shows that from 2020 the loans extended by the banking industry increased sharply (loans form a bigger portion of bank assets). The loans are generally considered as illiquid assets. Lopez and Spiegel (2020) report that in the US, during the COVID-19 pandemic period, the banks increased the amount of loans extended as firms and business in general struggled to meet their operational costs obligations. The lnadvfor variable coefficient is negative and significant in both equations. The results indicate that lending to banks that are classified as foreign banks creates liquidity pressure on the banks. This finding partially indicates that global financial integration has not brought liquidity solutions in reducing the liquidity pressure in the South African banking system.

5.2 The Economic Variable and Banks' Liquidity

The lnGDPsa variable proxies the business cycle. The results in both equations indicate that business cycles are not a significant factor in determining bank liquidity. This suggests that changes do not influence South African bank liquidity conditions in economic conditions. The coefficient of money market interest rate (M_Rates) is negative and significant in both equations. Among others, this indicates that the banks are not increasing their investments into liquid money market instruments in response to increasing market rate, they are placing more funds into credit extension in pursue of higher returns that however come at the expense of their liquidity. The variable for money supply (MS) is positive and significant in equation 1. This finding suggests that when money supply increases, the banks get some relief from the liquidity pressure. Intuitively when money supply increases, market rates drop. This finding is consistent with the results reported on the relationship between market rates and bank liquidity. In both equations, the insignificance of the business cycle indicator (LnGDPsa) variable indicates that the banks liquidity is not determined by changes in the economic conditions in the country. The employment growth (EMP) variable is theoretically linked to the business cycles, just as is the case with the relationship between business cycles and banks' liquidity, the coefficient of the employment variable is insignificant in both equations. Vodova (2013) also reports an insignificant relationship between liquidity and business cycle.

5.3 COVID-19 and Banks' Liquidity

The coefficient of the COVID-19 variable is positive but insignificant in both equations. The insignificance of the variable implies that the COVID-19 pandemic crisis did not negatively affect the banks' liquidity. Amongst others, the COVID-19 pandemic would have affected the bank's liquidity through the lockdowns that resulted in economic inactivity and retrenchments. The results of this study show that South African banks' liquidity does not respond to economic cycles and unemployment. *Appendix 2: Graph 2* shows that the amount of deposits held by the banks continued to increase during the COVID-19 pandemic. Consistent with Li, Strahan and Zhang (2020) assertion, *Appendix 1: Graph 1* shows that the loans extended by the banks during the pandemic period increased while deposits increased. *Appendix 3: Graph 3* indicates that in 2019 bank liquidity declined sharply, and the loans extended by the banks also increased sharply around the same period; this confirms that the increase in loan extension by the banks during the COVID-19 pandemic period

compromised bank liquidity. The increase in bank deposits during the COVID-19 period has played a significant role in protecting the banks from the possible extreme effects of the liquidity crisis.

6. Conclusions

This study examined the determinants of liquidity risk in South African banks with a partial focus on the COVID-19 pandemic. The study has shown that the South African banking sector liquidity is not affected by changes in economic growth and employment. These two factors are linked to the COVID-19 pandemic as the lockdowns were adopted as a responding strategy to the COVID-19 pandemic. The lockdowns resulted in economic inactivity due to movement restrictions, business collapses and retrenchments. The regression results have confirmed that the pandemic did not significantly affect the banks' liquidity. Although there are no more lockdowns in respect of the pandemics globally and locally, the results indicate that in any case of a pandemic or a situation close to a lockdown that can result in economic inactivity, the banks will not have a knock on their liquidity position. This study's results have indicated that bank liquidity declined during the COVID-19 pandemic period. The decline can be mainly attributed to business decisions and strategic matters, as the study has shown that bank-specific factors are more dominant in determining bank liquidity. The study provides evidence that during the COVID-19 pandemic period, the number of loans extended by the banks increased, thus compromising the banks' general liquidity status.

The study has nullified the 'too-big-to-fail' hypothesis in the case of the South African banking industry setting, as banks considered to be 'big' because of their asset book size have shown a relatively higher liquidity risk exposure than smaller banks. This result suggests that *ceteris paribus*, it is safer for customers to bank with relatively smaller-sized banks. The results have also shown that adhering and complying with the statutory regulatory liquidity requirements by ensuring capital adequacy significantly contributes to solving banks' liquidity problems in South Africa.

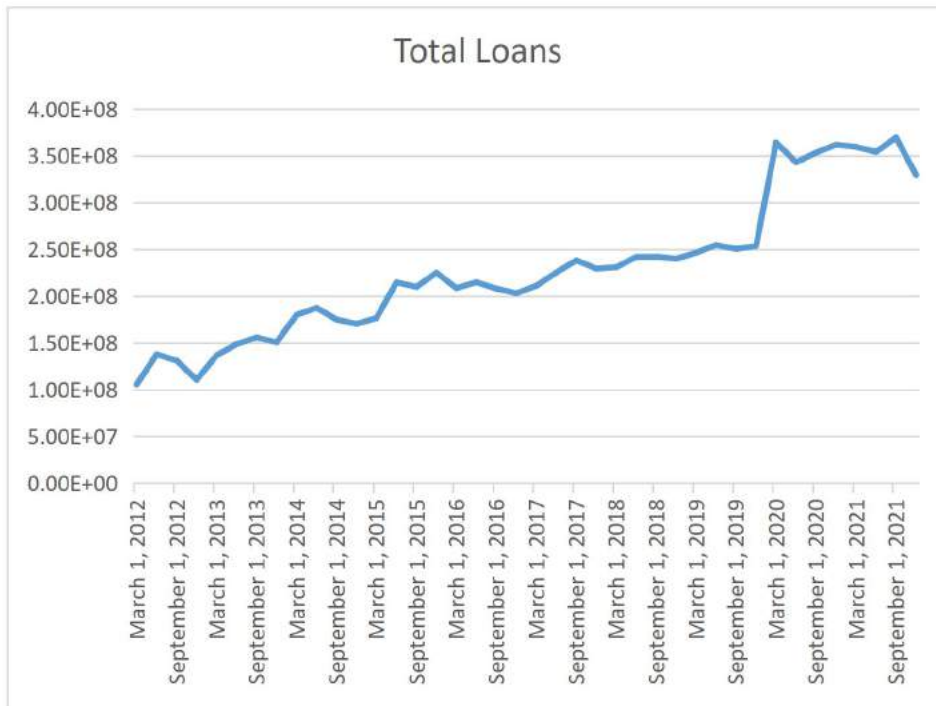
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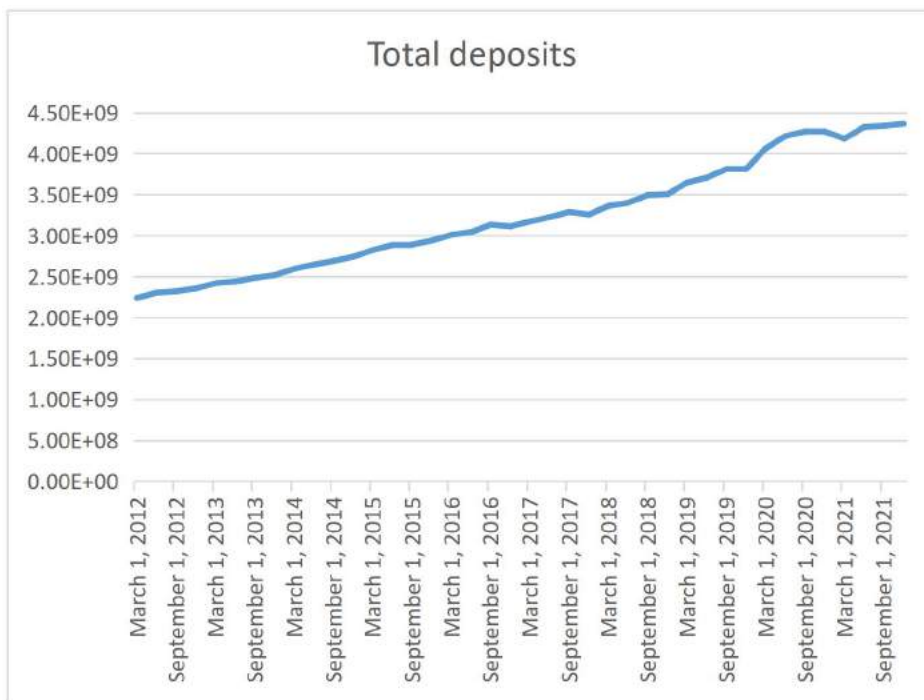
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Appendices

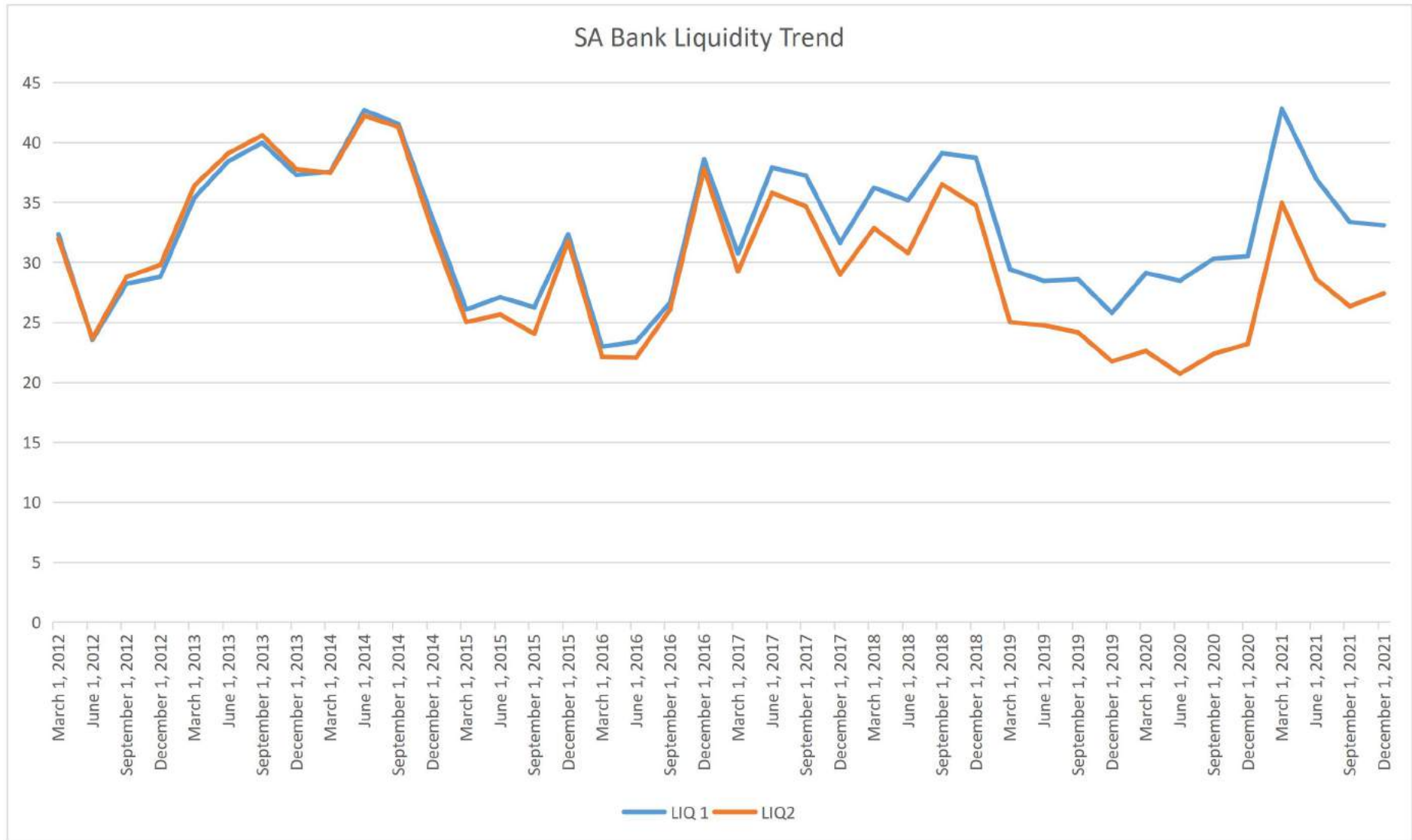
Appendix 1: Graph 1



Appendix 2: Graph 2



Appendix 3: Graph 3



Management Experiences during COVID-19 altering Human Dynamics to Effectively Optimise Operational Performance

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Keywords

COVID-19 pandemic;
emotions;
loneliness;
Middle Management;
social isolation and
distancing;
values.

Abstract

The authors postulate that with the reformed rules of working such as social isolation and distancing during COVID-19, employees experienced altered human dynamics which could have managerial implications and impact the future of work. This begs the question: How did managers adapt to the altered human dynamics experienced during COVID-19 rule?

A quantitative research approach was followed obtaining data from a small purposive sample of 20 middle managers in an essential services food production organisation during Covid-19. Data were collected using a self-administered hard copy 4-point Likert-scale questionnaire, comprising three constructs derived from literature i.e., loneliness, values, and emotions. Data were analysed using statistics applicable to small samples.

The results and findings clearly indicate the importance and conduct of management in turbulent times by providing psychological safety (to ensure optimal learning and change); the repair of social connections in the workplace (to mitigate loneliness); support enabling shared values (to ensure a unified effort and purpose); and pleasure in what they do (to mitigate emotions of anger, aggression and fear). Managerial implications and recommendations are addressed in how to deal with altered human dynamics during a crisis. Limitations and future research conclude the paper.

1. Introduction

The COVID global pandemic which was announced in March 2020 raged rampant and widely ignited feelings of fear, anxiety, and uncertainty in societies and workplaces. COVID-19 could be considered the perfect black swan (Taleb, 2008) – infrequent, impactful, and unexplainable. When it comes to black swan events, the future cannot be predicted based on past events, nor can anyone consider events unlikely to occur because the events are outliers (Taleb, 2008). Alternatively, COVID-19 could also be considered a white-swan event: something that would eventually take place with a great deal of certainty (Schwab & Malleret, 2020), given the many highly populated places and networks of human travel and trade.

Irrespective of COVID-19 being a black or white swan event, it remains unprecedented in terms of its effect on economic and organisational activity. Any such events call for a new paradigm of quick changes, flexible resources, focus on action, teams build around end-to-end accountability and leadership which enables action (Taleb, 2008; Schwab & Malleret, 2020).

The impact of COVID-19 was also felt on all levels of an organisation – macro (strategic), meso (team) and micro (individual) level. To survive as organisation, dynamic (creative and unpredictable)

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and static organisations (reliable and risk averse) were forced to re-configure their total business model - strategy, people, technology, processes, structure, value creation and value protection. Taleb (2008) spoke of the extended disorder family: uncertainty, variability, imperfect and incomplete knowledge, chaos, volatility, disorder, time, the unknown, randomness, stressors, error, dispersion of outcomes, chance, entropy, turmoil and unknowledge. In many organisations, the entire extended disorder family became part and parcel of organisational life during the global pandemic. Synergy of teams and normal functioning becomes difficult and even impossible given the widespread uncertainty. On an individual level, Schwabb and Malleret (2020) conclude that social distancing resulted in distrust, worsened by prolonged angst. The result being that people are driven apart. The authors of this paper postulate that with the altered ways of working, promulgated by social isolation and social distancing during COVID-19, the individual level or employees (including managers) experienced altered human dynamics which could have prolonged managerial implications and impact the future of work.

The purpose of this paper is to investigate the altered human dynamics during the COVID pandemic and the impact thereof on middle managers as employees (individual level) to ensure effective production.

1.1. Problem Statement

The forced lockdown and stringent control measures, e.g., changed working ways, forced social distancing, decreased social contact, increase in survival mode and increased feelings of loneliness and/or lack of social, mental, and/or emotional support, were a reality in workplaces for more than two years. Whilst the intention of lockdown, controls and closures was to prevent the spread of the virus within institutions and prevent carriage to especially vulnerable individuals, these stringent measures have had widespread socio-economic implications (Nicola, Alsafi, Sohrabi, Kerwan, Al-Jabir, Iosifidis, Agha, & Agha, 2020).

The problem being investigated in this paper relates to the uncertainty of how COVID-19 affected the human dynamics of managers and employees on an individual level. The context being an essential food service organisation in South Africa, where production had to be continued under strict COVID-rule. This means managers and employees had to comply with health and safety regulations to avoid becoming infected yet had to get to work when little or no transport was available during lockdown, work in close proximity in the operating plant without socialising and endure daily tests. It was especially the middle managers and operational employees who were more affected as they had no prior experience of managing and working under these pandemic conditions and had to seek solutions under stressful conditions to stay operational. The problem statement informs the research questions to be answered.

1.2. Research questions

The research questions being:

- a) What are the altered human dynamics experienced by middle managers in an operational food production plant during the Covid pandemic?
- b) How did middle managers adapt to the altered human dynamics to effectively optimise operational performance?

Much literature exists on human dynamics during crisis, however, to conceptualise the key theoretical constructs that specifically relate to situations of social isolation and social distancing an extant literature review was conducted.

2. Literature Review

The literature review will include the core constructs of human dynamics that support the discourse pertaining to social isolation and social distancing due to COVID-19 and its implications on employees in essential services organisations. The conceptual theoretical framework shown in Figure 1 below indicates the selected constructs and theories used in the study, which will be discussed.

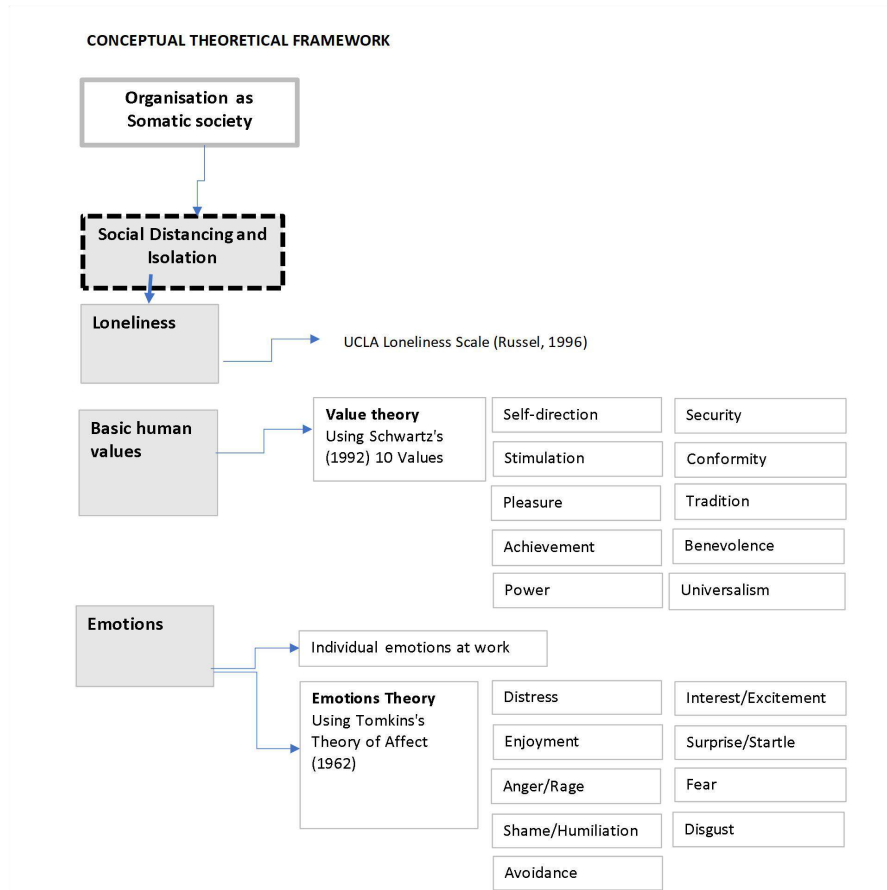


Figure 1: Conceptual Theoretical Framework (Authors' own)

2.1. Organisations – a somatic society

As humans, we have always inhabited a somatic society and these societies and organisations are living organisms, living bodies of work and knowledge, “structured around regulating bodies” (Turner, 1992, pp. 12 – 13). Within the regulating body of the organisation, we find norms, policies, procedures, governance and health and safety measures. Yet, in Africa, South Africa, and even world-wide regulating bodies are crumbling under accusations of fraud, corruption, incompetency, political agendas, and COVID-19 regulations. Within any living body there is a set of identity values and ordering factors of social practices and intuitive representations which finds its basis in widely shared moral intuition (Bianchi, 2008).

COVID-19 took the world by surprise: Governments radically forced guidelines that, in days, shut down business indefinitely and people were compelled to abide by the new norms. While hygiene measures remained like previous pandemics, the social distancing norms were particularly disruptive, resulting in a unique experience (Sikali, 2020). It seems important to investigate the impact COVID-19 regulations has/had on individuals and organisations.

2.2. Social distancing and social isolation – a metaphor for exclusion?

2.2.1. Social distancing

Earlier researchers noted that resistance to diversity and its manifestation primarily changed from overt and obvious manifestations to more subtle and more complex forms (Dovidio & Gaerner, 2000; Hebl, Foster, Mannix & Dovidio, 2002). Hebl, Madera and King (2008) points out (prior to COVID-19) different ways in which diversity resistance is manifested in interpersonal exclusion, avoidance and social distancing. The authors continue that interpersonal discrimination can be manifested in exclusion, avoidance, and social distancing through informal social networks in the workplace. The absence of such networks leads to feelings of isolation (Kanter, 1977) and lack of identification in the

workplace (Tsui and O'Reilly, 1989). Ibarra (1995) suggests that minority employees and in particular, minority managers have fewer intimate network relationships.

Social distancing means creating a safe distance of at least two meters between yourself and others; popularised by COVID-19 as a critical measure to prevent viral spreading. However, according to Pandi-Perumal, Vaccarino, Chattu, Zaki, BaHammam and Manzar (2021) the term is misleading as it implies that individuals should stop socialising.

To organisations and society, social distancing presents the dangers of increasing social rejection, growing impersonality and individualism, and the loss of a sense of community. It negatively affects learning and growth, and prevents people from effectively socialising, which is a fundamental human need (Sikali, 2020).

Baumeister and Leary (1995) asserted that positive social contact is essential for psychological and physiological health. The authors suggest human beings have a pervasive drive to form and maintain a minimum quantity of lasting, positive, and significant interpersonal relationships. Orben, Tomova, and Blakemore (2020) proposed social interactions to be a basic human need, analogous to other fundamental needs such as food consumption or sleep. Feeling insufficiently connected to others is associated with profound and lasting negative consequences on physical and mental health. Lieberman (2013) argued that social connection is the most essential need for human survival. Hagerty and Williams (2020) created three "biotypes" namely rumination, anhedonia [the inability to experience pleasure] and threat dysregulation brain styles; emphasizing the profound threat that COVID-19 poses to what makes us human, namely social connections.

Maintaining social bonds and socialising in a safe context is very important during times of crisis. The authors question whether terminology of physical distancing is not perhaps more appropriate given the longer-term reality of COVID-19.

2.2.2. Social Isolation

Social isolation is defined by the level and frequency of one's social interactions and describes an objective state of an individual's social environments and interactional patterns (Hwang, Rabheru, Peisah, Reichman & Ideda, 2020). The COVID-19 pandemic placed many locations under "stay at home" or "work from home" orders, resulting in a form of social isolation that is unprecedented in the modern world (Clair, Gordon & Kroon, 2021). The authors found that research explored the subjective experience of social isolation. However, the novel experience of mass physical distancing (popularised as social distancing) because of the COVID-19 pandemic suggests that social isolation is becoming a significant factor in the public health crisis.

Various authors concluded that the experience of social isolation relates to a reduction in life satisfaction (e.g., Xia and Li, 2018; Mellor, Stokes, Firth, Hayashi & Cummins, 2008; Hawton et al., 2011), and was found to be a significant mediator in life satisfaction and wellbeing across the adult lifespan during a global health crisis. In addition, individuals reporting higher levels of social isolation experience less satisfaction with the conditions in their home (Clair et al., 2021). Social isolation has traditionally been examined in older populations (e.g., Smith & Lim, 2020) and relates to numerous negative physical and mental outcomes (e.g., Bhatti & Haq, 2017; Xia & Li, 2018). Recent research found younger adults in their 20s reported more social isolation than individuals aged 50 and older during physical distancing (Clair et al., 2021). These findings support those of Nyqvist, Victor, Forsman and Cattani (2016) who found that young adults reported greater loneliness than older adults. Clair et al. (2021) found individuals who reported higher social isolation indicated less connection to their community and broader dissatisfaction across social and life domains. Also, that social isolation led to increased distrust; individuals who need the most support may be the most suspicious of the effectiveness of institutions providing support. Perceived social isolation was associated with negative coping rather than positive coping.

2.2.2.1. Loneliness

Loneliness refers to a subjective feeling of being alone (Hwang et al., 2020). Although loneliness and social isolation are not equal, both can exert a detrimental effect on health through shared and different pathways (Hwang et al., 2020). Loneliness relates to adverse impacts such as reduced sleeping time and increased awake time (Cacioppo et al., 2002; Fässberg et al., 2012), increased depression, impaired functional status, vision deficits and decreased quality of life (Lee et al., 2019). Loneliness is associated with suicide attempts and completed suicide among older adults (Fässberg et al., 2012) as well as with incident dementia (Kuiper et al., 2015).

It is important to note that prior to the COVID-19 pandemic, loneliness and social isolation were prevalent across Europe, the USA and China (10–40%) (Leigh-Hunt et al., 2017; Xia and Li, 2018) where it was described as a “behavioral epidemic” (Jeste, Lee & Cacioppo, 2020). This situation has only worsened with the restrictions imposed to contain viral spread (Lampraki et al., 2022).

To alleviate loneliness, authors (Hwang et al., 2020) suggests maintaining social connections with technology, structuring every day, and maintaining physical and mental activities. However, relaxation techniques, conscious breathing and mediation can manage cognition, emotion, and mood during loneliness.

This means that times of crisis affect social isolation, psychological safety and loneliness of people in general, which can have a detrimental impact on human’s value systems which in turn drive their behaviours. It has been known that values are crucial in explaining social and personal organisation and change (Durkheim, 1964; Weber, 1958). Values indicate what is important to us. Thereagainst, if values that individuals hold dear are not observed, psychological safety will decrease with resultant increased feelings of isolation.

2.2.2.2. Basic Human Values

Values derive from various sources, most of which are not recognized by the individual. Institutional structures (Hechter, 1993) and individual experiences (Feather, 1975; Hechter, 1993) embed values and provide a strategy for dealing with new choices (Kahle, 1996). Socialisation and culture are two constructs believed to impact on values. Values originate during needs, which are survival related manifestations of physiological conditions (Super, 1995). Values are cognitive representations of needs that have been transformed to take social sanctions into account and remain relatively stable motivational characteristics of individuals (Rokeach, 1973).

Social life is impossible without values; the functioning of social systems could not continue to achieve group goals, individuals could not get what they want and need from other individuals, internally they could not establish order and unified purpose (Kluckhohn, 1954). All human groups develop values (Williams, 1979) as a representation of what is important to us in a social setting. Common values ensure that societal members understand each other. At a societal level, values guide the fulfilment of individual’s biological and social needs (Schwartz, 1992). Societal values are stable as each value is surrounded by a cumulative net of meanings and interpretations (White, 1993). Cultural change will occur due to shifts in ecological conditions (Hofstede, 1980), but in turn also shape their environment (Hofstede, 1980; Inglehart, 1990). Bonetto et al. (2021) studied the possible evolution of Schwartz’s theory of Basic Human Values during the COVID-19 and found that values are malleable because of social isolation.

2.2.2.2.1. Schwartz’s Theory of Basic Values

The value theory defines ten broad values according to the motivation underlying each. These values are universal and circular in structure, reflecting the motivations each value expresses and captures the conflicts and compatibility among the ten values (Schwarz, 1992). These values are important coping mechanisms as they represent individuals needs as biological organisms, requisites of coordinated social interaction, and survival needs (Schwartz, 2012).

Schwartz (1992) adopted a conception of values that specifies six main features that are also implicit in the writings of many authors before and after his 1992 publication (e.g., Allport, 1961; Feather, 1995; Kluckhohn, 1951; Morris, 1956; Rokeach, 1973) and are features of all values:

- Values are beliefs linked to affect and when activated, become infused with feeling.
- Values refer to desirable goals that motivate action.
- Values transcend specific actions and situations. This distinguishes values from norms and attitudes which usually refer to specific actions, objects or situations.
- Values serve as standards or criteria.
- Values are ordered by importance relative to one another and
- The relative importance of multiple values guides action.

Table 1 below indicates Schwartz’s ten values with the defining goal and a brief description (Schwartz, 1992). These values are also indicated in Figure 1 above - the Conceptual Theoretical Framework.

Table 1: Schwartz’s ten values (1992)

Value	Defining goal	Description
Self-direction (self-respect, intelligent, privacy)	Independent thought and action (choosing, creating, exploring)	Need for control and mastery (e.g., Bandura, 1977) and interactional requirements for autonomy and independence (e.g., Kohn & Schooler, 1983)
Stimulation (a varied life, excitement, daring)	Excitement, novelty and challenge in life	Need for variety and stimulation to maintain an optimal, positive level of activation (e.g., Berlyne, 1960)
Hedonism (pleasure, enjoying life, self-indulgent)	Pleasure or sensuous gratification for oneself	Need for pleasure and satisfying them (e.g., Freud, 1933)
Achievement (ambitious, successful, capable, influential)	Personal success through demonstrating competence according to social standards	Achievement values emphasize competence in terms of prevailing cultural standards, thereby obtaining social approval; thus, active demonstration of successful performance in concrete interaction
Power (authority, wealth, social power)	Social status and prestige, control or dominance over people and resources	Power and achievement values focus on social esteem; thus, the attainment or preservation of a dominant position within the more general social system.
Security (safety, harmony, stability of society, of relationships, and of self)	Basic individual and group requirement (e.g., Maslow, 1965)	The goal of security for self or those with whom one identifies (social order, family security, national security, clean, reciprocation of favours)
Conformity (obedient, self-discipline, politeness, honoring parents and elders)	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms	Individuals inhibit inclinations that might disrupt and undermine smooth interaction and group functioning
Tradition (respect for tradition, humble, devout, accepting my portion in life)	Respect, commitment, and acceptance of the customs and ideas of one’s culture or religion	These symbolize the group’s solidarity, express its unique worth and contribute to its survival (Parsons, 1951) and share the goal of subordinating the self to socially imposed expectations by demanding responsiveness to immutable expectations from the past

Benevolence (support, well-wishing)	Preserving and enhancing the welfare of those with whom one is in frequent personal contact (in-group)	Basic requirement of smooth group functioning (Kluckhohn, 1951) and from the need for affiliation (Maslow, 1965). Most critical are relations within family and other primary groups.
Universalism (inner harmony, a spiritual life)	Understanding, appreciation, tolerance and protection of welfare of all people and nature	Contrasting with in-group focus of benevolence. This need is only recognized upon encounters of others beyond the extended primary group and awareness of scarcity of natural resources.

The theory continues to postulate that values form a continuum of related motivation are circular in structure. This also emphasizes adjacent values; the closer any two values in either direction around the circle, the more similar their underlying motivations. The more distant, the more antagonistic their motivations. However, the entire set of ten values relates to any other variable in an integrated manner (Schwarz, 2012). The authors found that the values of benevolence, universalism and self-direction appear at the top of the hierarchy and power, tradition and stimulation values appear at the bottom. Schwartz (2012) draws the order of values as follows (see Figure 3 below): SELF-ENHANCEMENT (Power -> Achievement) -> OPENNESS TO CHANGE (Hedonism -> Stimulation -> Self-Direction) -> SELF-TRANSCENDENCE (Universalism -> Benevolence) -> CONSERVATION (Tradition -> Conformity -> Security) -> SELF-ENHANCEMENT (Power -> Achievement). Note that the circular motion starts again with SELF-ENHANCEMENT (Power -> Achievement).

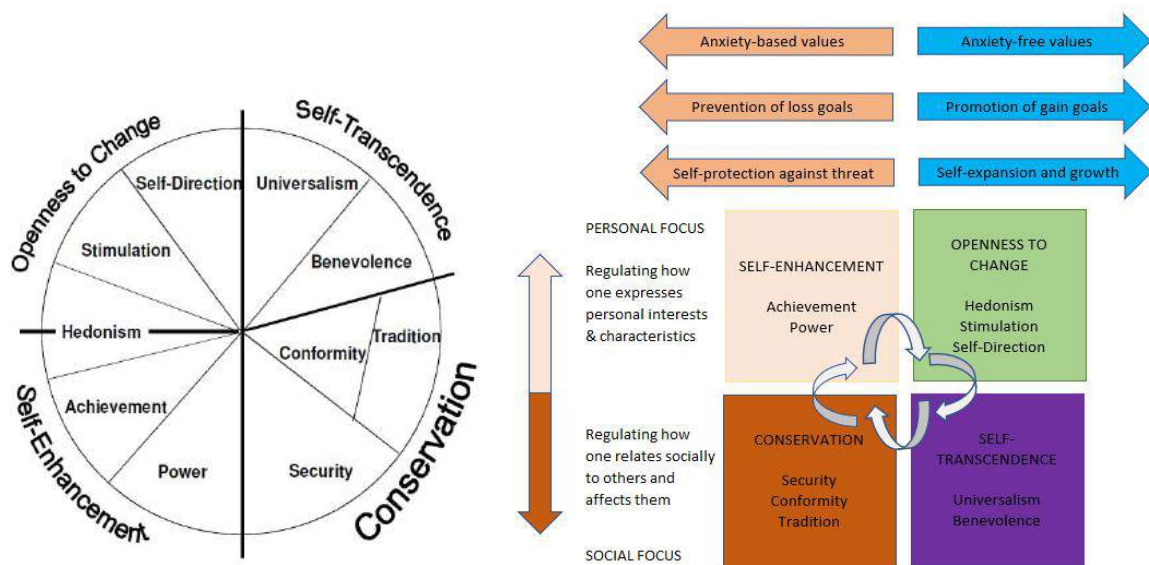


Figure 2: Theoretical model of relations among ten motivational types of value on left and relations among ten motivational types of value on right (Schwartz, 2012)

2.2.2.3. Emotions

Until recently, emotions in the workplace were altogether ignored, or regarded as an irrational annoyance (Fisher, 2019). Emotions had no place within rational organisations. Fortunately, this view changed during the 1980s, when researchers realised emotions are pervasive in the workplace; organisations are populated by people and people have emotions. However, organisations have applied normative expectations and established boundaries for the acceptable expression of emotion among employees (Gopinath, 2011).

Organisations are achievement driven settings. Goal pursuit and identity matter. This makes emotions inevitable (Fisher, 2008; Pekrun & Frese, 1992). Organisations are also social settings with real relationships that matter, again emotions will be experienced (Fisher, 2019). Various combinations of

emotional experience may facilitate or inhibit performance, relationships, creativity, productivity and reliability (Parke & Seo, 2017).

There are many examples indicating the asymmetrical effects of positive and negative emotions (e.g., Lindebaum & Jordan, 2014; Van Knippenberg & van Kleef, 2016). Recent researchers found the emotion most prevalent at work and expressed by managers is anger (28%). Further, that anger produces aggression and fear, creating organisational stress factors. The authors also found that 25% of respondents answered that emotions cannot be expressed at work (Akhvlediani, Mushkudiani & Nikabadze, 2020). Organisations are increasingly urged to intentionally manage their emotional culture to maximise desired outcomes (e.g., Barsade & O’Neill, 2016). Emotions impact on individual behaviour and interpersonal relationships.

2.2.2.3.1. Tomkins Theory of Affects (Emotional response)

Tomkins (1962) describes affect as the innate, biological response to the increasing, decreasing or persistent intensity of neural firing which results in a particular feeling, facial and/or body display and skin changes. Affects feel rewarding, punishing or neutral and makes things urgent. Awareness of an affect is a feeling. A feeling plus memory (of a prior similar feeling) is an emotion. Out of awareness, people develop rules (called scripts) to get more positive and less negative affect. The patter of scripts that a person uses to modulate affect make up his/her personality.

Further, each affect has a unique trigger, a level and pattern of intensity of neural stimulation over time. Stimulus may be inside or outside the body. Tomkins (1962) proposed that innate affects are triggered, not by the specific content of experience as Freud suggested, but by the increasing, decreasing or level intensity of neural firing.

According to this theory, each human is motivated to maximize positive affect while minimizing negative affect. Anything that helps the above is good and anything that interferes with the above is bad for us (Tomkins, 1962). These innate affects are described in Table 2 and indicated in Figure 1 above - Conceptual Theoretical Framework.

Table 2: Innate affects (Tomkins, 1962) before much learning has kicked in.

Affect	Description
Distress-Anguish: The cry for help	Crying is the first human response and is a cry of distress in response to the excessive, inescapable level of stimulation the baby is exposed to upon being born. “Too much!” Help is needed. Distress is triggered by a persistent, too high level of neural firing.
Interest-Excitement: The pull toward mastery	The purpose of this affect is to make learning rewarding. Interest is often neglected, but the interrelationships between the affect of interest and the functions of thought and memory are extensive. Interest is triggered by a gradual, manageable increase in neural firing.
Enjoyment-Joy: The social bond	The innate affect is triggered by a decreasing stimulus and is contagious. This mutually rewarding system of shared joy makes humans want to be social. People will seek to help and be helped by other humans who smile at us. Innate joy is triggered by a decrease in neural firing.
Surprise-Startle: The reset button	The purpose is to get you to stop what you are doing and pay attention to something new. It is triggered by a sudden, brief stimulus.
Anger-Rage: The demand to fix it	Anger is caused by overload. It is triggered by persistent high-density neural firing. If distress indicates “too much”, anger signals “WAY too much”. Managing anger and the violence associated with it are crucial for civilization. Systems of wealth, religion and laws are all collective responses to anger.

Fear-Terror: The signal to flee or freeze (Inherently punishing)	Fear is designed for emergency life and death situations, and it recruits an intense biological response to guarantee our attention goes entirely towards survival. It is highly punishing and intended to be briefly experienced. Fear is triggered by an intense, rapid increase in neural firing.
Shame-Humiliation: The self-protection signal (Inherently punishing)	The shame trigger is the incomplete interruption of excitement or joy. This is less about broadcasting a feeling and more about hiding. The purpose of shame is to be sufficiently negative to bring attention to whatever might have caused the positive affect to be impeded with the purpose of learning how to avoid the loss of positive in that moment or in the future. Once triggered, it further impedes positive affect. Shame can operate when the individual is alone, but often unacknowledged in relationships throughout life.
Disgust: The need to expel (Inherently punishing)	Disgust starts about hunger and is soon applied to people and non-food things. There are many aspects humans figuratively ingest (people, sights, thoughts, noises) that when found to be toxic, needs to be expelled.
Dissmell: The avoidance signal (Inherently punishing)	Dissmell is an impulse to pull/push away from items that should not be invested. Tomkins created this word to capture the biological response of repulsion, as if they smell foul. Dissmell + Anger = Contempt.

The constructs and elements from the theoretical base and theories in the abovementioned literature review have been used to draw the Conceptual Theoretical Framework shown in Figure 1 above and to explain the results and discuss the findings.

3. Methodology

The research methodology is guided by the research problem and questions mentioned above. A positivist philosophy was followed to investigate how existing theories of human dynamics applicable to social isolation and distancing i.e., Loneliness, Values and Emotions correlate with each other if applied in the COVID -19 context. Much literature is available on human dynamics during crisis situations, but not yet sufficient to answer to the research questions. This study followed a quantitative approach with a correlational research design. Correlational research describes what exists currently and examines differences of characteristics or correlates two or more variables. In this type of research, there is no manipulation of variables (Creswell, 2011).

3.1. Population and sample

The organisation under study uses Patterson Classic levels to grade positions. According to this grading system C1 – C5 category, described as middle managers were included in the study. The population comprised 37 of whom 20 voluntary responded to the questionnaire. This is a very small sample for a quantitative study, however the respondents were all experienced middle managers based at its operational plant during COVID-19.

3.2. Data collection

The authors developed a 35-item questionnaire using a four-point Likert scale. Respondents were asked during COVID-19 lockdown to voluntarily self-complete the questionnaire in hard copy, indicating how often each of the statements in the questionnaire is descriptive of them in their work situation. Respondents had to indicate whether they often, sometimes, rarely, or never experienced feelings related to each question. Questions relating to loneliness, values and emotions. The UCLA loneliness scale (Russell, 1996) was used as it is highly reliable, both in terms of internal consistency (coefficient a ranging from .89 to .94) and test-retest reliability over a 1-year period ($r = .73$). Questions pertaining to values and emotions were derived from literature and added to the questionnaire. The 35-item questionnaire intended to measure middle managers as respondent's

subjective feelings of loneliness as well as feelings of social isolation during the COVID-19 lockdown period.

Given the organisational setting, the questions on values related to self-direction, stimulation, pleasure, achievement and security. Emotion/affect questions related to distress, interest, enjoyment, surprise, anger, fear and shame. Pleasure, joy and enjoyment were combined as an enjoyment value-emotion. Similarly, fear and anxiety were grouped together with safety and security as a survival value-emotion.

3.3. Data analysis

An excel spreadsheet was designed for 20 questionnaire responses. Responses were checked for completeness. Codes were used to ensure the anonymous capturing of the data. Data were captured into the excel spreadsheet from where statistical analysis could be done. Firstly, data were cleaned ensuring quality data. Respondents could choose four responses namely, often, sometimes, rarely and never. Control answers were checked to ensure that they fell in the same range or that there was at worst, one scale difference, e.g., if sometimes were chosen, the control answer could be often or rarely, but not never. Data from all 20 respondents were usable. Mean values were determined, as well as Pearson correlations coefficients and Fischer's Exact Test to determine significant association (or not) between variables. Fisher exact test is a nonparametric test for categorical data but can be used in situations in which the chi-square test cannot, such as with small sample sizes (Winters, Winters & Amedee, 2010), such as in this study.

4. Results and Findings

4.1. Respondents and Job Grading

Table 3 indicates the number of respondents with their job grading category.

Table 3: Respondents and job grading category

Respondents	Grading category
1, 2, 3, 4, 5, 6, 7, 8, 9,10,11	C 3 - 5
12, 13, 14, 15, 16, 17, 18, 19, 20	C 1 - 2

4.2. Coding system

Table 4 indicates the data coding used to identify data under the three constructs of Loneliness, Basic Values and Emotions.

Table 4: Data Coding system

Code	Description	Questions	Control questions
LO	Loneliness	2,4,6,7,8,9,12	5,11,14
	Basis values		
SD	Self-Direction	15,26	
ST	Stimulation	16	21
AC	Achievement	17	27
SS	Safety/Security	18,28,34	1,13
	Emotions		
DS	Distress	19,29	
PJ	Pleasure/Joy	20,31	3
IN	Interest	22,30	10
SU	Surprise	23,32	
AN	Anger	24,33	
HU	Humiliation	25,35	

4.3. Statistical Analysis and Results

Results will be shown with brief interpretations and will be discussed in the findings section.

Table 5: Mean values

Variable	Mean	Std. Error	[95% Interval]	Conf.	
LONELINESS	1.81	.114	1.57 2.05		
Self-direction	0.73	.099	0.52 0.93		VALUES
Stimulation	1.55	.153	1.22 1.87		
Achievement	1.65	.131	1.38 1.92		
Safety/Security	1.75	.128	1.48 2.02		
Distress	1.5	.126	1.24 1.76		EMOTIONS
Pleasure	1.83	.116	1.58 2.07		
Interest	1.7	.111	1.47 1.93		
Surprise	1.55	.114	1.31 1.79		
Anger	1.5	.115	1.25 1.74		
Humiliation	1.3	.105	1.08 1.52		

The results in table 6 clearly shows that loneliness was experienced by managers and what pushed them to pursue under difficult circumstances were the values of achievement and stimulation at work provided that safety and security could be upheld. The emotion felt pleasure can be linked to achievement and finding a way to stimulate positive emotions of surprise.

Table 6, next page, shows the estimated Pearson correlations coefficients between the variables. The results in Table 6 indicate that:

- Self-direction shows a *strong positive correlated* with stimulation and interest
- Stimulation shows a *weak positive correlated* with interest
- Achievement *correlates* with surprise and humiliation. It is positively correlated with surprise but negatively correlated with humiliation.
- Achievement shows a *weak negative correlated* with anger
- Distress shows a *positive correlated* with interest
- Pleasure shows a *weak negative correlated* with anger

These results are in line with how values and emotions influence each other in general. If managers give direction during stressful situations emotions can be more positive by leading to achievement. This will be discussed in the findings section

Table 6: Pearson Correlations

Variable	Loneliness	Values				Emotions						
		Self-direction	Stimulation	Achievement	Safety/ Security	Distress	Pleasure	Interest	Surprise	Anger	Humiliation	
Loneliness	1											
Values	-0.179	1										
Self-direction	0.450 20											
Stimulation	-0.010 0.966 20	0.664*** 0.001 20	1									
Achievement	-0.373 0.105 20	0.252 0.285 20	0.066 0.783 20	1								
Safety/ Security	0.066 0.783 20	0.023 0.924 20	0.285 0.223 20	0.286 0.222 20	1							
Emotions	0.287	0.171	-0.123	0.356	0.134	1						
Distress	0.220 20	0.471 20	0.605 20	0.123 20	0.574 20							
Pleasure	-0.123 0.605 20	-0.043 0.858 20	-0.328 0.158 20	0.356 0.123 20	-0.089 0.709 20	0.167 0.483 20	1					
Interest	0.212 0.369 20	0.601*** 0.005 20	0.414* 0.070 20	0.154 0.518 20	-0.066 0.783 20	0.533** 0.015 20	0.123 0.605 20	1				
Surprise	-0.212 0.369 20	-0.179 0.450 20	-0.212 0.369 20	0.504** 0.023 20	0.285 0.223 20	-0.287 0.220 20	0.082 0.731 20	-0.192 0.418 20	1			
Anger	0.302 0.196 20	-0.315 0.177 20	0.101 0.673 20	-0.436* 0.054 20	0.218 0.355 20	0.000 1.000 20	-0.408* 0.074 20	-0.101 0.673 20	0.101 0.673 20	1		
Humiliation	0.373 0.105 20	0.206 0.384 20	0.373 0.105 20	-0.524** 0.018 20	0.191 0.421 20	-0.134 0.574 20	-0.356 0.123 20	0.066 0.783 20	-0.285 0.223 20	0.218 0.355 20	1	

Note: 1. * means that the association between the variables is significant at the 10% level ** means that the association between the variables is significant at the 5% level

*** means that the association between the variables is significant at the 1% level.

Note: 2. The 1st figure indicates the Pearson correlation coefficients, the 2nd figure the probabilities and the 3rd figure the number of observations

4.4. Fisher's test

Fisher's Exact Test was used in this study to determine whether there is a significant association between two categorical variables or not. It is typically used as an alternative to the Chi-Square Test of Independence when one or more of the cell counts in a 2×2 table is less than 5. The following results in Table 7 were obtained.

Table 7: Fisher's test results

Raw Variable1	Column Variable2	Fisher's exact	Prob.	Significant/ Not significant	
Loneliness	Values				
	Self-direction	0.642	0.370		
	Stimulation	1.000	0.658		
	Achievement	0.157	0.119		
	Safety/Security	1.000	0.574		
	Emotions				
	Distress	0.362	0.205		
	Pleasure	0.670	0.465		
	Interest	0.406	0.311		
	Surprise	0.406	0.311		
Anger	0.370	0.185			
Humiliation	0.157	0.119			
Value Self-direction	Value				
	Stimulation	0.005***	0.004	Highly Significant	
	Achievement	0.354	0.277		
	Safety/Security	1.000	0.664		
	Emotion				
	Distress	0.642	0.392		
	Pleasure	1.000	0.608		
	Interest	0.017**	0.012	Significant	
	Surprise	0.642	0.370		
	Anger	0.350	0.175		
Humiliation	0.613	0.336			
Stimulation	Achievement	1.000	0.574		
	Safety/Security	0.336	0.217		
	Distress	0.670	0.465		
	Pleasure	0.197	0.157		
	Interest	0.092*	0.080	Weakly significant	
	Surprise	0.406	0.311		
	Anger	1.000	0.500		
	Humiliation	0.157	0.119		
	Achievement	Safety/Security	0.303	0.225	
		Distress	0.161	0.137	
Pleasure		0.161	0.137		
Interest		0.642	0.426		
Surprise		0.050**	0.038	Significant	
Anger		0.141*	0.070	Weakly significant	
Humiliation	0.037**	0.037	Significant		
Safety/Security	Distress	0.642	0.455		
	Pleasure	1.000	0.545		
	Interest	1.000	0.574		
	Surprise	0.336	0.217		
	Anger	0.628	0.314		
	Humiliation	0.613	0.387		
Distress	Pleasure	0.648	0.388		
	Interest	0.028**	0.025	Significant	
	Surprise	0.362	0.205		
	Anger	1.000	0.675		
Humiliation	0.642	0.455			

Pleasure	Interest	0.670	0.465	
	Surprise	1.000	0.535	
	Anger	0.170*	0.085	Weakly significant
	Humiliation	0.161	0.137	
Interest	Surprise	0.653	0.342	
	Anger	1.000	0.500	
	Humiliation	1.000	0.574	
Surprise	Anger	1.000	0.500	
	Humiliation	0.336	0.217	
Anger	Humiliation	0.628	0.314	

Note: * means that the association between the variables is significant at the 10% level
 ** means that the association between the variables is significant at the 5% level
 *** means that the association between the variables is significant at the 1% level

The following associations were identified applying the Fisher's test:

- Self-direction and stimulation (highly significant association)
- Self-direction and interest (significant)
- Stimulation and interest (weak)
- Achievement and Surprise (significant)
- Achievement and Anger (weak)
- Achievement and Humiliation (Significant)
- Distress and interest(significant)
- Pleasure and anger (weak)

4.5. Discussion of Results and Findings

The authors expected loneliness to be more important as it was viewed as a major construct of social isolation in the literature. Waytz et al., (2015) found people at the bottom of the organisation reported greater loneliness. This could relate to the data as the selected group consisted of mid-level managers who continued to work on-site throughout all the COVID-19 lockdown levels. Waytz et al., (2015) also suggested loneliness to be affected by powerlessness. Again, it seems that the ability by mid-level employees to self-direct, mitigates powerlessness and in turn loneliness. Contrary to earlier beliefs stating that emotions in the workplace is irrational and has no place (Fischer, 2019), the results indicated that emotions in the workplace matters deeply, that emotions are experienced and that emotions may inhibit performance, relationships and productivity.

The results indicated the motion or lack thereof because of experienced emotions. Therefore, the authors refer to e-motion as the energy (e) which allows people into motion (or not). E-motion is then affected by the somatic society or organisation within which people find themselves, by distance or feelings of isolation and by values that are important to them (Bonetto et al., 2021).

The e-motions of self-direction, stimulation, interest, achievement, surprise, humiliation, anger, distress and pleasure stood out in the results. These e-motions include values as an e-motion. This will be discussed in the following section.

4.5.1. Values as an e-motion

E-motion ~ Values: Values explain what people hold important. If our social connections are troubled or non-existing, our social bonds and our feeling accepted by others suffer. Common values ensure that people understand each other. If our social connections suffer, so do our common understanding of each other. Self-direction and pleasure/joy were the two values with the highest correlation to loneliness. These values are described under openness to change (Schwartz, 2012) which aims towards anxiety-free values, the promotion of gain goals, self-expansion and growth.

E-motion ~ Self-Direction: This e-motion relates to the ability to explore new ways of working and making independent decisions and feeling that my opinion counts. Self-direction mitigates feelings of loneliness, even if only as a perception of being in control of my work situation. Positive self-

direction creates openness to change, which in turn creates the ability to learn, master and engage in new ways of working.

E-motion ~ Stimulation: Through stimulation employees are engaged in thought, problem identification and creative solutions. Stimulation allows the utilisation of personal skills, making an employee feel useful, valuable and excited about the task at hand.

E-motion ~ Interest: This e-motion relates to feelings of excitement, pleasure and enthusiasm towards new tasks. When people can work with something that interests them, work seems easy, time flies and people often experience enjoyment.

E-motion ~ Achievement: Achievement is tied to one's ability to achieve set goals. This e-motion is directly tied to an outcome. Humiliation, anger and distress could be classed as negative achievement emotions, tied into the failure to achieve goals or even just the anticipation that one will fail to achieve them.

4.5.2. Basic human emotion as e- motion

E-motion ~ Surprise: Surprise is a basic human e-motion (Eckman, 2003; Tomkins, 1962) indicated surprise as a brief, yet basic human emotion following something unexpected. The moment after the startle response will determine whether the emotions that follow will be positive, negative or neutral.

E-motion ~ Humiliation: This e-motion relates to being shamed and/or humiliated at work, causing the person to make him/herself smaller and even invisible. If employees purposefully hide, it seems fair to assume that productivity, communication, and interactions will suffer. This confirms Argyris (1982 in Edmonson, 1999), who stated that people tend to act in a way that inhibit learning when they face potential threat.

E-motion ~ Anger: Anger is an intense e-motional state which involves strong responses to a perceived provocation, hurt or threat. Anger is often displayed through non-cooperation but often relates to something the employee deeply cares about.

E-motion ~ Distress: Distress could be experienced physically, emotionally and/or mentally (Selye, 1974) and is a highly unpleasant emotional reaction (Tomkins, 1962).

E-motion ~ Pleasure: Pleasure is a positive emotion. Schwarz (2012) termed it hedonism and placed this emotion on the cusp between openness to change and self-enhancement. This indicates that pleasure creates a space for expansion, growth, anxiety-free values and the promotion of gain-goals.

4.5.3. Integrating the Theory of Values (Tomkins, 1962) with the Theory of Emotion (Schwartz, 2012)

The most prevalent e-motions mentioned in point 4.4.2. were grouped together according to the theories of Tomkins (1962) and integrated with Schwartz's (2012) values. This is displayed in Table 8 below. The researchers suggest that loneliness is an affect or e-motion, signaling isolation due to a lack of physical, interest, value and/or emotional connections, thus resulting in stagnation or a lack of movement. However, self-direction and/or interest are powerful mitigators of loneliness.

Table 8: Prevalent e-motions

Affect/E-motion	Signal	Focus	Survival pattern: *F/F/F/F
Self-Direction	Mastery	Openness to Change	None
Stimulation	Mastery	Openness to Change	None
Interest	Learning	Openness to Change	None
Achievement	Power	Self enhancement	*Fight (F)
Surprise	Pay attention	Stop, and do something else	*Freeze (F)
Humiliation	Self-protection	Hide yourself	*Freeze (F), Fawn (F)
Anger	Fix it	Persistent overload	*Fight
Distress	Help	Excessive stimulation	*Flight
Pleasure	Social bond	Openness to Change & Self enhancement	None

Further, the focus column was added to table 9 to indicate the primary purpose for the e-motion. The survival pattern column was used to relate these e-motions back to fight, flight, freeze and/or fawn survival responses. It then becomes clear that distress, anger, humiliation, achievement and possibly surprise are primary e-motions to ensure safety. A re-visualization of the value theory of Tomkins (1962), Schwartz (2012) and Maslow (1943), resulted in Figure 3 below.

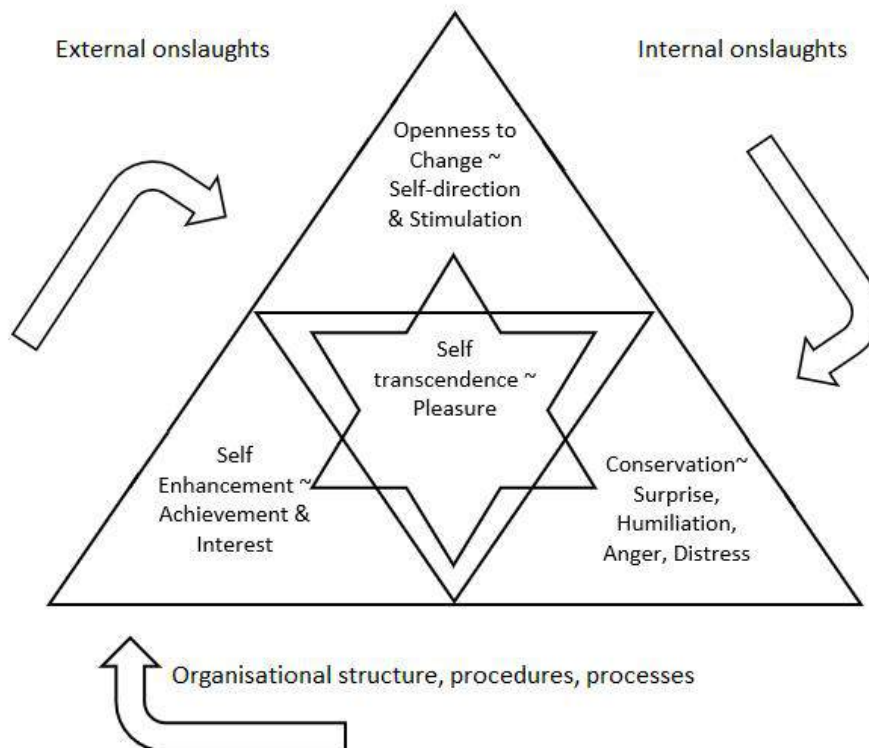


Figure 3: Triangle of emotions (Authors' own)

Figure 3 indicates pleasure at the center. When employees experience pleasure, openness to change, learning and self-enhancement is possible, diminishing conservation e-motions. Pleasure seems to be the doorway to improved balance. An employee experiencing conservation e-motions, are not experiencing pleasure and will therefore find it difficult to engage with interest, achievement, self-direction and stimulation. Similarly, when experiencing self-enhancement e-motions, pleasure opens the doorway to change. Similarly, if e-motions such as anger, surprise, humiliation and/or distress can be utilised towards positive problem solving, reduced isolation and increased psychological safety will follow. This will result in improved effectiveness and efficiency. The pleasure triangle -see

Figure 3, was therefore overlaid with a star shape, to indicate the multitude of possibilities as emotion pleasure is the pivotal piece.

This study indicated that self-direction and pleasure were the two values that suffered most because of loneliness. This implies that values of self-enhancement and self-transcendence cannot be attained, and social focus remains secondary to personal focus. This becomes a double bind; a person's loneliness prohibits his/her ability to explore social connections. Reminding ourselves that loneliness and social isolation was already described as a behavioral epidemic (Jeste, Lee & Cacioppo, 2020), confirms a severe threat to our being human (Hagerty & Williams, 2020).

Further, given our inability to move circularly towards self-enhancement and self-transcendence, conservation becomes unreachable too. Security, the stability of society, relationships and of self becomes impossible. Conformity becomes impossible, resulting in disruption and undermining of smooth interaction and group functioning. Even the display of basic good manners, politeness and self-discipline becomes unattainable. Organisational norms, expectations and demands will most likely no longer be respected, and group goals will in all likelihood become subordinate to the self.

The findings show that managers/employees are increasingly functioning in survival modes. They seem to experience increased feelings of loneliness and/or lack of social, mental, and/or emotional support. Teamwork and the synergy experienced by highly functioning teams are lacking. Teams are not only struggling, but they also hardly exist due to isolation.

Emotions that were commonly experienced during daily routines and interactions, such as anger, humiliation and distress are bound to result in irrational behaviour. A lack of physical closeness (through 'knowing a colleague is there to support me') could be exacerbated by a lack of emotional and/or mental support. Increased distress results in feeling disconnected from one's peers and place of work. If not addressed adequately alienation and loneliness seems inevitable. "Social distancing" could have been termed "physical distancing", with the resultant communication, safe interaction and continued teamwork. Mass social distancing has been forced upon people with control measures and punishment. If not acknowledged, these altered working ways, continued models of work-from-home and social distancing, decreased social contact, increased feelings of anger and distress will likely increase feelings of disconnect and loneliness. All of which are severing workplaces and affects the future of work and community.

5. Conclusion

This first part of the conclusion will be on answering the research questions posed

- a) What are the altered human dynamics experienced by middle managers in an operational food production plant during the Covid pandemic? This question was answered in the results and findings section on Loneliness, Values and E-motions. This paper researched three constructs relating to altered human dynamics as impacted by social distancing and isolation, namely: loneliness, values, and emotions. The authors postulated that social distancing leads to social isolation. Loneliness in the workplace is therefore assumed to be an outcome of social isolation. However, it rather seems that a lack of self-direction is a predictor of isolation and/or loneliness. When an employee feels disconnected, unsupported, insufficiently connected with others and organisational belongingness, then isolation (as a reduction in life satisfaction) will be experienced.
- b) How did middle managers adapt to the altered human dynamics to effectively optimise operational performance? Humans need to belong. When external influences and/or powers seem out of control, the individual needs to take back personal control. Where this is possible, through self-direction, stimulation and interest, (psychological) safety can be achieved because of the pleasure experienced. Where self-direction is not possible, feelings of isolation will increase.

Where employees are permitted to express negative emotions (such as anger, distress, surprise) towards problem solving, isolation can be averted. Fear of expression will likely result in increased feelings of isolation and loneliness.

This study shows how human dynamics are altered during social isolation and distancing with definitive managerial implications in the workplace. The results and findings clearly indicate the importance and conduct of management in turbulent times by providing psychological safety (to ensure optimal learning and change); the repair of social connections in the workplace (to mitigate loneliness); support enabling shared values (to ensure a unified effort and purpose); and pleasure in what they do (to mitigate emotions of anger, aggression and fear). Managerial implications are discussed in the next section to offer practical solutions to re-establish (psychological) safety, social connection, shared values, and improved teamwork to ensure our basic human needs are met while at work.

6. Managerial Implications

It seems important to firstly recognise that workplaces have changed dramatically as a result of the COVID pandemic. Workplaces are no longer rational domains - uncertainty, variability, imperfect and incomplete knowledge, chaos, volatility, disorder, time, the unknown, randomness, stressors, error, dispersion of outcomes, chance, entropy, turmoil and unknowledge are daily occurrences and woven into the modern organisation. The frequency of which disturbs and will continue to disturb the organisational intent.

These changes create the need for managers to operate from within a new paradigm. Key drivers in this new paradigm seems to be flexibility, adaptability, focus on attention, quick changes, teams build around end-to-end accountability and leadership which enables action. As Taleb (2008) rightly concludes: The fragile is easily destroyed and liable to break, while the static finds it difficult to change and/or move. Fragile does not like volatility while agile organisations are able to move quickly and seems, on the surface, not to be perturbed by volatility. This could be described as flexibility or adaptability. However, managers should note that above the surface flexibility and adaptability, volatility could hide below the surface. Sadly, current the key drivers include anger, surprise, humiliation and distress; all of which are fragile and liable to break while finding it increasingly difficult to change and/or move.

One way of moving into such a new paradigm is for organisational leaders and managers to maintain stability, structure and routine in areas that can be controlled. In times of workplace change and amid crisis (e.g., COVID-19), few elements can be under total control. However, support in the form of open communication, conveying the rationale for control vs flexibility and the empowerment of workplace decisions are critical in enhancing psychological safety. Through fair and just application, the foundation of structure, processes and procedures can be a solid springboard (figure 5) for change and self-enhancement and interest.

Ironically, psychological safety is required for optimal learning (Hökkä, et al., 2020). If employees do not feel safe (as our data confirmed), they are unable to learn their way around a new paradigm. Humans are all born with an innate sense of survival, triggers which focus our attention and motivates us to act (Tomkins, 1962). If anger, surprise, humiliation, and distress are primary triggers, organisational learning will be constrained.

Creating a safe workplace must be a priority on every manager's agenda. Without safe workplaces, learning, changing and being productive becomes very difficult. Safe workplaces can be built through teamwork, shared beliefs and values, shared support and ensuring safety when interpersonal risks are taken and to allow employees to make mistakes to learn and discover new and improved ways of working.

The findings suggest important values to cultivate as "new normal" are self-expansion, personal orientation, inner directedness, and competence. If these values are cultivated through altered

workways, employees could experience pleasure at work, which in turn will enhance psychological safety, participation, productivity, and teamwork.

Within the culture of each organisational body, managers should ask themselves how they can assist the repair of social connections in the workplace. Creating structure and routine where possible, supporting strong teamwork, allowing the re-creation of identity in the workplace, re-creating psychologically and physically safe settings for socialising and re-establishing of social bonds and rebuilding loyalty and participation are possible solutions. It seems imperative that above and beyond profit, organisations must create, cultivate, and establish cultures rooted in trust and respect, importance of people and shared values.

It seems that a re-evaluation of emotional display in the organisation is called for. The management of emotions requires effort. If the display of emotions is acceptable or if acceptable outlets for emotions are available, then more energy will be available to be productive as opposed to suppressing emotions. It could be questioned whether low uncertainty avoidance could lead to a struggle as a result of too much non-structuredness, resulting in further emotional turmoil.

If emotions continue to be suppressed, anger is inevitable. If anger is not expressed, aggression and fear will follow. If harnessed correctly, anger can be utilised through a high energy display. If not, anger will become counterproductive, and even toxic.

Many organisations did not survive. Workplaces are of the few institutions that continue to live and will hopefully thrive again – these societies must become more aware and sensitive to fundamental human needs. Organisations will have to rethink the social agenda – feeling sufficiently connected to colleagues, positive mental and emotional contact.

The organisational body does not and cannot live in isolation, as a head cannot function without a heart. The organisational body that has been ripped apart through social distancing must be repaired, sewed together through debriefing, increased physical, emotional and mental closeness and support. Forums to tell the stories, shares the heartache and rebuild emotional bonds could provide one avenue towards repair. Formal debriefing another.

Kluckhohn (1954) states that social life is impossible without values; the functioning of social systems could not continue to achieve group goals, individuals could not get what they want and need from other individuals, nor could they internally establish a measure of order and unified purpose. If our values are not acknowledged, life becomes difficult and even impossible. Organisational culture impact values, as does survival needs. Common values can bridge the divide between survival and cultural needs. Our data indicated that moral and competence values have reduced, possibly because of Covid-19. Further, that personal values increased, possibly due to increased self-centeredness because of survival needs, while social values decreased. Managers therefore need to re-establish shared values, linked to goals and required actions. These values should transcend personal situations and serve as standards or criteria.

Within organisations people must ensure that humans openly share that which is important to them (their values), then the process of re-establishing can begin to socially bond in a safe context. Optimal learning, productivity and efficiency can then follow from a place of pleasure and safety. Sustainable productivity and efficiency will follow when employees know that they operate from a place of pleasure and safety.

7. Limitations and Future Research

The authors acknowledge the small sample size. However, the sample constituted relevant positional categories at the organisation under study.

Future research could expand the depth of the data through in-depth interviews and/or focus group sessions across all job levels and categories. A qualitative study on the outcomes of this study can add

much value and richness of experiences on the topic. More advanced quantitative research can be done with more respondent to validate the data instrument used.

Future research could investigate psychological safety which came out as a finding but was not specifically researched in this study.

Acknowledgments

Thank you to Professor P Serumaga-Zake for his inputs and contribution towards the statistical correctness of the data.

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Sustainability Of The Student Housing Market During and Post The Covid-19 Pandemic – A Case Of South Africa

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Keywords

student accommodation, student housing, Covid-19, South African, sustainability.

Abstract

The coronavirus (Covid-19) has destabilised numerous sectors globally since it was discovered in Wuhan City, in China. The real estate sector, particularly the student housing market, was also affected as teaching and learning was either paused or moved to online platforms. This led to student housing facilities being vacant, as student studied from their homes. This study used five independent constructs (housing facilities, health protocols, socialization & additional benefits) to determine their impact on student's behavioural intention to return to or stay in student housing.

The study made use of an online survey to gather 310 usable responses from students in South Africa. A 5-point Likert measurement scale was used. Multiple regression analysis was then conducted to test the study hypotheses.

Findings showed that housing facilities and health protocols had positive and significant influence on behavioural intention, while the socializing and additional benefits constructs showed otherwise. Explanation on the differences was provided in the discussion section.

The study investigated the impact of Covid-19 on student intention to return to student housing, thus influencing the performance of the student housing market. The results showed that students would be willing to return to or stay in student housing if safety and health precautions were observed amidst the Covid-19 pandemic.

1. Introduction

The Coronavirus (Covid-19) is an acute respiratory syndrome, initially discovered in Wuhan City, China in 2019 and has since spread globally (Lenzen et al, 2020; Mhlanga & Moloji, 2020). Consequently, numerous challenges emerged, affecting the lives of people and economies globally (Ihm, Zhang et al, 2021). Among these challenges were strict lockdowns which saw people being constrained in their homes with limited mobility.

In South Africa, 26 March 2020 marked the official declaration of the Covid-19 as a state of disaster, resulting in President Ramaphosa announcing an initial national lockdown of twenty-one days (Motal & Menon, 2020). The lockdown destabilised multiple industries or sectors, including higher education and training (i.e., universities in this case), resulting in teaching and learning being paused at some institutions and moved to online platforms at others (Mhlanga & Moloji, 2020).

For university students, residential housing is an integral part of their learning experience, providing them with a temporary comfortable living environment, privacy, proximity to campus, access to university facilities, and so on (Razak et al, 2017; Amole, 2011; Nurdini & Harun 2011). The Covid-19 lockdown compelled students to move out of such housing environments and go back to their homes. This also mandated the teaching and learning to be completely online, for multiple institutions such as University of Johannesburg (UJ), University of the Witwatersrand (Wits), University of Cape Town (UCT), etc (Conrad et al, 2021). As students moved out of student housing, property owners

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were affected through loss of income, among other things, as some students refused to pay rent for accommodation they did not occupy (Hubble & Bolton, 2021).

As part of providing good learning experience to students, universities are expected to provide students with accommodation, which is considered an essential facility for a healthy learning environment (Ibrahim et al, 2018). From the health perspective, students deserve to be protected against the Covid-19, which is considered a health risk to students (and everyone exposed to it), while living at the student housing facilities (Ibrahim et al., 2018). Among the common health precautions available to student housing to provide against the Covid-19 is continuous sanitization stations, encouraging the use of face masks, observing the social distancing, and avoiding larger groups where possible and necessary (Cubo, 2020). The performance of student housing depends on multiple factors such as student enrolment growth, growth in younger demographic groups (18–24-year-olds), new supply of student housing units, property leasing and marketing strategies, monthly rental, sociability, amenities, size of institution and proximity (Gunn, 2017; Razak et al., 2017).

Extant literature has examined student behavioural intention in relation to student housing amid the Covid-19 pandemic in Europe where findings showed that student intention leaned towards continued stay at their homes during their studies (Barada et al, 2020). Saving from rental and transport expenses were the main reasons influencing students' behavioural intention (Barada et al., 2020). Such studies highlight negative attitude by students towards returning to student housing. There is hardly any, or not at all, evidence of any similar studies can be found in the context of South Africa, which highlights the relevance and significance of the current study for both academic literature and managerial implications.

Extant literature on the living conditions of some students has highlighted the importance of student housing in providing students with better living conditions during their student life (Jain et al, 2020). This is even more so due to the impact of the Covid-19 on the labour market where some people lost their jobs and were relegated to poverty (Jain et al., 2020).

1.1 Research objectives

While extant literature has discussed the impact of Covid-19 on the student housing sector globally, few have investigated the topic from a South African perspective (Lenzen et al, 2020; Cubo, 2020). Among the affected sectors is higher education and training which was relegated into online teaching and learning mode, thus forcing students to study from home (Mhlanga & Moloji, 2020).

While literature on the European student housing market found that students intended to continue studying from home (Mhlanga & Moloji 2020), it remains to be investigated how students in South Africa feel about the matter. The core of the investigation would be the factors affecting students' behavioural intention, amidst the Covid-19 pandemic.

1.1.1 Primary Objectives

This study intends to investigate factors which influence students' intention to return to student housing, during and post the Covid-19 lockdowns.

1.1.2 Secondary Objectives

- To investigate the impact of bedroom facilities on student intention to return to student accommodation during and post Covid-19 lockdown
- To investigate the impact of leisure and study facilities on student intention to return to student accommodation during and post Covid-19 lockdown
- To investigate the impact of health protocols on student intention to return to student accommodation during and post Covid-19 lockdown
- To investigate the impact of socialization on student intention to return to student accommodation during and post Covid-19 lockdown

1.2 Research Questions

- What is the impact of bedroom facilities on student intention to return to student accommodation during and post Covid-19 lockdown?
- What is the impact of leisure and study facilities on student intention to return to student accommodation during and post Covid-19 lockdown?
- What is the impact of health protocols on student intention to return to student accommodation during and post Covid-19 lockdown?
- What is the impact of socialization on student intention to return to student accommodation during and post Covid-19 lockdown?

2. Literature Review

2.1 Background on student accommodation

The concept of student housing dates to 988 A.D. where housing units were provided to students by Arabic universities to serve basic needs of the students such as sleeping, studying and storage of personal items (Popov (2018). Evolution in the sector saw the emergence of housing unit which included bathrooms and kitchen amenities, in England around the year 1441 (Popov, 2018). The importance of student housing across Europe was highlighted in a 2009 interim report (study) as a basic need, contributing towards economic growth, while also offering students an opportunity to choose their tertiary institution without being limited by lack of housing (PUCA & TKK Centre for Urban and Regional Studies, 2009).

Students living in private dwelling (own lodging, sublet, private flat, etc.) in Finland (85%), The Netherlands (83%) and Germany (64%) showed higher satisfaction levels compared to living with parents or relatives and student halls (PUCA & TKK Centre for Urban and Regional Studies, 2009). In Spain, student preferences were almost even between living with facility or relative (87%) and own lodging (86%). In France, the parents or relatives' figure was higher (77%) than the private dwelling (63%). Generally, the 5 top European countries with the highest satisfaction levels of student in student housing were Spain (85%), The Netherlands (77%), Finland (73%), Estonia (68%) and Italy (68%).

In south Africa, the student housing sector has received increasing interest from scholars in the marketing discipline since the early 1990's, fuelled by the increasing enrolment rates and demand exceeding the supply of student housing (Visser & Kisting, 2019). Visser & Kisting (2019) coined the term 'studentification' to describe the movement of university students to residential areas and its impact on cultural, economic, physical, and social change. Globally, there has been a drastic increase in university and college applications where institutions have not been able to cater for all students in terms of on-campus accommodation (Visser & Kisting, 2019).

Extant literature on student housing market in South Africa has shown similar trends to Europe, the United States of America and Australia (Gopal & Van Niekerk, 2019). Similarly, South Africa has seen an increasing demand for student housing compared to current supply (Gopal & Van Niekerk, 2019). Due to recent increases in student enrolment into tertiary institutions, the student housing backlog has increased to 216 000 in 2016 and projected at 400 000 by 2030, according to the Department of Higher Education and Training (DHET) 2016 report (Nhlabathi, 2021; Verhoef, 2020). Tertiary institutions have thus resorted to partnerships with private property organisations to address the challenges (Wilkinson & Jonsson, 2021; Visser & Kisting, 2019). In 2015, student protests over poor living conditions and backlog in student accommodation across South Africa highlighted the importance such facilities towards the performance of students (Nhlabathi, 2021; RDM News Wire, 2015, 21 October; Amole, 2009).

2.2 Covid-19 and student accommodation

The coronavirus disease (Covid-19) has affected countries, industries, and individuals in various sectors since its discovery in 2019 (Zurlo et al, 2020). The Covid-19 lockdown announced in South Africa since the end of March 2020 forced business offering non-essential goods and services (e.g.,

salons, restaurants, bottle stores, etc.), including tertiary institutions, had to mute operations temporarily, thus migrating their teaching and learning from contact to online platforms (Mhlanga & Moloji, 2020; Zurlo et al., 2020; Recio & Colella, 2020). Students experienced various challenges while studying from their homes, including poor concentration, anxiety, financial uncertainty, depression, and stress (Laher et al, 2021). Some universities globally (e.g., University of Glasgow and the University of Manchester) offered refunds to students who vacated their student housing due to the pandemic (Hubble & Bolton, 2021).

Section 2.3. to 2.5 will discuss factors or proposed constructs that affect the students' intention to return to their student accommodation.

2.3 Housing facilities (bedroom and leisure & study room) and behavioural intention

Students' university experience can be positively influenced by the quality of their dwelling conditions (Gopal & Van Niekerk (2019). Students who are happy with their dwelling conditions in a student residence and those who are not happy with their dwelling outside a student accommodation will likely intend to continue and start staying in a student accommodation, respectively (Nhlabathi, 2021). Factors such as location, transportation between campus and the residence, leisure room facilities, safety, and security influence students' choice of their dwelling (Ike et al, 2016). Although the strict Covid-19 lockdowns forced students out of their dwelling (Cairns, 2021), factors such as access to a good living and studying environment, privacy, bigger rooms, comfortable beds, a study desk, wi-fi connection, clean running water, etc., will likely increase student intention to return to or live in a student dwelling when the restrictions become relaxed (Razak et al., 2017). It can also be said that students who have negative perceptions and experience with student accommodation regarding leisure room facilities will be unlikely to intend going back to stay in a student accommodation (Nhlabathi, 2021).

Consequently, students will be satisfied with, and prefer staying in a residence which they believe is well-managed, safe, affordable, and generally concerned with improving their well-being, thus increasing their intention to stay in such a dwelling (Haris et al., 2017).

The above arguments lead to the following hypotheses:

- **H1: Housing** facilities (Bedroom) will positively affect the student's intention to return to student accommodation.
- **H2: Housing** facilities (Leisure and Study Rooms) will positively affect the student's intention to return to student accommodation.

2.4 Health Protocols and behavioural intention

As advised by the World Health Organisation (WHO, 2022) and Department of Higher Education and Training (DHET, 2022), students and all concerned stakeholders (contractors, academic and support staff, visitors, etc.) can protect themselves and others from the Covid-19 by observing seven precautions:

- Getting vaccinated
- Maintaining a distance of at least 1 metre apart
- Proper ventilation
- Wearing of masks
- Regular cleaning of hands with safe water and soap
- Covering coughs and sneezes with a bent elbow
- Staying at home when sick
- Consistent supply and usage of hand sanitisers and disinfectants

If students have positive attitude, beliefs and confident towards the precautions taken by the institutions on the student housing facilities to curb the spread of the Covid-19, their behavioural intention will improve, according to the TPB (Amaro et al, 2019). Students who believe in taking

necessary precautions and feel comfortable are more likely to intent to return to or choose staying in student housing (Ajzen, 1991).

- **H3:** Health protocols will positively affect the student’s intention to return to student accommodation.

2.5 Student socialization and friendships

Extant literature shows that student university experience is not only based on academic performance, but also an opportunity to make new and maintain friendships with other fellow students (socialization) (Ibrahim et al., 2018). This allows the students to experience the new university environment with their peers, especially for students leaving their familiar environments (e.g., home, local school, hometown, etc) for the first time (Robinson et al, 2020). Having a peer to share some personal social issues such as their home living conditions, among others, enhances the behavioural intention to live on campus (Xulu-Gama, 2019). The TPB argues that students with a positive attitude towards socialization, believe that their close allies would condone their socialization and believe that they are able to make friends and socialise while staying at student housing, will more likely intend to live in a student housing (Haris et al., 2017).

- **H4** Socialization will **positively** influence a student’s intention to return to student housing.

2.6 Research model

Figure 1 shows the proposed research model used to show the influence of housing facilities, health protocols, socialization and additional benefits have an influence on student intention to return to their student housing during and beyond the Covid-19 pandemic. This will also try to predict the future performance of the student housing market, based on the student behavioural intentions.

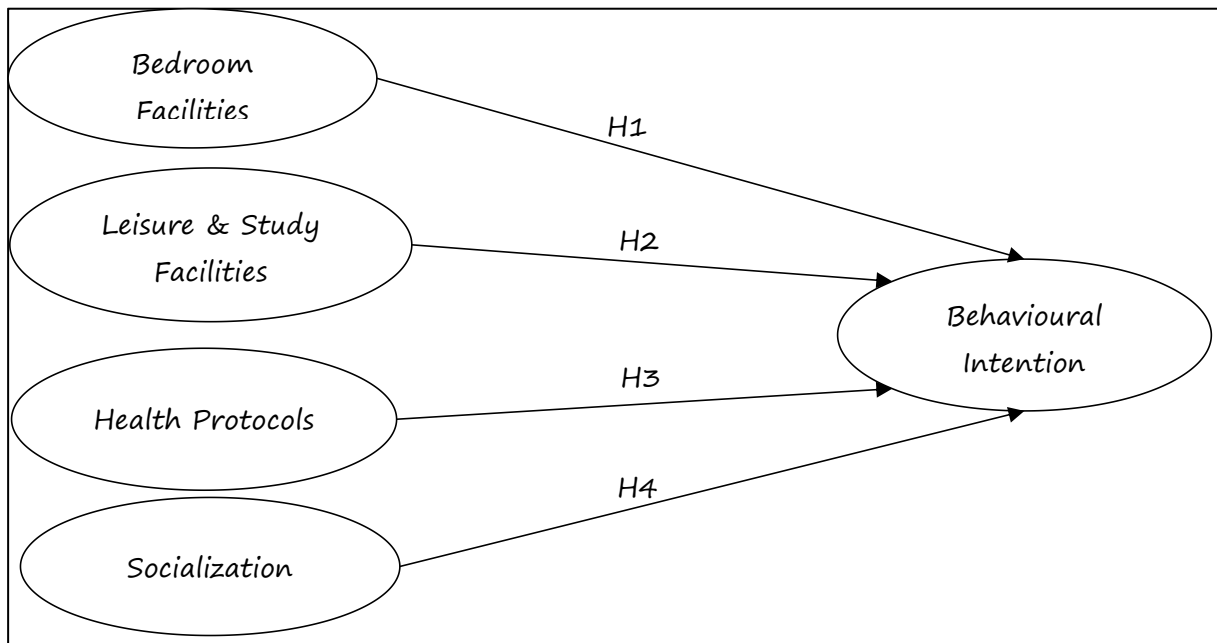


Figure 1: Conceptual model

3. Methods

3.1 Measurement

The process followed in developing the final version of the research instrument are: adapting an existing multi-item measurement scale to measure constructs, using a 5-point Likert scale ranging from 1 ‘strongly disagree’ to 5 ‘strongly agree’. The constructs which made up the measurement instrument were adapted from Amaro, Andreu & Huang (2019) and Nhlabathi (2021). The instrument was reviewed by two senior academics in the marketing field. Subsequently, the instrument was piloted among a sample of 30 respondents who were included through a convenience sampling. The

sample comprised 310 students registered in tertiary institution in South Africa, aged between 18-65 years, who stayed in student housing. Minor corrections were made on the instrument based on the feedback from the pilot study, after which the final data was collected, as suggested by Malhotra (2020).

3.2 Data gathering

A self-administered online survey was used to collect data for the study. The survey was a better option to save time and eliminate any potential errors associated with personal methods (Nayak, 2019). This was also a better option to limit physical contact between fieldworkers and respondents due to the Covid-19 social distancing requirements (Conrad et al., 2021). The data gathered was then exported and analysed on SPSS. A total of three hundred and ten (n=310) valid responses were collected for analysis.

3.3 Data analysis and results

A multiple regression analysis of the data collected was conducted using the Statistical Package for Social Sciences (SPSS) version 28 to determine the influence of the predictor variables (housing facilities – bedroom, housing facilities – leisure and study room, health protocols, socialization) on the outcome variable (behavioural intention). This type of analysis was necessary as there were multiple predictor variables being tested against the outcome variable (Valaskova et al, 2018).

The data analysis approach for this study was regression analysis. When using this method, Cronbach’s alpha values ranges from 0 to 1, with any values above 0.6 being desirable, while some values as low as 0.5 can be acceptable (Malhotra et al., 2020; Cheek, 1986). In instances where the Cronbach’s alpha values are below the ideal 0.6, the mean inter-item correlation becomes the preferred measure for the items, with the acceptable correlation values between 0.2 and 0.4 (Briggs & Cheek, 1986). The extraction and rotation methods were also used for the EFA.

3.3.1 Descriptive statistics

Table 1: The demographic profile of the respondents

Demographic Characteristics	Frequency	Valid Percent
Gender	Male	38%
	Female	54%
	Prefer not to say/Other	8%
Age Group	18-23	55%
	24-29	41%
	30-35	4%
	36-50	0.3%
Employment Status	Student	84%
	Unemployed	4%
	Employed Full-time	4%
	Employed Part-time	7%
	Self-employed	2%

Table 1 shows that descriptive statistics of the demographic formation of the three hundred and ten (n=310) respondents. Of all the respondents, over half were female (54.3%), followed by male (38%) while the remainder (8%) preferred not to disclose the gender identification. In terms of age splits, those who fell within the 18-23 years old category made up 55%, followed by 24-29 (41.3%) while 36+ had the least number (0.3%). In terms of employment status, 84% were students, followed by part-time workers (7%), full-time workers and unemployed had 4% each, while self-employed had 2%.

3.3.2 Reliability testing results

Malhotra (2020) discussed the importance of testing the reliability of scale used in the measurement instrument (i.e., the questionnaire) to ascertain consistency on the outcome from repeated use of the scale. To confirm the scale reliability, the Cronbach's alpha coefficient values are used (Nhlabathi, 2021; Malhotra et al., 2017). Extant literature has shown that Cronbach's alpha values above 0.8 are considered as good; those between 0.6-0.8 as acceptable and those below 0.6 as unacceptable (Wild & Diggines, 2009). Four of the Cronbach's alpha values shown in Table 2 are above the 0.8 threshold, suggesting a good reliability of the measurement scale for the constructs. The remainder of the constructs (Bedroom facilities) had an acceptable Cronbach's alpha value of 0.721. For this study, the Cronbach's alpha values ranged from 0.721 to 0.917, thus confirming construct reliability at varying degrees (Malhotra et al., 2020; Sujati & Gunarhadi, 2020).

Table 2: Cronbach Alpha coefficient of reliability

Constructs	Number of items	Cronbach's alpha
Housing Facilities (Bedroom)	6	0.721
Housing Facilities (Leisure & Study Room)	8	0.840
Socialization	7	0.880
Health Protocols	7	0.872
Behavioural Intention	6	0.917

3.3.3 Multiple Regression (Model testing)

Regression analysis refers to a flexible technique used in the analysis of associative relationships between one or more independent variables (factors) and a dependent variable (outcome) (Malhotra, 2020). Bivariate (linear) and multiple regression are the two forms of this analysis (Malhotra, et al., 2017). The former (bivariate) looks at the relationship between one independent and one dependent variables, while the latter (multiple regression) looks at multiple predictor variables leading to an outcome (Malhotra, 2020). For this study, the multiple regression technique was utilised as the conceptual model has four independent variables predicting one outcome variable.

When conducting a multiple regression analysis, the threshold for the p value is 0.05, where constructs with values above the threshold lead to the rejection of the hypothesised relationship (Malhotra, 2020). Table 3 shows multiple regression analysis results which can be summarised as follows: housing facilities (bedroom) ($\beta = 0.024$), housing facilities (leisure and study room) ($\beta = 0.249$), health protocols ($\beta = -0.163$) and socialization ($\beta = 0.050$). The results show that all constructs except, health protocols, have positive influence on the intention to return or stay in a student accommodation.

Based on the above analysis, the Housing Facilities (Bedroom Facilities) construct showed positive but insignificant influence on intention to return to or stay at a student housing ($\beta = 0.024$; $p \geq 0.05$), thus rejecting H1. The Housing Facilities (Leisure and Study Facilities) construct was positive and significant ($\beta = 0.249$; $p \leq 0.05$), thus confirming H2. Health Protocols ($\beta = -0.163$; $p = 0.012$) showed a significant influence but in an opposite direction, suggesting that for every 1-unit increase in the predictor variable, there will be an equal but opposite move, thus confirming H3 based on the significance value. Socialization also showed a moderately positive but insignificant influence towards students' intention to return or stay at a student housing ($\beta = 0.05$; $p \geq 0.05$), thus rejecting H4.

Table 3: Multiple Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.537	.475		5.338	<,001
	Health Prot	-.238	.094	-.163	-2.535	.012
	Bed Fac	.039	.096	.024	.407	.684
	Leisure StuFac	.358	.097	.249	3.698	<,001
	Socialisation	.065	.083	.050	.786	.433

a. Dependent Variable: Behavioural Int

*p<0.05; **p<0.01; ***p<0.001, ^{ns} Not significant (p>0.05)

Hypotheses	Test Results
H1: Housing facilities (Bedroom) will positively affect the student’s intention to return to student accommodation.	Not supported
H2: Housing facilities (Leisure and Study Rooms) will positively affect the student’s intention to return to student accommodation.	Supported
H3: Health protocols will positively affect the student’s intention to return to student accommodation.	Supported
H4: Socialization will positively influence a student’s intention to return to student housing.	Not Supported

4. Discussion, Implications, Limitations and Recommendations

4.1 Discussion and implications of the study

This study sought to investigate the impact of the COVID-19 pandemic on the performance of the student housing market in South Africa. Section 4 discussed the methods used for data gathering and analysis, while also presenting the results of the analyses.

Based on the results, the housing facilities (bedroom) construct showed positive but insignificant influence on students’ behavioural intention towards returning or staying at a student housing during or post the Covid-19 pandemic. These findings were supported by a Haris et al. (2017) study which found a positive relationship between housing facilities (bed, study desk, electricity, running water) and students’ behaviour intention. Haris et al. (2017) study was based on the theory of reasoned action (TRA). (Simpeh & Adisa, 2021; Razak et al., 2017).

Findings on health protocols indicated that this construct is important in determining student intention to return to student accommodation, based on its significance level value (p<0.05). Thus, students would be willing to stay in student housing provided that such facilities follow the mandated covid-19 protocols, as advised by WHO (2022) and DHET (2022), as discussed in section 2.4. The respondents indicated that they intended staying at student housing provided that all necessary protocols are observed.

Findings on socialization disputed findings from extant literature which stated that socialisation was important in student decision between staying in a student housing or not (Robinson et al, 2020; Xulu-Gama, 2019; Ibrahim et al., 2018). For the current study, socialisation showed some positive but insignificant influence on the student’s intention to stay in student housing. This suggests that as much as socialization is important to students during their academic tenure at university, their perceived academic performance does not depend on socialization with fellow students, as previously argued in extant literature (Robinson et al, 2020; Xulu-Gama, 2019; Ibrahim et al., 2018). Thus, this attribute is not important when deciding on finding a place to stay for students. Since the survey was conducted during the covid-19 pandemic, it could be that students do not want to mix and socialise with their peers due to fear of contracting covid-19.

The findings on the housing facilities (leisure and study rooms) suggested that students value the presence and accessibility of study and leisure rooms provided by their student housing. This could be

because the Covid-19 pandemic constrained students in their homes, which may have not had the desired leisure and study spaces for students (Razak et al., 2017).

4.2 Implications for theory and managers

The implications of this study dwell around the importance of understanding the various aspects of the covid-19 pandemic in relation to the student housing market. From the findings, student housing factors such as housing facilities (leisure and study room facilities) and socialization showed positive influence on student intended behaviour. This is also important because the context of the study was the Covid-19 pandemic, expanding the use of these factors in a relatively new environment.

For student housing owners, managers and tertiary institutions, it is important who need to promote these two factors, while also working on strategies to address student uncertainties brought by Covid-19. This could be done by reassuring students that the accommodation is still safe and suitable for their well-being, physically, mentally, socially, health wise, and so on. The Covid-19 protocols should also be adhered to as closely as possible (WHO, 2022; DHET, 2022).

4.3 Limitations and recommendations for further studies

As the study was done during the Covid-19 pandemic, there were limitations on the data collection methods available, hence the use of the online self-administered survey method. The study was also limited to respondents with access to the internet and any device with access to the internet. Sampling was done through convenience method, thus including only those respondents who volunteered to participate in the study. Another limitation was that the study was limited to students within the Gauteng province as that was part of the screening questions.

Future studies can build on the limitations of the current study by looking at students from other provinces, using different methods for data collection, investigating other factors which influence students' behavioural intention towards student housing. A comparative study could also help understand the relevance of health protocols and housing facilities (bedroom facilities) factors prior and post Covid-19 to determine the impact of the pandemic on student preferences and choices prior, during and post the pandemic. Further comparative studies can be conducted between students who stayed in university-owned and non-university owned student housing.

5. Conclusion

This study investigated factors that will influence the sustainability of the student housing market in South Africa based on the impact of the Covid-19 global pandemic. The approach was to look at factors that affect student intention to return to such student housing, which ultimately will influence the performance of the sector. Four factors (bedroom facilities, leisure & study facilities, health protocols and socialisation) were investigated, resulting in four hypotheses. Two constructs (Health protocols and Leisure & Study Room facilities) showed positive but varying influence while the other two (Bedroom Facilities and Socialization) shown no significance in influencing student intention towards returning or staying at a student accommodation.

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Pivoting The Enterprising Women Programme From a Face-To-Face To Digitised Model During COVID-19: An Activity Systems Approach

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Keywords

Digitised/online, Engelström's Activity Systems Theory, face-to-face, female entrepreneurs, five principles of activity systems,

Abstract

Purpose: This paper reflects on the perspectives of the facilitators of the Enterprising Women Programme at the North-West University, South Africa when pivoting its female entrepreneurship development programme from a face-to-face to digital modality during the Covid-19 pandemic. The challenges and lessons learnt when offering the programme in its revised modality, whilst continuing to offer deep value and completing the programme successfully, are considered.

Methodology: Engelström's Third Generation Activity System and the five principles of activity theory were applied to analyse the facilitators' experiences and present the findings.

Findings: The researchers (EWP facilitators) reflected on the transition from face-to-face to online by (i) critically looking at each of the two systems (face-to-face and digitised modalities), and (ii) analysing their reflections using the five principles of activity theory (Engelström, 2001). Whilst numerous challenges were experienced, the enablers were sufficient to complete the programme.

Implications: The analysis identified lessons learnt, which not only provides valuable insight into enhancing the digital modality of the Enterprising Women Programme but could also be utilised by other facilitators when designing online learning programmes. The analysis offers valuable insight into the unique South African context of female entrepreneurs.

Originality: The study contributes to the body of knowledge by providing insights into the challenges and enablers when designing digitised learning programmes and is specifically enlightening in the context of South Africa.

1. Introduction

South Africa faces unique economic challenges as a result of its high unemployment rate and low economic growth, with the national unemployment rate pegged at 24.69% in 2010 and 28.18% in 2019 (StatisticsSA, 2020, p. 8). Entrepreneurship has become a topic of interest for role players campaigning for increased and sustained economic development and growth, particularly in developing countries where poverty and high unemployment rates are rife, but also in developed economies where entrepreneurship is considered to be a driver for accelerated economic growth (Ambrish, 2014, p. 226; Phillips et al., 2014, p. 86). As such, entrepreneurship and entrepreneurial

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education have become a particular topic of interest in the last ten years, particularly as a mechanism for alleviating unemployment (Bullough et al., 2015, p. 250).

To contribute toward the economic growth and employability in South Africa, the North-West University (NWU) established an enterprise development centre - The Bridging Business and Education Hub of Innovative Ventures and Expertise, known as the bhive Enterprise Development Centre (bhive EDC) — in 2011 at its Vanderbijlpark Campus, with financial support from the Netherlands Organisation for Internationalisation in Education (NUFFIC) via the Netherlands Initiative for Capacity Development in Higher Education (NICHE). The bhive EDC has made it its mission to develop entrepreneurial propensity and capacity amongst its three focus areas, namely students, females and the local community within the NWU's catchment areas, with a specific niche focus on start-up and early-stage female entrepreneurs.

Consequently, the Enterprising Women Programme (EWP) was initiated in 2013 to provide business support services to women who want to start their businesses. The EWP is a six-month programme, geared toward providing business support services to women who wish to establish a business. Participants are taken through an in-depth programme to explore ideas, develop a business model and put the wheels in motion to initiate the business. Programme participants become part of a peer network of women embarking on an entrepreneurial journey, where they can share experiences and learn from one another and other successful female entrepreneurs by being exposed to structured learning through workshops and group-centred learning. Given the success of its pilot round, the EWP was accredited as an NWU Short Learning Programme (SLP) in 2014, with the programme hosted across the NWU's catchment areas surrounding its three campuses in Vanderbijlpark, Mahikeng and Potchefstroom.

Over the years, interactions with the participating female entrepreneurs revealed that they face distinct challenges, including inequality in terms of how they are viewed and treated when running their businesses. In addition, they have a specific need for, amongst other things, entrepreneurial training and financial support. This correlates with scholars' findings that female entrepreneurs experience unique hindrances, limitations and struggles (Meyer & Landsberg, 2015, p. 3868), especially with establishing and sustaining a business (Botha et al., 2007, pp. 163-164). South Africa's history of racial- and gender inequality, coupled with the unequal distribution of resources between different groups, as well as the difference in the female to male entrepreneurial ratio, resulted in women — specifically women of colour — having virtually no or very few opportunities to start their businesses (Chinomona & Maziriri, 2015, p. 837; Herrington et al., 2017, pp. 13,90). Furthermore, the Global Entrepreneurship Monitor (GEM) Report demonstrates that female entrepreneurs have a greater need for assistance in developing self-confidence and self-esteem than their male counterparts, whilst it has also been found that the backlog in entrepreneurship development in South Africa could be attributed to insufficient entrepreneurial education (Botha et al., 2007, pp. 163-164; Herrington et al., 2017, pp. 13,90).

As a means to address these challenges, the EWP was structured as a face-to-face modality, incorporating workshops with group- and individual work, with practical application through assignments to validate the market, explore financial feasibility and develop a business model, ready for implementation. Successful participants are awarded an SLP Certificate by the NWU and may be invited to join the bhive EDC's incubation programme to embark on the next business building phase of operationalising the business and developing it to its full commercial potential.

Given that the programme was offered in a largely face-to-face modality, with some web-enhanced functionality through emails and WhatsApp, the advent of the Covid-19 pandemic brought about programme delivery challenges, which required a revised delivery modality. Subsequently, a new delivery model, which incorporates a strong digitised component, was launched in June 2020 to support female small business owners and aspirant entrepreneurs who need support in navigating the current challenging economic conditions.

This paper leverages the Activity Systems Theory as an analytical tool to pinpoint the challenges and lessons learnt in pivoting from a face-to-face to digitised modality, whilst aiming to continue to offer deep value and complete the EWP successfully.

2. Literature Review and theoretical background

2.1. Activity systems theory

The Activity Systems Theory is rooted in the work of Lev Vygotsky’s First Generation Activity Theory, who worked in developmental psychology and was the founder of the Soviet cultural-historical school of psychology, Leont’ev’s Second Generation Activity Theory, which expanded the work of Vygotsky to include human activity systems, and Engelström Third Generation Activity Theory, who adapted Leont’ev’s activity theory by including an activity system analysis (Cole et al., 2006; Higgins, 2003; Kaptelinin, 2006).

Vygotsky believed that humans develop by interacting with others within their environments and then within themselves (Kaptelinin, 2006). He had two fundamental philosophies: “*man is not only the product of his environment, but he is also an active agent in creating the environment and the main social experience determines the structure of human conscious activity*” (Luria, 1979). Vygotsky’s psychological approach included three fundamental aspects, namely cultural, historical and instrumental psychology. The instrumental aspect of his approach refers to the method in which people (in this case, EWP participants) respond and adapt to the stimuli (in this case, face-to-face or online interactive workshops) within their environments, and how their ideas expand as they learn more about entrepreneurship. Cultural aspects refer to the structured way in which society (in this case, the NWU’s bhive EDC) organises tasks to attain objectives (herein, the successful completion of the EWP). The historical aspects link with the cultural aspects and include the instruments (herein the tools utilised in face-to-face and online workshops), which are used by men (in this case, EWP facilitators) to master their environment (Cole et al., 2006; Luria, 1979).

Leont’ev’s Second Generation Activity Theory added the dimension of a human activity system. He argued that the activity of human beings should be goal-directed, adaptable and manifest interaction between the subjects (EWP participants) with its objects (the successful completion of the EWP). Leont’ev believes psychological studies must consist of three connected aspects, namely placing the subjects (EWP participants) in the objective reality and altering this reality in the structure of subjectivity (the transition from face-to-face to online facilitation). The analysis must focus on “conscious and unconscious mental phenomena, and the relationship between mind and activity” (Kaptelinin, 2006).

Engelström adapted Leont’ev’s activity theory by including the activity system analysis, which can accommodate more than one activity system to find solutions to specific research questions (Yamagata-Lynch & Haudenschild, 2009). This model includes the social aspects within the system to explain and comprehend the relationship amongst the elements relating to the study, particularly in research relating to education (Robertson, 2008). Figure 1 illustrates Engelström’s Third Generation Activity Theory, with activity systems, which was used as an analytical tool to pinpoint the challenges and lessons learnt in pivoting from a face-to-face to digitised modality, whilst aiming to continue to offer deep value and completing the EWP successfully.

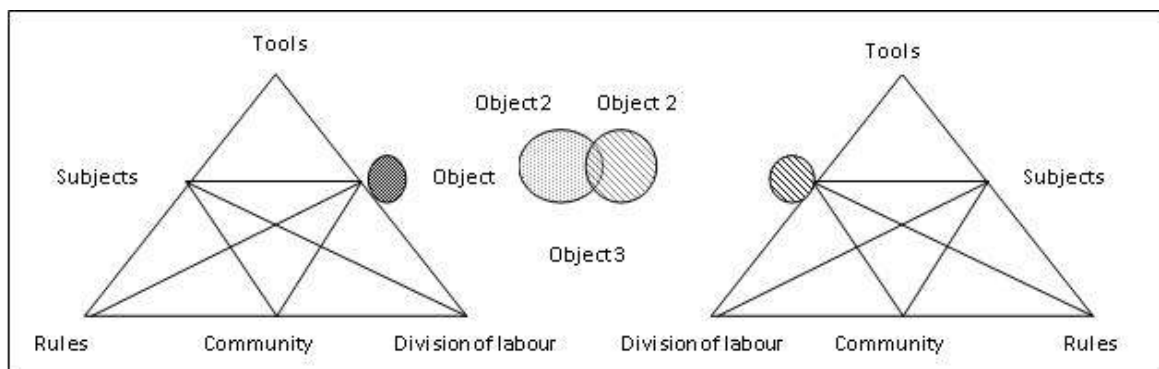
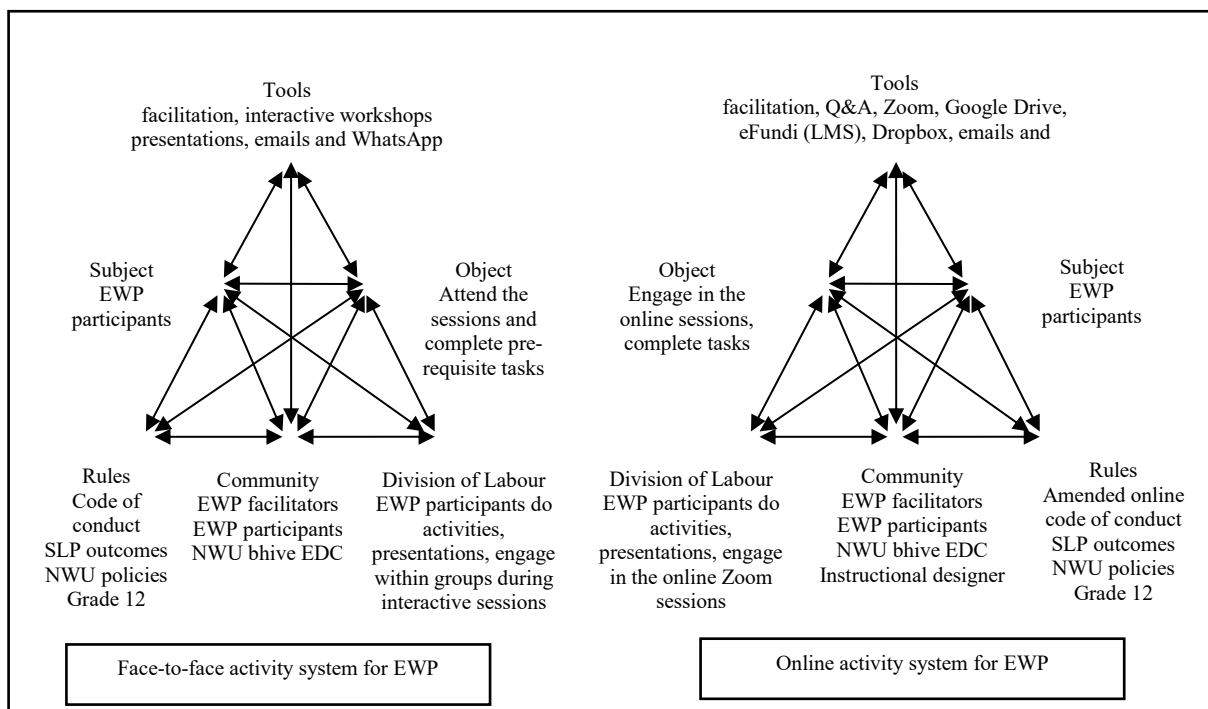


Figure 1: Third Generation Activity Theory (Engelström, 2001)

The third-generation system can constitute a minimum of two interacting activity systems (as demonstrated in Figure 1, refer to figure 2 for elements in the activity system to better comprehend Figure 1). This model includes a common object-orientated activity that moves through the activity systems, whereby each activity system has its outcomes and aims but is connected with the object-orientation of the activity (Engelström, 2001). The relationship amongst the elements in the activity system relates to a community (herein, the NWU's bhive EDC, EWP facilitators and EWP participants) of knowledge-sharing, which operates widely across elements of the education system (Russell, 1997). The activity theory lens is the activity system, constituted of people (EWP participants and facilitators) with a common goal (completing the EWP) using tools (face-to-face or online tools) to achieve outcomes (a sustainable EWP for the NWU's bhive EDC) (Engelström, 1987; Kain & Wardle, 2011). Two activity systems are explored in this paper, namely (a) a face-to-face activity system, and (b) an online activity system (as demonstrated in Figure 2).

An activity system focusses fundamentally on the subjects and the objects, and how these function within the activity. Participants (subjects) must complete the activities within the EWP so that they may start or continue with a sustainable business model (Russell, 1997). These female participants develop their knowledge and skills, including the progression of the business idea to the commencement and management of the business. The objects, which can be either physical- or abstract elements, stimulate and drive the activity. Within the context of this study, the object was subdivided into the objectives and the outcomes of the EWP. The subject for the face-to-face and online activity system remains the same, namely the EWP participants. Figure 2 demonstrates the face-to-face and online activity system for the EWP:



progressive development, where the subjects' activity (how the EWP participants engage and participate) leads to attaining the objects within each of the two systems. The more these EWP participants engage face-to-face or online, the more they will be able to complete the activities (Kaptelinin, 2006).

At the base of the triangle (as per Figure 2), rules, community and division of labour constitute the socio-historical aspects of the mediated action (Engelström, 2001). The rules are the set-conditions, which stipulate how the individual has to perform (Hashim & Jones, 2007). In this context, the rules

refer to the SLP outcomes, code of conduct (amended for online engagement), and NWU’s regulatory framework, which guides the subject to attain the object. The community encompasses EWP participants, EWP facilitators, NWU’s bhive EDC and an instructional designer for the digitised system. Each role player within the community has to complete certain tasks to ensure that EWP participants complete the programme within the six months and that the bhive EDC delivers a sustainable EWP, irrespective of its mode of delivery (face-to-face or online).

3. Research Methodology

To address the research question — What were the challenges and lessons learnt in pivoting from a face-to-face to a digitised modality, whilst continuing to offer deep value and complete the EWP successfully? — a qualitative reflective process (Merriam, 2009) was undertaken to ascertain what the challenges, enablers and lessons learnt were, when transitioning from the face-to-face to the digitised modality.

4. Results and Findings

Following the conclusion of a part face-to-face selection process (before the lockdown in South Africa) and a subsequent online selection process, the digitised EWP was initiated in June 2020 with 38 participants. In addition to 14 workshops, three question and answer sessions were offered via Zoom, with each session hosted by two facilitators. Throughout the 2020-round of the programme, the researchers (EWP facilitators) reflected (using focus groups and the review of the existing process) on the transition from face-to-face to online by (i) critically looking at each of the two systems, and (ii) analysing their reflections using the five principles of activity theory (Engelström, 2001). To ensure trustworthiness of the qualitative data an independent peer reviewer assisted with the data analyses. Table 1 illustrates the pivoting from face-to-face to digitised modality activity systems, according to the elements of an activity system.

Table 1: Face-to-face and digitised activity systems

ELEMENTS OF ACTIVITY SYSTEMS	ACTIVITY SYSTEMS: FACE-TO-FACE VERSUS ONLINE	
	Face-to-face activity system	Digitised activity system
TOOLS	<ul style="list-style-type: none"> ▫ 14 Workshops ▫ In-workshop support to address questions ▫ 1 Facilitator per workshop ▫ PowerPoint presentations and videos for skills transfer during workshops ▫ Group work and individual practical application ▫ Community of Practise, with group activities during workshops ▫ Hard-copy and digital handouts shared via email ▫ Hard-copy submission of application documents ▫ Emailing of assignments ▫ WhatsApp group, emails 	<ul style="list-style-type: none"> ▫ 14 Workshops ▫ 3 Question and answers sessions ▫ 2 Facilitators per online workshop ▫ PowerPoint presentations for workshops and question and answer sessions for skills transfer via Zoom, with videos shared via Google Drive and online links ▫ Group work and individual practical application, utilising Zoom breakout rooms ▫ Community of Practise, utilising Zoom breakouts rooms, for group activities ▫ Digital handouts, accessible via Google Drive ▫ Uploading of application documents and assignments on a digital platform ▫ Google Drive, eFundi platform, WhatsApp group, emails
SUBJECT	EWP participants	EWP participants
COMMUNITY	Facilitators EWP participants NWU’s bhive EDC	Facilitators EWP participants NWU’s bhive EDC

ELEMENTS OF ACTIVITY SYSTEMS	ACTIVITY SYSTEMS: FACE-TO-FACE VERSUS ONLINE	
	Face-to-face activity system	Digitised activity system
		Instructional designer for eFund platform
DIVISION OF LABOUR	<p>Facilitators</p> <ul style="list-style-type: none"> ▫ Programme developer ▫ Annual programme enhancements ▫ Presentation of workshops ▫ NWU academic to present certain workshops ▫ Evaluation Panel members, incorporating EWP facilitators, NWU academics and industry experts ▫ Programme administration <p>EWP participants</p> <ul style="list-style-type: none"> ▫ Attend workshops ▫ Complete, upload and present assignments to Evaluation Panel ▫ Peer support, networking and sharing of information via WhatsApp 	<p>Facilitators</p> <ul style="list-style-type: none"> ▫ Programme developer ▫ Adjustments to convert EWP to a fully online modality ▫ Presentation of workshops and facilitation of question and answer sessions ▫ NWU academics to present certain workshops ▫ Evaluation Panel members, incorporating EWP facilitators, NWU academics and industry experts ▫ Programme administration <p>EWP participants</p> <ul style="list-style-type: none"> ▫ Attend workshops ▫ Complete and present assignments to Evaluation Panel ▫ Peer support, networking and sharing of information via WhatsApp
OUTCOMES AND OBJECTIVES	<p>Top three outcomes:</p> <ul style="list-style-type: none"> ▫ Presentation of Customer Discovery research and submission of a written report. ▫ Presentation of Financial Feasibility assignment and submission of a written report. ▫ Presentation of Expanded Business model and submission of a detailed report. <p>Objectives:</p> <ul style="list-style-type: none"> ▫ Successful completion of the EWP 	<p>Top three outcomes:</p> <ul style="list-style-type: none"> ▫ Presentation of Customer Discovery research and submission of a written report. ▫ Presentation of Financial Feasibility assignment and submission of a written report. ▫ Presentation of Expanded Business model and submission of a detailed report. <p>Objectives:</p> <ul style="list-style-type: none"> ▫ Successful completion of the EWP
RULES	<p>NWU's regulatory framework</p> <p>Short Learning Programme prerequisites</p> <ul style="list-style-type: none"> ▫ Grade 12, computer and English language literacy ▫ R1 500 refundable commitment deposit ▫ Signature of commitment undertaking ▫ 90% attendance of workshops ▫ Prompt response to communications, as required ▫ Completion and presentation of customer discovery assignment, according to guidelines ▫ Completion and presentation of financial feasibility assignment, according to guidelines 	<p>NWU's regulatory framework</p> <p>Short Learning Programme prerequisites</p> <ul style="list-style-type: none"> ▫ Grade 12, computer and English language literacy ▫ R1 500 fee payable upon programme acceptance ▫ Signature of Short Learning Programme rules ▫ 90% attendance of workshops ▫ Prompt response to communications, as required ▫ Completion and presentation of customer discovery assignment, according to guidelines ▫ Completion and presentation of financial feasibility assignment, according to guidelines

ELEMENTS OF ACTIVITY SYSTEMS	ACTIVITY SYSTEMS: FACE-TO-FACE VERSUS ONLINE	
	Face-to-face activity system	Digitised activity system
	<ul style="list-style-type: none"> ▫ Completion and presentation of expanded business model assignment, according to guidelines, with a positive evaluation panel assessment 	<ul style="list-style-type: none"> ▫ Completion and presentation of expanded business model assignment, according to guidelines, with a positive evaluation panel assessment

As depicted, although the elements of the activity system remained largely constant upon pivoting from the face-to-face mode to the digitised modality, some additional tools and activities were deployed to deliver on the programme outcomes and objectives, in addition to which an increase in labour for the programme facilitators can be observed.

4.1. Discussion: five principles of activity system

The following section discusses the reflections of the EWP facilitators, according to the five principles of activity theory.

The *first principle* is that each object-directed activity system (face-to-face or digital) functions in a network with other activity systems, but still individually functions as a unit of analysis. The goal-directed activities (primary unit of analysis) of the EWP participants and facilitators and their actions in the activity system are self-directed, but a secondary unit of analysis is perceived against the background of the complete activity system (Engelström & Sannino, 2010). As seen in Table 1, each of the role players in the community had to perform certain tasks to ensure that there was a smooth transition from face-to-face to a digital modality. The NWU’s bhive EDC provided the support and funding to ensure that the current cohort of EWP participants will be able to complete the SLP, whilst the facilitators transitioned the programme from face-to-face to a digitised modality, the instructional designers created digital platforms and support was provided to EWP participants to engage online and complete their assignments.

The *second principle* is that an activity system consists of a community (EWP participants, EWP facilitators, NWU bhive EDC and an instructional designer for the digitised mode of delivery) with various viewpoints, practices and interests. Each member of the community has their unique history of where they come from and what role they play within the activity. The division of labour in the activity allows for each member of the community to contribute to the activity, which “forms multiple layers and strands of history fixed in its tools and rules” (Leendertz, 2013). Many of the EWP participants did not have consistent access to the internet, nor did they have advanced digital skills. With the transition to a digitised modality, all participants and the facilitators needed to have adequate internet access, as well as the digital skills to function in the digitised environment. Table 2 summarises the actions of each of the role players within the community.

Table 2: Actions of the community within the EWP digitised activity system

bhive EDC Actions	Instructional Designer Actions	EWP Facilitator Actions	EWP Participant Actions
Ensured sufficient funding for the digitised programme.	Selected appropriate platforms and designed the digitised learning interface (eFundi, Google Drive, Zoom).	Converted EWP to a fully digitised modality and created additional learning resources for EWP participants.	Attended online workshops and question and answer sessions. Viewed videos before workshops.
Invested in an instructional designer to ensure that the	Monitored participants’ interactions, participation and the usability of tools.	Presentation of workshops and facilitation of question	Completed, uploaded and presented assignments to Evaluation Panel.

appropriate digital platforms were selected to best support EWP participants.		and answer sessions and secured NWU academics to present certain workshops.	
Invested in additional facilitators to assist with question and answer sessions and to support technology management.	Provided feedback to the facilitators.	Uploaded handouts, videos and other information on Google Drive and eFundi and provided support to participants via email and WhatsApp.	Peer support, networking and sharing of information via WhatsApp.

Historicity is the *third principle* in activity theory, as an activity system is shaped and altered. The EWP should be evaluated continuously to ensure that limitations, either within the EWP or bhive EDC, are addressed and new additions are incorporated timeously, whether in the programme, policies or the mode of delivery. Shortcomings within the bhive EDC and the EWP upon pivoting to the digitised modality largely centred around the mode of delivery and the corresponding lack of an appropriate online platform (which was overcome by using a combination of eFundi and other mechanisms, such as Zoom and Google Drive) as well as unfamiliarity with some of these digital platforms (which was addressed by soliciting support from the instructional designer and undertaking training, both formalised and through self-exploration).

The *fourth principle* is the fundamental role of contradictions (the challenges within the bhive EDC) accumulated over a long period within and between activity systems. Certain contradictions (challenges) create conflict and instabilities within the activity but also groundbreaking endeavours (enablers) to change the activity. Contradictions in the activity systems have two purposes, namely to identify discrepancies or shortcomings (challenges) and acknowledge the value of the intervention (transition from face-to-face to online) and improvement (to ensure the sustainability of the EWP). (Barab et al., 2004). Typical challenges experienced with the face-to-face modality included transportation difficulties for participants', whilst they also had to juggle the conflicting demands of work, family and demands posed by the EWP. Historically, a key challenge for the bhive EDC and programme facilitators was time and budget constraints, as facilitators were required to regularly travel between the three NWU campuses to host the face-to-face workshops for each of the respective rounds of the programme (two in Vanderbijlpark, one in Mahikeng and one in Potchefstroom). In addition, offering more than one annual round of the programme in different locations often resulted in scheduling conflicts, which required an innovative and adaptive approach to manage this particular challenge.

Naturally, the digitised modality posed its own, unique set of enablers and challenges, as depicted in Table 3.

Table 3: Enablers and challenges of the digitised modality

PIVOTING FROM FACE-TO-FACE TO ONLINE: A REFLECTIVE ANALYSIS		
bhive EDC	EWP Facilitators	EWP Participants
ENABLERS		
Institutional support and funding allocation	Resource and knowledge capacity to offer EWP	Desire and commitment to complete EWP
Commitment to catalyse and support female entrepreneurship	Open-mindedness to continuously review and make programme adjustments, as necessitated	Strong motivation to learn and willingness to engage, accept guidance and collaborate
Enabling culture	Access to technology tools and consistent bandwidth	Computer and English language literacy
Adequate NWU role players to facilitate	Deep industry knowledge	Access to technology tools and

PIVOTING FROM FACE-TO-FACE TO ONLINE: A REFLECTIVE ANALYSIS		
bhive EDC	EWP Facilitators	EWP Participants
workshops, sit on evaluation panels and offer support		bandwidth
CHALLENGES		
NWU budget limitations	Technology platform restrictions, such as the inability to stream videos via Zoom, as well as eFundi space restrictions	Discomfort with technology platforms, such as Zoom and eFundi
Inadequate understanding of the real importance of entrepreneurship by other, non-economic and management science faculties	Workshop management - limited interaction during online sessions makes it difficult to gauge participants' understanding and focus for the full duration of sessions	Varying and fluctuating bandwidth access and power outages
Commitment by some NWU academics to play a role in the programme, but inadequate numbers and consistency	Fully interactive in-session group work is limited by the online delivery mechanism	Varying intellectual capacity and grasp of content, which necessitates individual support, in some instances
	Leaner controls, as more resources need to be managed and closer participant monitoring is required	Limited interaction as a result of the online platform makes it difficult to identify problems timeously, to request in-workshop assistance
	Online platform- and time capacity limitations to assist participants individually	Personal challenges and conflicting work-home-programme demands
	Intense input is required to manage participants' technology challenges	
	Increased administration coupled with a digitised delivery model	

Expansive transformation is the *fifth principle* of activity theory, which articulates that the community within the activity start to question and move from the traditional way of engaging. In the context of this study, the EWP community were required to work together to transition the programme from the face-to-face to digitised modality and to ensure that the EWP is completed, whilst the community adopt the potential of the new activity (Engelström, 2001). An expansive transformation took place, with NWU making an instructional designer available to assist with the design of the online platform and to offer the requisite training (both to facilitators and participants), whilst EWP facilitators collaborated closely to co-host sessions and support one another, offer additional technology support and demonstrating leniency to participants, with EWP participants assisting each other to access and upload documentation.

5. Managerial Implications

A diverse group of stakeholders such as public and private universities, private suppliers of entrepreneurial education programmes, business incubators and consultants should take note of the implications of this study.

A large percentage of the EWP participants have very limited computer and technology skills. Having a group of participants with computer and technology skills ranging from very basic to advanced leads to frustration for all participants as some battle to keep up and others are frustrated with the slow pace of the participants with low computer skills. This may be a more general trend that impacts other entrepreneurial education programmes, specifically for start-up entrepreneurs. Stakeholders should consider establishing the programme applicants' computer and technology skills levels as part of the application process. Knowing the computer and technology skills level gives stakeholders the option to group applicants with similar skills levels together and to include basic computer skills and basic Microsoft office skills in their entrepreneurial education programmes.

6. Limitations of the study

This study focussed on the EWP and its role-players only. The findings of the study cannot be applied to all entrepreneurial education programmes.

7. Conclusion: Lessons Learnt

Key lessons learnt with the implementation of the digitised modality included the realisation that, to a large degree, programme participants are “Digital Ancients”, not necessarily “Digital Natives”, which requires greater flexibility to navigate South Africa’s unique technology context. In addition, programme facilitators recognised that a definitive boundary is required between programme management and participants in terms of technology access and problem resolution, to alleviate the demands of offering a programme of deep value, whilst also having to resolve participants’ technology challenges and stumbling blocks. Ultimately, greater process automation would need to be pursued, to fully leverage the digitised programme’s potential of increasing its footprint across South Africa and, in time, the African continent.

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The Socio-Economic Implications of Covid-19: A Mini Systematic Review

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Keywords

COVID-19; Socio-economic; Systematic; Cyclical, Lockdown;

Abstract

The impact of COVID-19 is multidimensional and significantly affects the socio-economic dimensions of the world community. A largely related literature reveals that living community-wide results in immediate risk to people's social relationships, as well as economic decline. Besides, the relationship between the various socio-economic aspects associated with COVID-19 is not clear. Therefore, this paper is aimed to systematically review the socio-economic aspects of COVID-19 by integrating and synthesizing the existing works to build a unified framework. Besides, the study uncovers a specific relationship of a comprehensive and dynamic socio-economic factors. Moreover, it's attempted to pinpoint the specific areas of investigation in the subject matter for future studies. From the review, a cyclical model that reveals and integrates the varieties of social and economic factors was developed. It revealed that the strict lockdown measures has contributed for reducing the spread of virus, while it extremely affects the socioeconomic dimensions. Further, the factors such as economic unemployment, household's income, financial markets, and psychological distress has been identified and discussed. Finally, the future research investigation should also give consideration to the forgotten aspects such as technological and politico-legal issues to build an integrated framework of COVID-19.

1. Introduction

The COVID-19 pandemic is receiving intensive interest at all levels: political, economic, social, scientific, and in health care (Matias et al., 2020). Besides medical and technological challenges, societal, economic, psychological, and philosophical difficulties should be addressed in order to better approach the global crises (Rudnick, 2020). That is, the impact of this pandemic is not limited to the health crisis, but also with societal and economic crisis. There are a lot of socioeconomic crises that affects the human behavior (You et al., 2020). This is related with key important indices such as age, sex, ethnicity, education, socio-economic status, and geographic location is particularly pertinent (Yaya et al., 2020). For instance, the socio-economic status (SES) indicated by income, education or occupation plays an important role in health outcomes (Yaya et al., 2020). Besides, the socio-cultural activities are restricted and the economy of countries has extremely impacted in the sectors such as tourism, trade, and transportation (Zeren & Hizarci, 2020). Moreover, the financial consequences related with unemployment and recession may reduce the satisfactions from the businesses and economies of countries (Sibley et al., 2020).

The current Coronavirus pandemic disaster has led to escalating emotional, mental health, and economic issues with significant consequences, and this presents a serious challenge to reopening and recovery initiatives (Zhong et al., 2020). Related to the lockdown policy, it will have an impact on the economic side (Samuel et al., 2020). Besides, the social implication has also a paramount importance. The intensity of the impact of the pandemic, the lockdown policies, and the behavioral response of agents beyond the regulations, have greatly impacted the economic production (Aspri et al., 2020). By the leading interest in prioritizing other definite forms of expenditure, it goes without a doubt that the pandemic has radically altered traditional modes of consumption in different forms (Davola, 2020).

The wide application of promoting healthy way of living practices to the community can break the chain of distribution and also reduce social and economic costs more quickly (Faisal & Nirmala, 2020). The outbreak also disrupts the functioning of global supply chains and the world economy, which is experiencing a contraction in production (Zhang et al., 2020). Further, limited and restricted transport as well as global financial markets are also experiencing a significant downturn (Islam & Fatema, 2020). Many people have been laid off temporarily or permanently during the pandemic due to an insufficient workload. Unemployment is then associated with disrupted mental well-being and with other personal as well as societal disruptions such as poverty, crime, and more (Rudnick, 2020). Considering the expected length of the phenomenon, and its impact on the economy and employment, the management of consumers' economic exposure and of unpaid debt is therefore meant to emerge as a major consequence (Davola, 2020). Social distancing will also lead to depression and anxiety and considered as not appropriate in this situation. It further impacts social stability and psychological impacts (Qian & Jiang, 2020).

This study shows the socio-economic multifactor implications of COVID-19 for policy makers. The paper also explores the areas which are integrated with socio-economic aspects and under researched including the unemployment, legal, and household income and uncovers their relevance. Therefore, the contribution of this study is twofold; practical contribution and theoretical contribution. Practitioners and policy makers understand the specific areas affected by COVID-19 pandemic and take counter action to overcome and minimize the negative affect on business, economy, and the society. It also pinpoint, the focus areas that the governments should look to respond through a coordinated strategy to reduce the consequences of the epidemic on the economy and society. Theoretically, no review paper is identified in the socio-economic implication of COVID-19. This indicates, it's necessitated to conduct a review since there are no sufficient publications in each specific subject matters. Therefore, this study contribute to the researchers understand the different socio-economic areas highly affected by the pandemic. It also guides and provides clue for future researchers who want to conduct research in the subject matter by allowing them view the comprehensive analysis in the subject matter.

In general, the literatures shows that COVID-19 is highly affecting the social and economic aspects. Therefore, there is a necessity to systematically review the various works that relates COVID-19 from the perspectives of the social and economy.

2. Problem Investigated

The lockdown and restrictions have high impacts on the economic conditions since countries are placing restriction on productions (Bellomarini, Benedetti, Gentili, Laurendi, & Apr, 2020). As a result, the world economies are in a recession with a widespread of COVID-19 pandemic that hit the economic activities (Petric, 2020). There are many facts that indicated the down turn of economies. For instance, "the IMF warned that contraction and recovery of the world economy would be worse than anticipated. It also estimated a global GDP shrink of 3% this year" (Islam & Fatema, 2020). Moreover, the pandemic leads to continuing loss of trillions of dollars due to the shutdown of businesses (Samuel et al., 2020). On the other hand, the weakened world economy requires quick government response to save huge economic recession in addition to saving lives. To overcome this challenges, governments are making decisions on the extent and the length of imposing restrictions, social distancing, shutting down of schools and industries (Anderson et al., 2020). However, it is vital for governments to balance between the effect of the epidemic, and the economic effect of the regulatory measures (Aspri et al., 2020). In general, there is a necessity to assess the economic effect of COVID-19 by a policy maker (Caraka et al., 2020).

A large related literature reveals that living through community-wide results in immediate risk to people's mental and physical health and social relationships (Sibley et al., 2020). There is dissatisfaction among people because of the lockdown, evidenced by the increasing number of protests, which indicates the presence of high desire to come back to work (Samuel et al., 2020). COVID-19 has highlighted inadequacies which were always present in our social and welfare services,

such as the inadequate provision of medical care, food and benefit systems, and the lack of protections for homeless people, for squatters and for renters (Milligan, 2020). It is a serious condition that will cost hundreds of thousands of lives, and affect the psychology of people. Greater attitudes about the severity of COVID-19 were associated with more social distancing, disinfecting, and news monitoring, but also more hoarding (Oosterhoff, 2000). Therefore, all people behave very responsible during the COVID-19 pandemic, but radical social isolation of all population is not may be the best solution (Petric, 2020). This is because, the virus impacted the social and psychological well-being of the global community.

Consequently, Covid-19 have an impact on the various aspects of economy and social issues. However, the relationship between the various aspects associated with socio-economic implications of COVID-19 is not clear. Therefore, this study shows the socio-economic multifactor implications of COVID-19 for policy makers. The paper also explores the areas which are integrated with socio-economic aspects and under-researched including the unemployment, legal, and household income and uncovers their relevance. In general, no review paper is identified in the socio-economic implication of COVID-19 and this review is among the first paper in reviewing the subject matter.

3. Research Objectives

Given the absence of review paper in the socio-economic implications of COVID-19, this study systematically reviews the socio-economic multifactor implications of COVID-19. The paper also explores the areas which are integrated with socio-economic aspects and under-researched including the unemployment, household income and uncovers their relevance.

4. Research Methodology

We conducted a systematic mini-review of the literatures on multi-dimensional implications of COVID-19. This systematic mini-review used to recognize, evaluate, and synthesize the available literature since its comprehensive, explicit and reproducible approach. In defining the review scope, an expert from different fields of studies including health, environmental science, business, economics, and social psychology has been communicated and discusses the relevance of the review. Because of the multi-dimensional impacts of COVID-19, a thematic analysis was undertaken by identifying themes on the subject matter based on the suggestions provided by experts in different disciplines and the reviewer's experience. Then, these themes are used as a framework for analysis. The themes were identified different aspects under economic and social issues. In addition, we have included peer-reviewed articles, working papers, and special notes since it's a recent phenomenon and the number of articles published on the subject matter were not sufficient for review. On the other hand, pre-peer review articles and all other documents has been excluded in order to reduce the bias.

In order to avoid duplication of papers, in the first place, we have checked the availability of systematic review study in the subject of socio-economic implications of COVID-19. Then, the suitability of peer-reviewed scholarly works was assessed and found that it's relevant to provide a comprehensive scholarly work on this critical and timely issue. Therefore, the analysis was organized from the various implications of socio-economic aspects. Initially, we searched texts in Google scholar since the study is multidimensional, and downloaded all articles, discussion and working papers, and special notes from retrievals to June 2020. However, many articles that have no quality and published by predator journals were identified in the search and excluded from the review paper. Based on the identified themes, the results obtained from google scholar were summarized in table 1.

Table 1: The selection criteria, process and eligibility of journal articles

No	Dimensions	Total retrieved	Based on quality	Title & abstract based relevance	Full text relevance	Excluding other documents except peer reviewed articles
1	Economic factors	69	31	22	16	13
2	Societal factors	116	43	28	15	9
3	Total	185	74	50	31	22

After searched and downloaded articles from Google scholars based on exclusion criteria's, some works are excluded from the review based on the overall quality of journals and articles, title, abstract, and full text. The stages followed in the search strategies include, first, the term COVID19 is searched in combination with the above terms. Moreover, we have searched without spaces between the words in the quotation marks in order to identify both words together. Accordingly, 185 articles were identified in the first search by defining the publication year as 2020. Next, articles that are not peer-reviewed were removed. This is followed by reviewing the identified papers based on their title and abstracts depends on its relevance to the scope of the study. In this case, the title, abstract, or full-text review which is not related to the study topic is eliminated. Finally, working papers, discussion papers, special series notes, and short communications were excluded. Moreover, the search strategy and selection process are summarized in table 1 above.

Table 1 indicates that COVID-19 has various implications on issues of business-economics and social aspects. After the scholars from these disciplines were communicated, data were extracted by two independent reviewers. We have identified and removed the duplicated articles manually. Moreover, we have documented the literature findings and evaluation of results to ensure the study quality. Then, the synthesis was made to obtain necessary findings in relation to the various socioeconomic aspects related with COVID-19 and to build a comprehensive big picture by focusing on the relevant and necessary ideas. For analysis, a qualitative research method is used to analyze and discuss the theoretical aspects related to the socio-economic implications of COVID-19. From this, we compared and contrast the logic and arguments of many scholars to provide conclusions based on the synthesized arguments.

5. Literature Review

The current Coronavirus pandemic disaster has led to escalating emotional, mental health, and economic issues with significant consequences, and this presents a serious challenge to reopening and recovery initiatives (Zhong et al., 2020). Related to the lockdown policy, it will have an impact on the economic side (Samuel et al., 2020). Besides, the social implication has also a paramount importance. The intensity of the impact of the pandemic, the lockdown policies, and the behavioral response of agents beyond the regulations, have greatly impacted the economic production (Aspri et al., 2020). By the leading interest in prioritizing other definite forms of expenditure, it goes without a doubt that the pandemic has radically altered traditional modes of consumption in different forms (Davola, 2020).

The wide application of promoting healthy way of living practices to the community can break the chain of distribution and also reduce social and economic costs more quickly (Faisal & Nirmala, 2020). The outbreak also disrupts the functioning of global supply chains and the world economy, which is experiencing a contraction in production (Zhang et al., 2020). Further, limited and restricted transport as well as global financial markets are also experiencing a significant downturn (Islam & Fatema, 2020). Many people have been laid off temporarily or permanently during the pandemic due to an insufficient workload. Unemployment is then associated with disrupted mental well-being and with other personal as well as societal disruptions such as poverty, crime, and more (Rudnick, 2020). Considering the expected length of the phenomenon, and its impact on the economy and employment, the management of consumers' economic exposure and of unpaid debt is therefore meant to emerge as a major consequence (Davola, 2020). Social distancing will also lead to

depression and anxiety and considered as not appropriate in this situation. It further impacts social stability and psychological impacts (Qian & Jiang, 2020).

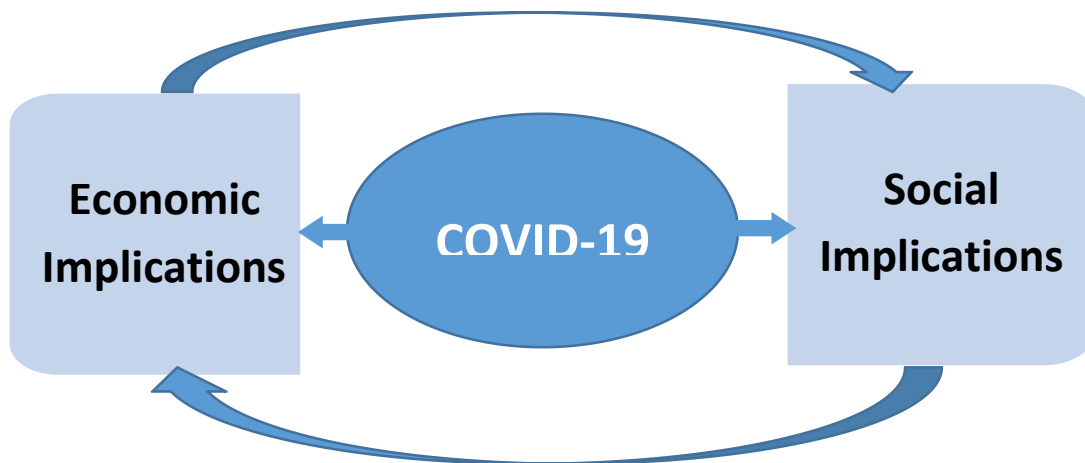


Figure 1: Conceptual Framework

6. Results and Findings

The following section provides the major findings from the existing literature and is used to build dimensions and show the antecedents and consequences of the variable “entrepreneurial orientation for environmental sustainability” (EOfES).

6.1. Results of the retrieved articles

The extent of COVID-19 effects are different among different sectors (eg, service sector is highly affected), firm sizes (small firms were more affected), social groups (disadvantages and minorities are more affected) and etc. Regarding the demographic factors, Acemoglu et al. (2020) considers structural differences in infections for distinct age groups that affect lockdown policies and economic costs (Çakmaklı et al., 2020). In general, the various economic areas affected by the outbreak of COVID-19 includes; Global disaster (Gupta, 2020), tourism industry (Oruonye & Ahmed, 2020), supply chain disruptions (Oruonye & Ahmed, 2020; Tang, Gaoshan, & Ahonsi, 2020) food insecurity (Cosgrove, 2020), shortage of raw materials (Tang et al., 2020), drop in productivity and efficiency (Raja, Lennes, & Biddinger, 2020). These economic difficulties lead to loss of employment which further affects food security. This directly leads to the social crisis.

The papers identified have related to many socio-economic factors including social behavior and attitudes (Ling & Ho, 2020, Sibley et al., 2020, Salman et al., 2020), psychological distress (Zhang et al., 2020, Sibley et al., 2020, Oliveira & Rossi, 2020, Rudnick, 2020), addictive disorders (Marsden, et al., 2020), disadvantages and minorities (Algarin et al., 2020, Opara et al., 2020, Yaya et al., 2020, Ginsburgh et al., 2020), infection level (Tomar & Gupta, 2020, Cássaro & Pires, 2020, Qian & Jiang, 2020, Aluga, 2020), demand and supply (Matias et al., 2020), societal well-being (Sibley et al., 2020), economic disruption (Austermann et al., 2020), business sectors (Oruonye & Ahmed, 2020, Islam & Fatema, 2020, Mihailov, 2020, Caraka et al., 2020), supply chain (Faisal & Nirmala, 2020, Mandel & Veetil, 2020), economic costs (Mandel & Veetil, 2020), financial markets (Abubakar, 2020, Zeren & Hizarci, 2020), and economic uncertainties (Eichenbaum, Rebelo, & Trabandt, 2020, Baker et al., 2020).

In general, the socio-economic impacts of COVID-19 were indicated in figure 1.

Table 2: Summary of objective and findings of the studies

Authors	Objectives	Findings
Ling & Ho, 2020	To analyze and explain the effects of COVID-19 on social behavioral reactions.	Most individuals prevailing over societal collective interest amid the pandemic have been prevalently observed. They also incentivize others to act selfishly, if no restrictions are imposed.
Zhang et al., 2020	To identify the characteristics of psychological distress across populations affected by the COVID-19 pandemic.	The study revealed differential levels of psychological distress in patients who experienced COVID-19 infection, individuals under quarantine, and the general public.
Marsden, et al., 2020	To assess the ways of mitigating and learning from the impact of COVID-19 infection on addictive disorders	Emotions are likely to place us at increased risk of a range of unhealthy behaviors. Some drug and alcohol services will innovate—providing novel ways of delivering harm reduction.
Tomar & Gupta, 2020	Proposing data-driven estimation methods like long shortterm memory (LSTM) & curve fitting for prediction and effect of preventive measures like social isolation & lockdown on the spread.	The prediction of various parameters obtained by the proposed method is accurate within a certain range and will be a beneficial tool for administrators and health officials. By these preventive measures, spread of the virus can be reduced significantly.
Cássaro & Pires, 2020	Presenting a simple model to follow the evolution of the COVID-19 pandemic in different countries.	It is almost impossible to predict based on the initial CV-19 cases how the pandemic will evolve. This approach can serve as a valuable tool for investigating how protective measures are changing the evolution of the pandemic.
Matias et al., 2020	To review the science of human needs and to make preliminary recommendations concerning necessary selfcare focusing on exercise.	In the vast majority of cases, individuals in social isolation have no access to mental healthcare. An in-built system of homeostasis can help rebalance activity, thought & feeling.
Sibley et al., 2020	This article presents a comprehensive analysis institutional trust, attitudes toward the nation and government, physical and psychological health, and subjective well-being.	People in the lockdown group reported higher trust in science, politicians, and police, higher levels of patriotism, and higher rates of mental distress compared to people in the pre lockdown group. Results were confirmed in within-subjects analyses.
Yaya et al.,2020	Examines how racism, segregation and inequality, now emerge as a monumental COVID-19 challenge.	COVID-19 has exposed the strong association between race, ethnicity, culture, socioeconomic status and health outcomes.
Oliveira & Rossi, 2020	In this review, we hope, through comparative behavioral analysis, to avoid, mitigate and alleviate social stress in humans.	By minimizing stress, the most rudimentary emotions, similar between humans and mice, but concient-rationalized in the human and promote the improvement of the human being's elevated quality of life, even in social isolation/quarantine.
Qian & Jiang, 2020	The aim of this article is to discuss the social distancing measures for COVID-19.	After a series of social distancing measures, there are 309 cities with zero cases and 34 cities with confirmed cases in China as of April 13, 2020.
Rudnick, 2020	Presents social, psychological and philosophical reflections regarding the current pandemic and beyond.	Highly exposed individuals and particularly vulnerable populations (eg. health care providers, socially disadvantaged etc, are addressed as requiring special attention.
Chakraborty & Maity, 2020	Describes the impact of COVID-19 on society and global environment, and the possible ways in which the disease can be controlled has also been discussed therein.	Almost all the nations are struggling to slow down the transmission of the disease by testing & treating patients, quarantining suspected persons through contact tracing, restricting large gatherings, maintaining complete or partial lock down etc.

Aluga, 2020	Highlighting the preparedness, response, transmissibility of Covid-19 and proposes intuitions to manage COVID-19	The confirmed cases will continue to increase exponentially if no drastic measures is taken.
Oruonye & Ahmed, 2020	This study has examined the potential impact of covid-19 pandemic on tourism development in Nigeria.	Covid-19 is already worsening the unemployment situations, resulting in loss of substantial revenue to the government, increasing incidence of poverty among others.
Islam & Fatema, 2020	Examines the potential macroeconomic effects of Covid19 on the tourism sector of Europe, US, and China as well as provides policy suggestions in light of previous works.	The global tourism sector is geocentric and the tourism sector of EU countries is interdependent. The study also finds strong domestic tourism in the USA and China whereas domestic tourism in EU countries is not that strong.
Austermann et al., 2020	Analyzes selected Asian & European countries along the degree of strictness when shutting down economic & social life.	Governments across Asia, Europe, and indeed worldwide almost show a concerted action when it comes to the timing of taking measures against the common global threat of the virus.
Faisal & Nirmala, 2020	This paper tries to map the economic impacts that are generally experienced by countries in the world affected by the pandemic.	A simple policy that can be easily implemented by everyone, requires awareness and compliance for all elements of society so that all can implement it which is useful to break the chain of distribution of COVID-19, to help the world economy recover.
Caraka et al., 2020	Assesses the effect of large scale restrictions on the economic growth during COVID-19 pandemic in Indonesia.	There are significant differences of retail, grocery and pharmacy, and residential mobility before and during the COVID-19 pandemic. During the pandemic there are severe economic losses, industry, companies, and real disruptions.
You et al., 2020	The purpose of this paper was to assess the distribution of COVID-19 morbidity rate in association with social and economic factors and discuss the implications for urban development that help to control infectious diseases.	Increasing population density, construction land area proportion, value-added of tertiary industry per unit of land area, total retail sales of consumer goods per unit of land area, public green space density, aged population density were associated with an increased COVID-19 morbidity rate.
Abubakar, 2020	This paper identifies the adverse effect of corona virus to businesses across the globe.	The values of the stock market fall to negative, while that of gold and oil tumbled significantly. Transportations & travel companies, businesses in the hospitality industry, & industrial production companies experience significant drop in patronage.
Zeren & Hizarci, 2020	Aimed to reveal the possible effects of Covid -19 Coronavirus epidemic on stock markets.	All stock markets examined with total death act together in the long run. It is considered as one of the optimal option for investors to avoid investments in stock markets, turn to investment in gold markets.
Eichenbaum et al., 2020	We extend the canonical epidemiology model to study the interaction between economic decisions & epidemics.	The competitive equilibrium is not socially optimal. The best simple containment policy increases the severity of the recession & saves half a million lives in U.S.

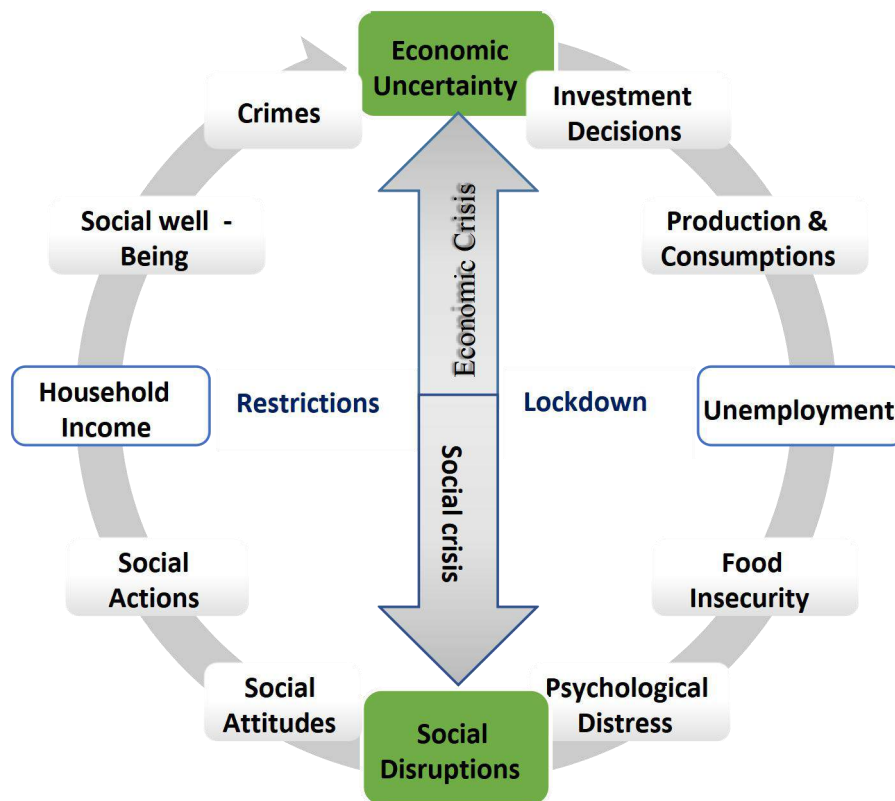


Figure 1: Socio-economic implication of COVID-19

6.2. Trends in Economic Crises

COVID-19 is bringing economic crisis from the lock down that hinders economic activities, and loss of income from shut down of business operation. This may also be associated with low production and less income from tourism and related industries. Besides, there are high costs associated with the outbreak of COVID-19. This may be because of less availability of raw material, which may lead to shutting down of many businesses and trades. Particularly, small firms are more vulnerable since they have less capacity to survive in this tough economic situation. It's also known that the level of uncertainty from the pandemic is higher, because of social isolation and physical distancing. The presence of high economic uncertainty has negative implications on the investment decision by investors. It also has implications on differentiating the economic sectors which are suitable/not suitable for investment in this pandemic time. In this regard, investing in the stock market is considered as unsuitable alternative with the increasing of COVID19 case and death rates (Zeren & Hizarci, 2020), since the pandemic is badly affects the financial markets and the stock market. That is because, investment decisions are highly responsive for the pandemic (Caraka et al., 2020). Therefore investment decision is the decision that requires critical investigation in this period of pandemic.

Investing only in the selected areas of investment and the overall economic uncertainty leads to the imbalance between production and consumption and/or demand and supply. In terms of sectors, the concentration of shocks in some sectors, makes the demand and expenditure reduced (Çakmaklı et al., 2020), particularly related to tertiary goods. Boone, Haugh, Pain, and Salins (2020) stated that the pandemic has impacted in three channels such as demand shock, supply shock, and uncertainty that leads to less consumption. On the other hand, the level of consumption is dependent on the amount of infected people. With the occurrence of COVID-19, many businesses have used shifts and gives time offs for workers, which reduces the production. Moreover, Faisal & Nirmala, (2020) revealed that due to increased demand during severe effect, there will be a need for sufficient supply. That is, the panic among consumers and producers can change the current pattern of consumptions.

6.3. Trends in Social Crisis

The overall economic crisis and psychological distress among societies creates high social disruptions. Socially, the effects are associated with quarantining, large gathering restrictions, and lock down (Chakraborty & Maity, 2020) that hinders social advancement. Such pandemic effects are believed to have influenced human behavior (such as issues of panic buying and noncompliance with government orders and law) (Ling & Ho, 2020). Moreover, the social disruption has contributed to changing social attitudes and behaviors. The society perceived the lockdown as a personal restriction and brings social disruptions. They also perceive that social distancing leads to depression and anxiety, and therefore, it's not suitable (Qian & Jiang, 2020).

The negative attitude among the societies highly changed the social actions. That is, there is a high anxiety that the lockdown increased stresses and alcohol consumption, which will raise the violence (Sibley et al., 2020). In this regard, the increase in violence is related with several factors including “economic stress, disaster-related instability, increased exposure to exploitative relationships, and reduced options for support” (Wang et al., 2020). Accordingly, with the increment of loss of life, social disorders will happen. Also, the closure of educational institutions may lead to long term societal difficulties, while in the short term, domestic violence which may require political and legal decisions may rise.

6.4. Integration of Economic and social crisis during COVID-19

In balancing the supply with demand, many industries are reducing their workers that brings unemployment. The high rate of unemployment has high implications on the overall economic and social crisis of countries. The high rate of unemployment leads to food insecurity, which further has implications on the psychological distress. Besides, financial impacts, the pandemic has implications on the psychological aspects. For instance, Rudnick, (2020) related unemployment with disturbed psychological well-being, poverty, crime, and the like. Therefore, the lockdown causes psychological and societal problems, more on the most vulnerable peoples including children and elders, minorities, and women (Marčinko et al., 2020). Further, the vulnerability to psychological distress associated with various factors, including gender, social support, specific experiences with COVID-19 infection, length of isolation, and amount of exposure to the media (Zhang et al., 2020). This crisis and disruptions requires tough governmental and policy decisions. Though the tough policy decision severely affected the social activities.

Restrictions on societal actions, unemployment, and overall social disruptions has contributed for the reduction of household's income. Particularly, this pandemic affects highly the socio-economic disadvantaged (Ginsburgh et al., 2020) including, ethnic minorities (Yaya et al., 2020), those from lower socioeconomic strata and retired people (Faisal & Nirmala, 2020; Rudnick, 2020). Besides, places exhibiting the greatest inequalities and disparities in income as well as significant concentrations of marginalized, stigmatized, and disempowered populations, regardless of their geographic location, are also disproportionately at risk (Santiago & Smith, 2020). The reduction in the household income also have worsen the social stability and further social advancement. The loss of income that happened because of social restrictions, unemployment may increase the amount of crimes. The unemployed have more affected because of less income. Therefore, the reduction of household's income from the crisis has negative implications on societal wellbeing. That is, the disorganization and limits can interrupt the societal well-being. The overall damage on social well-being leads individuals to involve in various crimes. For instance, Rudnick, (2020) stated that there are peoples that used the pandemic as an opportunity to disorganize the society, particularly those they consider as socially undesirable. In return, the increasing number of crimes leads to uncertainty (Both economic and societal). Therefore, the socio-economic implications of COVID-19 is cyclical and difficult to locate the starting and ending points.

7. Managerial Implications

At this critical time, while saving lives is of course the utmost priority, governments must balance their responses to mitigate the negative consequences for businesses, economy, and the society since a major depression may also cost further lives (Austermann et al., 2020). Hence, the governments

should try to look for the socio-economic impacts of COVID-19, in order to respond through a coordinated strategy to reduce the consequences of the epidemic. Besides, to improve the health system and build the strong facilities and infrastructures which may support to respond effectively, it's crucial to protect both the economic and societal well-being. Therefore, it's recommended that the governments and policy makers consider these multidimensional frameworks simultaneously rather than considering a single aspect in order to effectively respond to the COVID-19 outbreak. Particularly, they have to work on how safely work and come back to the operations. The governments should also give considerations for the highly affected groups by the crisis including, the small firms (eg. providing credit access), and disadvantages and minorities (eg. Providing free access to health and other services).

8. Conclusion

COVID-19 brings various challenges including; economic difficulty and social crisis. Therefore, the socio-economic implication is one of the highest area that has been affected by the pandemic. This may bring many social and economic crises. The occurrence of COVID-19 brings severe disruptions in the business organizations, which further leads to unemployment, reduced income, labor market disruptions, and increasing in distress. More specifically, the sequential socioeconomic influence is integrated and difficult to locate its starting point. Then, we have seen the sequential impacts as a circle, which influences each other. The pandemic leads to the presence of high economic uncertainty. This economic uncertainty may have different implication on different economic sectors. For instance, the tourism sector is highly impacted because of the restriction on the transport and peoples movement. According to Faisal & Nirmala, (2020), there are other service sectors which are highly impacted such as beauty salon and food shopping in restaurants. The economic uncertainty has also different impact on the different sizes of firms. That is, SMEs are more impacted and requires emergency fund, relaxation of installment payments, and cutting interest rates compared to the larger firms.

9. Limitations and Future Research Implications

This study is not out of limitations. First, in this study we made a systematic review with secondary data sources in order to undertake comprehensive analysis. That evidence seems to be largely understood to mean research-based evidence, and not necessarily experiential, implementation based evidence from the field (Raja et al., 2020). Therefore, the future researchers should focus on obtaining original data's and conduct experimental researches. Second, the study of socioeconomic aspects of COVID-19 is wider in scope. However, it's necessitated to conduct a review since there are no sufficient publications in each specific subject matters. For future researchers, we recommend to conduct their study on specific subjects such as unemployment, household incomes, and financial deregulations.

Third, the political and legal decisions are required in every aspects of the socio-economic effects of COVID-19. In the search we made, we are unable to get relevant study that related the COVID19 outbreak with the legal and political aspects. Therefore, the political and legal aspects should be studied and integrated with the socio-economic implications of COVID-19. The major areas that requires flexible decision includes domestic violence, informal settlements (Cosgrove, 2020), irregular migrants (Nanthini, 2020), institutions and regulations (Auener et al., 2020). Consequently, future researchers should critically give consideration to these factors in association with the implications of COVID-19.

Fourth, the technological perspectives have also paramount importance in the socio-economic, health system, and overall environment, even if it's under researched. For instance, the dramatic experience of the global Covid-19 pandemic has highlighted the great difficulty of effectively monitoring patients with existing information systems (Hueber, 2020). Timely and integrated data are not only key in the fight against COVID-19, while digital technologies are useful also for prevention and surveillance measures [27]. Accordingly, the various areas to be considered and requires further clarification in the future research should include; health block chain (Hueber, 2020), Digital applications (Auener et al., 2020), Future nano-technologies and active filters (Gaddi & Capello, 2020). All this specific issue

should be considered and studied in association with socio-economic implications of COVID-19 in the future research.

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ENTREPRENEURSHIP



Determining the Influence of Start-Up Capital Source on SMMEs Annual Turnover In The South African Informal Sector

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Keywords

Start-up capital; fiscal turnover; informal sector SMME's, bootstrapping, borrowed start-up capital

Abstract

Start-up capital has been shown to influence SMME turnover and by extension growth and development. The purpose of the research reported on was to investigate the impact of start-up capital source on the fiscal turnover of SMMEs' in the South African informal sector notably borrowed and own start-up capital. The motivation for the study could be found in the pivotal role of the informal sector in economic growth which has recently gained momentum and the availability of external sources of start-up capital which is an important indicator of entrepreneurship in addition to economic growth in a country. Secondary quantitative data from the National Survey of Employers and Self-Employed (SESE) downloaded from Statistics South Africa was used, yielding a final sample of 1658 respondents. By means of multiple regression analysis the research established that 3.1 percent of annual turnover could be attributed to own start-up capital, while 1.7 percent could be attributed to borrowed start-up capital. The most important finding relates to the direction of the correlations. Hence, when own start-up capital increases turnover decreased, whereas when borrowed start-up capital increased there was a concomitant increase in SMME turnover. Evidence generated could be utilised when debating expanding the informal sector.

1. Introduction

Small, Medium and Macro Enterprises (SMMEs) are regarded as the pillar of economic development as afore stated play a vital role in employment creation and poverty reduction (Chiromo & Nani, 2019; Ha, Nguyen & Dang, 2022). Despite the pivotal importance of SMMEs, they are confronted with many challenges, especially in the current post-COVID-19 circumstances which has negatively impacted the growth of the global economy (Ha *et al.*, 2022). Access to finance is one on the main critical challenges limiting the start-up, creation, survival, growth and development of SMMEs in most emerging economies (World Bank, 2019). The Organisation for Economic Co-operation and Development (OECD, 2019) substantiate the mentioned assertion and elaborate those challenges in accessing finance have significant negative impact on SMMEs start-up and innovative ventures. Ha *et al.* (2022) affirm that lack of start-up capital, lack of external debt, credit constraints, and equity are the core determinant influencing the performance *inter alia* turnover of SMMEs.

In the South Africa context, SMMEs include formally registered and informal businesses ranging from medium-size enterprises to informal micro enterprises (Small Enterprise Development Agency [SEDA], 2016). SMMEs in the South African informal sector are inclined to have more characteristics indicative of survivalist organisations compared to those in the formal sector. However, afore mentioned informal sector SMME's employ about 56 percent of the workforce and contribute approximately 45 to 50 percent to gross domestic product (Bhorat, Asmal, Lilenstein & Van Der Zee, 2018). In the developing country context, South Africa is comparatively unique as SMMEs in the informal sector are confronted by the challenge of raising start-up capital (Bhorat *et al.*, 2018; Ha *et al.*, 2022). As such, Beck and Cull (2014) noted that the usage of bank loans in Sub-Saharan Africa is lower than in other developing regions of the world irrespective of size of the venture. Wellalage and Fernandez (2019) argue that inadequate start-up capital sources and relatively high level of business law enforcement in South Africa are hindering the growth of informal sector activities. As such,

informal sector SMMEs have less start-up capital and not likely to fund core operations compared to the formal sector (Brixiová & Kangoye, 2016). Lekhanya (2015) cautions that the South African government should focus on creating diverse start-up capital sources for SMMEs especially those operating in the informal sector. Ha *et al.* (2022) assert that SMMEs start-ups in general are struggling to raise enough capital ascribed to limited access to credit facilities, low credit ratings and limited access to primary markets to sell shares and borrow funds. Rafiki (2019) found that the amount of start-up capital and borrowed start-up capital have significant influence on SMME's annual turnover.

Various studies (see for example, Bhorat *et al.*, 2018; Ha *et al.*, 2022, OECD, 2019, World Bank, 2019) both nationally and internationally have been conducted to investigate the impact of source of capital on SMMEs growth. Albeit the majority of studies underscore SMMEs in the formal sector with a paucity of research investigating the impact of start-up capital origin on the fiscal turnover of SMME's in the South African informal sector despite the important role thereof. Jonck and Nwosu (2022) reflecting on previous research (see for example, Essop & Yo, 2010; Fourie, 2018) emphasise the important role of the informal sector subsuming three-quarters of approximately 1.2 million home-based employees in informal employment as well as providing circa 850 000 paid employment opportunities, which represent almost twice the direct employment in the mining sector. In light of the afore stated, the research reported on attempts to address the lacuna in the body of knowledge based on the contention that source of start-up capital statistically significantly influences turn-over and thus SMMEs growth and development in the informal sector. The relevance of the study is underpinned by the contribution thereof to knowledge relating to informal sector SMMEs performance against the vital role thereof in financial growth (Jonck & Nwosu, 2022).

2. Problem Investigated

SMMEs are deemed instruments to address a plethora of socio-economics challenges since afore stated act as catalyst for economic activities (Muriithi, 2017). Ha *et al.* (2022) opine that determining the influence of start-up capital source on SMMEs fiscal turnover in the informal sector is critical for the survival and growth thereof. Inadequate start-up capital source has been cited as one of the main constrain affecting the turnover, performance, and growth of SMMEs in the informal sector (Ndiaye, Razak, Nagayev & Ng, 2018; The World Bank, 2019). The European Commission (2014) concur that inadequate start-up capital source is a common constrain for most SMMEs, especially among under-represented and disadvantage groups ascribed to a lack of own financial resources and collateral assets. According to Asian Development Bank (2014), access to start-up capital is a long-term barrier to SMMEs growth in several nations. Moreover, Beck and Cull (2014) noted that availability of external sources of start-up capital is positively associated with the number of start-up ventures, which in the economy is an important indicator of entrepreneurship and innovation as well as economic growth. It is extrapolated that approximately 30.0% of start-up SMMEs fail after a few years ascribed to inadequate start-up capital and inability to generate sufficient turnover (Lee & Kim, 2019; Solomon, Bryant, May & Perry, 2013). As such, source of start-up capital is an important determinant that drive SMMEs turnover in terms of the economic growth theory as well as the classical and neo-classical theoretical paradigms (Ha *et al.*, 2022).

3. Research Objective

The primary objective of the research reported on subsume investigating the impact of the origin of start-up capital on the fiscal turnover of SMMEs' in the South African informal sector notably borrowed and own start-up capital.

4. Hypotheses

The following hypotheses were formulated for the study:

- H₁: The variance in SMME's annual turnover can statistically significantly be attributed to own start-up capital.
- H₂: The variance in SMME's annual turnover can statistically significantly be attributed to borrowed start-up capital.

5. Literature Review

Despite similarities in the functioning of SMMEs in the development of various economies internationally, there appears to be no universal definition of SMMEs (Berisha & Pula, 2015). As such, the definition of SMMEs is based on criteria, *inter alia*, turnover, sales, level of capitalisation and number of employees, which differs in accordance with country or region (Chiromo & Nani, 2019; Muriithi 2017). The South African definition of SMMEs includes both registered and informal businesses. SEDA (2016) noted that SMMEs can range on a continuum from medium-sized enterprises, for example established household organisations with a workforce comprising of over 100 employees to informal micro-enterprises. The National Small Business Act, Act 102 of 1996 define micro-enterprises as business entities operated by owners with a maximum of five employees and a turnover of less than R150 000 per annum, while very small enterprises are informal businesses that have access to technology employing less than ten paid employees (Republic of South Africa, 1996). The focus of the research reported on is on SMMEs in the informal sector. SMMEs in the informal sector play a core role in most economies across the globe, especially in third world and emerging countries (Ndiaye *et al.*, 2018). The World Bank estimated that SMMEs in the formal sector represent approximately 90.0% of commerce and contribute about 40.0% of gross domestic product as well as up to 60.0% of employment in emerging and developing countries (The World Bank, 2019). Ndiaye *et al.* (2018) further contend that these figures will be much higher if SMMEs in the informal sector were to be included. However, access to start-up capital is a key limitation to SMMEs growth. Due to the impact of the COVID-19 pandemic, SMMEs in the informal sector are finding it difficult to raise capital to continue operations hampering growth and development (Ha *et al.*, 2022). Size of the SMME has also been identified as a constraint with specific reference to financing of start-up capital (see for example, Beck & Cull, 2014; The World Bank, 2019).

Start-up capital is referred to as the financial resources required by a venture to generate new business activity (Carlson, 2020). Raising start-up capital is a vital step in initiating a SMME. Managerial economist uses the term capital to describe the cash and investment utilised in day-to-day operations (Mankiw, 2021). The source of start-up capital can be from the owner of the enterprise, or it can be borrowed from different lenders such as banks, households and other lending institutions (Amadeo, 2020; Ha *et al.*, 2022). Carlson (2020) opined that some of the start-up capital sources available for SMMEs include personal investment, borrowing from significant other such as parents, family or friends, venture capital, government grants and subsidies as well as bank loans. Hwang, Desai and Baird (2019) found that source of start-up capital can be either external or internal. External sources of start-up capital include, for example from the private sector (i.e., banks or investment companies), from the public sector (i.e. government grants or subsidies) or from non-formal organisations. Internal start-up capital also known as bootstrapping, is when the entrepreneur uses own funds to launch a start-up (Carlson, 2020). This source of start-up capital might have a significant influence on SMME turnover. Watson and Wilson (2002) conducted a study among SMEs in the United Kingdom and found that own start-up capital or bootstrapping were the main desired source of capital, followed by loans. Rand *et al.* (2015) in their study found that turnover revenue is the largest source of capital for SMMEs in Vietnam. Haynes and Brown (2009) argued that although external funding is crucial, own start-up capital is essential for small business start-up ventures. As new SMMEs can use own start-up capital more efficiently to improve turnover (Rafiki, 2019; Zarrouk *et al.*, 2020). Mateev and Anastasov (2010) concurred that the turnover growth of SMMEs to a larger extent depends on internal capital or own start-up capital.

However, borrowed start-up capital such as bank loans are the most commonly used source of finance for small and medium-size enterprises. SMMEs seeking start-up capital can source finance through a variety of credit facilities such as a business loan (Carlson, 2020). Beck and Cull (2014) noted that the use of bank loans in Sub-Saharan Africa is lower in comparison to other developing regions in the world. The Asian Development Bank (2014) contend that SMMEs in most emerging economies often have limited access to either borrowed and or own start-up capital. SMMEs inability to obtain start-up capital through external funding can have a significant impact on SMME turnover (Ha *et al.*, 2022). Howbeit mixed research results are reported with reference to the impact of borrowed start-up capital. For example, debt financing or credit constrains is one of the major barriers to the growth of SMMEs

as it requires repayment of principal capital and interest thereby reducing possible cash flow. In a study among SMMEs in the Italian manufacturing industry, Becchetti and Trovato (2002) found that external source of capital has a negative impact on SMMEs turnover. Mateev and Anastasov (2010) argue that external capital (borrowed start-up capital) is needed for SMMEs to buy assets to increase production capacity. Based on data obtained from Swedish small- and micro- enterprises, Heshmati (2001) reported that loan obligation positively affects turnover growth.

6. Research Methodology

Secondary data analysis was employed in the research reported based on an open-source data set downloaded from the Statistics South Africa portal. Johnston (2014) expound that secondary data analysis primarily refers to the analysis of a data set that was collected by a reputable stakeholder for an alternate primary purpose. Furthermore, afore mentioned is a systematic methodology grounded in procedural and evaluative phases encompassing hypothesis development, identification and evaluation of the nominated data set. Retrieving secondary data from a trustworthy electronic platform, for example Statistics South Africa necessitate studying the data set particulars (i.e., Meta data) such as the measuring instrument, statistical release, current output and access conditions explicitly a case by variable data matrix under the ambit of a quantitative research methodology indicative of an evaluation procedure. Hence, the principal research design employed subsume a quantitative approach. Quantitative research can be demarcated as a process of analysing numerical data that allow for statistical extrapolations (Apuke, 2017). The mentioned quantitative data analysis denoted findings from the Survey of Employers and the Self-Employed (SESE), conducted by Statistics South Africa in the third quarter of 2017 embargoed until March 2019.

The SESE is a domestic household-based survey administered to provide inclusive evidence-based findings with reference to small and medium-sized entities (SME's) in the South African informal sector underscoring financial management of SME's not registered for Value Added Tax (Statistics South Africa, 2019). The SESE was piloted in 2001 and carried out longitudinally since with a three-year time period amid iterations. Specifically, the afore stated measuring instrument comprised 83 items covering nine aspects related to SMME's, inter alia business, operations, general, costs, expenditure, capital, transport, business registration and financial inclusion. A biographical section was included to gather information from respondents related to gender, age, educational level, location to mention a few (Statistics South Africa, 2019).

Respondents' demographic information was utilised to provide a profile of the sample. The final SESE sample contains a total number of 1658 (n = 1658) respondents covering nine provinces within South African. Per se, 22.0% (n = 364) of the sample originated from Limpopo, followed by 19.4% (n = 322) from Gauteng, 14.1% (n = 233) from Mpumalanga, 13.6% representing 225 respondents from KwaZulu-Natal, 11.6% (n = 192) from the Eastern Cape, 7.1% (n = 117) from the Free State, 6.3% (n = 105) from the North-West Province, 4.9% (n = 82) from the Western Cape and 1.1%, representing 18 respondents, from the Northern Cape. The sample was approximately equally distributed with reference to gender categorization. Namely 50.5% of the sample (n = 844) indicated their gender categorisation as male, whereas 49.1%, representing 814 respondents, identified as female. Bearing in mind, the age distribution, 27.6% (n = 457) of the sample were between the ages of 40 and 49 years, followed by respondents between the age of 30 and 39 years (n = 426; 25.7%), respondents between 50 and 59 years (n = 386; 23.3%), and respondents between 20 and 29 years (n = 229; 13.8%). Respondents 60 years and older represented 9.5% of the sample (n = 159), while respondents younger than 20 years of age represented only 0.1% of the sample, thus 2 respondents. Considering population group, most of the sample (n = 1 541, 92.9%), selected African and/or Black as racial categorisation. The remnant of the sample included 3.1% (n = 52) white respondents, 2.7% (n = 44) coloured and 1.3% (n = 21) Indian and/or Asian respondents. With reference to respondents' marital status, 38.5% (n = 638) of the sampled identified as married, whereas 34.8% (n = 577) specified they have never been married. Subsequently, 12.8% (n = 213) of the sample were co-habiting, with 10.0% (n = 165) identifying as either a widow or widower. Finally, 65 respondents, representing 3.9% of the sample, were either divorced or separated. Reporting on educational qualification, due consideration should be given to the fact that the data set was recoded to include the following categories, namely secondary

formal schooling (n = 1 507; 90.9%), technical qualification (n = 13; 0.8%), diploma or degree (n = 91; 5.5%), honours degree (n = 20; 1.2%), postgraduate qualification (n = 8; 0.5%) and 19 respondents representing 1.1% of the sample classified as unable to be categorised in the given categories.

Table 1: Demographic profile of the sample

Variable		N	%	Cumulative %
Province	Western Cape	82	4.9	4.9
	Eastern Cape	192	11.6	16.5
	Northern Cape	18	1.1	17.6
	Free State	117	7.1	24.7
	KwaZulu-Natal	225	13.6	38.2
	North-West	105	6.3	44.6
	Gauteng	322	19.4	64.0
	Mpumalanga	233	14.1	78.0
	Limpopo	364	22.0	100.0
Gender	Male	844	50.9	50.9
	Female	814	49.1	100.0
Age	Younger than 20	2	0.1	0.1
	Between 20 and 29	229	13.8	13.9
	Between 30 and 39	426	25.7	39.6
	Between 40 and 49	457	27.6	67.2
	between 50 and 59	386	23.3	90.5
	60 years and older	158	9.5	100.0
Population group	African/Black	1541	92.9	92.9
	Coloured	44	2.7	95.6
	Indian/Asian	21	1.3	96.9
	White	52	3.1	100.0
Marital status	Married	638	38.5	38.5
	Co-habiting	213	12.8	51.3
	Widow/Widower	165	10.0	61.3
	Divorce or separated	65	3.9	65.2
	Never married	577	34.8	100.0
Educational level	Secondary formal schooling	1507	90,9	90,9
	Technical qualification	13	0,8	91,7
	Diploma / degree	91	5,5	97,2
	Honours Degree	20	1,2	98,4
	Postgraduate	8	0,5	98,9
	Other	19	1,1	100,0

Source: Own compilation

Statistics South Africa employed a two-pronged sampling strategy to arrive at the sample expounded on above. More specifically, ascribed to the absence of a standardised sampling frame purposive

sampling was used to classify respondents in accordance with the Quarterly Labour Force Survey (QLFS) administered in the third quarter. Purposive sampling, even though a nonprobability sampling approach, is used when the population is indefinite focusing on respondents with predetermined characteristics best deemed to meaningfully contribute to the research project (Etikan, Musa & Alkassim, 2016). Furthermore, a maximum variation sampling strategy or heterogeneous sampling was used, to select respondents across a comprehensive spectrum underscoring the study topic. Hence, SMME's from various sectors was included in the sample (see Table 2 below for a detailed description), namely trade (51.5%), community and social services (12.2%), construction (12%), finance (7.9%), manufacturing (7.3%), transport (5.8%) and agriculture (1.6%). Trained enumerators in the SESE sector were responsible for data gathering (Statistics South Africa 2019), while data management required cleaning the spreadsheet excluding variables outside the scope of the study. After data cleaning the spreadsheet was imported to the Statistical Package for Social Sciences (SPSS) version 27.

Table 2: SMME sector

Variable - sector	N	%	Cumulative %
Growing of crops	25	1.5	1.5
Farming of animals	11	0.7	2.2
Manufacture of other food products	9	0.5	2.7
Manufacture of beverages	13	0.8	3.5
Manufacture of other textiles	10	0.6	4.1
Manufacture of knitted and crocheted fabrics and articles	5	0.3	4.4
Manufacture of wearing apparel	43	2.6	7.0
Manufacture of footwear	2	0.1	7.1
Manufacture of products of wood	2	0.1	7.2
Manufacture of non-metallic mineral products	10	0.6	7.8
Manufacture of structural metal products	15	0.9	8.7
Manufacture of other fabricated metal products / metalwork	16	1.0	9.7
Manufacture of motor vehicles	1	0.1	9.8
Manufacturing general	6	0.4	10.1
Building of complete constructions or parts thereof	108	6.5	16.6
Building installation	28	1.7	18.3
Building completion	43	2.6	20.9
Wholesale trade in non-agricultural intermediate products	1	0.1	21.0
Specialised retail trade	2	0.1	21.1
Retail trade not in stores	777	46.9	68.0
Repair of personal and household goods	29	1.7	69.7
Maintenance and re-pair of motor vehicles	56	3.4	73.1
Sale	1	0.1	73.2
Hospitality i.e., hotel accommodation	8	0.5	73.6
Restaurants	14	0.8	74.5
Alcohol retail in a Shebeen	6	0.4	74.8
Transport	82	4.9	79.8

Cash loans	2	0.1	79.9
Financial intermediation	1	0.1	80.0
Real estate activities with own or leased property	69	4.2	84.1
Renting of other machinery and equipment	5	0.3	84.4
Renting of personal and household goods	1	0.1	84.5
Software consultancy and supply	6	0.4	84.9
Maintenance and repair of office	1	0.1	84.9
Architectural	5	0.3	85.2
Business activities not elsewhere classified	20	1.2	86.4
Educational activities i.e., day care	7	0.4	86.9
Human health activities	44	2.7	89.5
Social work activities	22	1.3	90.8
Activities of other member-ship organizations	4	0.2	91.1
Motion picture	6	0.4	91.4
Other service activities	116	7.0	98.4
Not specified	26	1.6	100.0

Source: Own compilation

Statistically linear multiple regression modelling was used to test the research hypotheses which stated that:

H₁: The variance in SMME's annual turnover can statistically significantly be attributed to own start-up capital.

H₂: The variance in SMME's annual turnover can statistically significantly be attributed to borrowed start-up capital.

The primary purpose of regression modelling is to predict Y centred on X or to describe Y in accordance with X. In the case of multiple regression modelling Y has a normal distribution expressed as (Alexopoulos, 2010):

$$Y = B_0 + B_1X_1 + \dots + B_pX_p + \sigma(Y), \text{sd}(Y) = \sigma(\text{independent of } X)$$

Where B₀ represent the intercept, while B₁ B_p refers to the regression coefficients and σ the residual standard deviation. Prior to inferential statistical analyses, descriptive analysis was performed to provide a profile of the sample in addition to contextual information relating to start-up capital. Secondary coded data was exploited in the research project, thus no interaction with human and or animal participants occurred. Moreover, the dataset used has been published on a public platform adhering to the POPI Act requirements.

7. Results and Findings

The primary research objective of the research reported on subsume investigating the impact of the origin of start-up capital on the fiscal turnover of SMME's in the South African informal sector. To provide context to the inferential statistical analyses, Table 1 depicts findings from the descriptive analysis.

Table 3: Descriptive statistics

Variable	Level of the variable	N	%	Cumulative %
Finding financial support	Yes	979	59.0	59.0
	No	679	41.0	100.0

Usage of own money as start-up capital	Yes	731	74.7	74.7
	No	248	25.3	100.0
Main source of start-up capital	Wage employment	396	54.2	54.2
	Other business	35	4.8	59.0
	Sale of livestock/crops	11	1.5	60.5
	Sales of other assets	16	2.2	62.7
	Inheritance	24	3.3	66.0
	Pension from work	25	3.4	69.5
	Retirement/severance pay	23	3.2	72.6
	An investment policy that matured	1	0.1	72.7
	Money paid from 'stokvel'	41	5.6	78.4
	Other savings	62	8.5	86.8
	Old age grants	17	2.3	89.2
	Other social grants	79	10.8	100.0
	Amount of own start-up capital	0 to 49 000	694	95.2
50 000 to 99 000		21	2.9	98.1
100 000 to 149 000		5	0.7	98.8
150 000 to 199 000		2	0.3	99.0
200 000 and more		7	1.0	100.0
Origin of borrowed start-up capital	Loans from banks	12	6.2	6.2
	Loans from friends and relatives	150	76.9	83.1
	Loans from credit societies / 'stokvel'	10	5.1	88.2
	Loans from moneylenders	16	8.2	96.4
	Others	7	3.6	100.0
Annual fiscal turnover	R0 - R199 999	1074	97.8	97.8
	R200 000 - R399 999	18	1.6	99.5
	R400 000 - R599 999	2	0.2	99.6
	R600 000 and more	4	0.4	100.0

Source: Own compilation

According to Table 3 above, 59.0% of the sample representing 979 respondents noted that they were able to obtain financial support for the SMME, while 41.0% (n = 679) indicated the alternative. Moreover, 74.7% (n = 731) specified that the start-up capital was provided by the respondents themselves, while 25.3% (n = 248) obtained start-up capital from other sources. The main sources of start-up capital in descending order include previous and or present wage employment (n = 396; 54.2%), social grants (n = 79; 10.8%), other savings (n = 62; 8.5%), money paid out from a 'stokvel' (n = 41; 5.6%), alternative ventures (n = 35; 4.8%), pension from work (n = 25; 3.4%), inheritance (n = 24; 3.3%), retirement or severance pay (n = 23; 3.2%), old age grants (n = 17; 2.3%), sales of other assets (n = 16; 2.2%), sale of livestock or crops (n = 11; 1.5%) and lastly an investment policy that matured (n = 1; 0.1%). Reflecting on the amount of own funding used as start-up capital, respondents indicated that in the majority of cases (n = 694; 95.2%) less than R49 000.00 were invested as start-up capital, followed by 2.9% (n = 21) of the sample who invested between R50 000 and R99 000. Furthermore, 5 respondents (n = 5; 0.7%) invested between R100 000 and R149 000, while 2 respondents (n = 2; 0.3%) invested between R150 000 and R199 000 and lastly 7 respondents representing 1.0% of the sample invested R200 000 and more. When considering the sources of borrowed start-up capital, the majority of the sample i.e., 76.9% (n = 150) engaged in informal lending such as loans from friends and relatives, followed by loans from moneylenders (n = 16; 8.2%), loans from commercial banks (n = 12; 6.2%), loans from credit societies and or 'stokvel' (n = 10; 5.1%) and 3.7% of the sample representing 7 respondents selected other. With reference to annual

fiscal turnover, the majority of the sample (n = 1074; 97.8%) had a turnover of less than R199 999.00, while 1.6% (n = 18) of the SMME's had a turnover of between R200 000 and R399 999.00, 0.2% (n = 2) had a turnover of between R400 000 and R599 999.00 and lastly only 0.4% of the sample representing 4 SMME's had a turnover of R600 000 or more.

Multiple regression analyses were performed to determine the variance in annual fiscal turnover on relation to the origin of start-up capital i.e., own or borrowed start-up funding with results illustrated in Table 4 below.

Table 4: Multiple regression analysis with annual fiscal turnover as dependent variable

Variable	B	t	P	ΔR^2	R ²	F
Own start-up capital	-0.031	-0.785	0.433	-0.001	0.001	0.615
Borrowed start-up capital	0.017	0.426	0.670	-0.001	0.000	0.181

Note: β , Beta; p, statistical significance; ΔR^2 , adjusted r square, R², r square

Source: own compilation

As can be deduced from Table 4, own start-up capital did not statistically significantly predict annual fiscal turnover ($\beta = -0.031$; p = 0.433). More specifically 3.1 percent of the variance in annual fiscal turnover could be attributed to own start-up capital howbeit not statistically significantly. The relationship direction was negative thus as own start-up capital increase there would theoretically be a concomitant decrease in annual fiscal turnover. In the same vein, borrowed start-up capital did not statistically significantly predict annual fiscal turnover ($\beta = 0.017$; p = 0.670). More specifically 1.7 percent of the variance in annual fiscal turnover could be attributed to borrowed start-up capital. The relationship direction was positive thus as borrowed start-up capital increase there would hypothetically be a concomitant increase in annual fiscal turnover.

8. Policy Implications

One of the important areas of policy action involves increasing access to external or borrowed start-up capital for SMMEs, especially those in the informal sectors. As such, the OECD (2019) opine that ensuring SMMEs have access to the right source and amount of start-up capital is essential for SMMEs development and growth. Thus, policy directives should focus on emphasising capital investments specifically aimed at SMME development instead of SMMEs using social grants, “stokvel” money or loans from family and friends which might be less than required to ensure adequate SMME turnover and growth. Moreover, the article has practical and theoretical implications. In practice, this study can serve as a reference source for SMME owners when deciding on the best start-up capital source that will contribute positively towards generating turnover. Theoretically, this paper contributes to the corpus of knowledge on SMMEs start-up capital sources, and fiscal turnover with specific reference to the South African informal sector.

9. Conclusions and recommendations

The primary objective of the research reported on subsumed investigating the impact of the origin or source of start-up capital on the annual fiscal turnover of SMMEs in the South African informal sector underscoring specifically own start-up capital versus borrowed start-up capital. Despite the pivotal role of informal sector SMMEs in the South African context limited empirical evidence could be identified that investigated the topic under discussion. Hence, source of start-up capital could be deemed a novel research area and a possible success factor with specific reference to SMME growth and development. This contention is based on the assertion that availability of external start-up capital is hypothesised to be positively correlated to the amount of start-up ventures and an indicator of entrepreneurship within a country.

To contextualise the findings of the study, 97.8% of the sample represented micro- to small enterprises in the informal sector with less than R199 999 annual turnover. Moreover, 95.2% of the sample indicated that the amount of start-up capital invested ranged between R0 to R49 999. Afore stated confirm research by Brixiová and Kangoye (2016) in that informal sector SMMEs have less

start-up capital and not likely to fund core operations compared to the formal sector. Results presented indicated that 74.7% of the sample used bootstrapping to fund the start-up venture, while 25.3% noted other sources of funding. In terms of specifically borrowed start-up capital, 20.0% of the sample indicated that they sourced external funding in the form of loans to fund the SMME. To delineate further, the main sources of bootstrapping included wage employment (54.2%), social grants (10.8%), savings (8.5%) and “stokvel” money (5.6%). With reference to borrowed start-up capital 76.9% requested a loan from family and or friends. Only 6.2% of the sample applied for a bank loan to fund the SMME. Results presented confirm research findings by Carlson (2020) which identified similar start-up capital sources available for SMMEs include personal investment, borrowing from significant other such as parents, family or friends, government grants and subsidies as well as bank loans. Results of the study also confirm those by Watson and Wilson (2002) who conducted a study among SMEs in the United Kingdom and found that own start-up capital or bootstrapping were the main desired source of capital. The fact that only 6.2% of the sample used a bank loan to fund the SMME verify research by Beck and Cull (2014) which noted that the use of bank loans in Sub-Saharan Africa is lower in comparison to other developing regions in the world.

Results from the multiple regression analysis revealed that 3.1 percent of annual turnover could be attributed to own start-up capital, while 1.7 percent could be attributed to borrowed start-up capital. However, neither own start-up nor borrowed capital sources had a statistically significant effect on annual fiscal turnover of informal sector SMMEs. The most important finding relates to the direction of the correlation. As such, when own start-up capital increases turnover decreased, whereas when borrowed start-up capital increased there was a concomitant increase in SMME turnover. This finding contradicted research by Ha *et al.* (2022) on Vietnamese SMEs which revealed that own start-up capital has a significant impact on the sales (turnover) growth of SMMEs, while borrowed start-up capital had a negative effect on SMEs turnover growth. Notwithstanding, results presented confirm those by Mateev and Anastasov (2010) which argued that external capital (borrowed start-up capital) is needed for SMMEs to buy assets to increase production capacity. Similarly, based on data obtained from Swedish small- and micro- enterprises, Heshmati (2001) reported that loan obligation positively affects turnover growth.

In conclusion, the turnover growth of SMMEs require internal capital (own start-up capital) but to a large extent external capital (i.e., borrowed start-up capital) would increase annual fiscal turnover as it is presumed that borrowed start-up capital would be invested to acquire assets to increase production capacity. Availability of external start-up capital could hypothetically be identified as a success factor in SMMEs growth and development in the South African informal sector. Governments’ role in fostering informal sector SMMEs should be intensified, especially since the financial system and the economic condition in South Africa seems to be a potential stumbling block for SMMEs to access enough financial assistance in the form of own start-up and borrowed capital. The assertion is in accordance with Lekhanya (2015) who cautioned that the South African government should focus on creating diverse start-up capital sources for SMMEs operating in the informal sector.

Acknowledged caveat’s part and parcel of the research reported on should be taken into consideration when interpreting the results. Firstly, secondary data downloaded from a reputable source was utilised and consequently subject to the suppositions made in the statistical release. Secondly, lack of transparency and incomplete data could lead to an unbalanced dataset. Thirdly, the sample size of this study was 1658 (n = 1658) respondents and could potentially be enlarged in future research to increase generalisability. Fourthly, this paper focused on two sources of capital, namely own money as start-up capital and borrowed start-up capital. Future study should include more capital structures in order to increase the accuracy of the regression model.

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Factors Influencing SMME Entrepreneurs' Decision-Making Processes

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Keywords

Entrepreneurship;
Decision-making;
Entrepreneurial
identity; SMME's

Abstract

In an entrepreneurial landscape that is fast paced and ever changing, entrepreneurial decision-making and the speed at which decisions are to be made, are of paramount importance. The research reports the results of an exploratory qualitative study of 14 entrepreneurs.

Participants stated that varying leadership styles are required in order to make decisions. Risks involved, level of education, personal values, skills development and lived experiences also play a role in decision-making. A final theme that emerged, was that government is a barrier to entrepreneurial decision-making. It is thus recommended that entrepreneurs need to be aware of their journey and identity as entrepreneur at the stage of decision-making, because it can influence their decision-making ability.

1. Introduction

1.1. Background

Entrepreneurial decision-making is largely guided by rationality, emotion and intuition (McKinsey, 2020). In a business landscape that is ever changing and fast paced, decision-making and the speed at which decisions are to be made, are of paramount importance as it has a direct impact on competitiveness (Ilonen, Heinonen & Stenholm, 2018; McKinsy, 2020). Entrepreneurial decision-making can be described as a multifaceted and complex approach made within an environment of uncertainty and unpredictability. Subsequently, entrepreneurial success and competitiveness relies heavily on their decision-making ability (De Winnaar & Scholtz, 2020).

Studies conducted in the past largely focused on an entrepreneur's decision-making strategy relative to causation and effectuation (Ilonen et al., 2018). Sarasvathy (2001) describes the theory of effectuation as a process in which entrepreneurs make decisions and perform specific actions in order to achieve goals and solve business problems. The theory purports that entrepreneurs make decisions based on a future that is inherently unknown and unpredictable.

According to Jones, Ratten, Klapper and Fayolle (2019), entrepreneurial identity can also change over time, based on context and the socioeconomic environment. Furthermore, entrepreneurial identity can influence an entrepreneur's behaviour and decision-making ability. Entrepreneurial identity is thus fluid in nature and subsequently can affect the decision-making process (Martina, 2019). Factors influencing entrepreneurial decision-making that will eventually lead to competitive and sustainable advantage, still needs investigation. Hence, the intention and purpose of this article is to assess the factors influencing the decision-making process of South African entrepreneurs in creating competitive advantage.

1.2 Problem statement

Building and maintaining sustainable SMME's has a direct impact on economic growth (Olawale, 2014), there is thus an urgent need both locally and internationally to uncover the influences and

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drivers that lead to the success (and failures) of SMME's of which decision-making is one. The article aims to better understand the factors that enable or hinder decision-making within South African SMME's. These factors need to be identified, because effective decision-making can become a competitive advantage for fast-paced entrepreneurs.

1.3 Research questions, aims and objectives

The main research question investigated by this paper is: What factors influence entrepreneurial decision-making within SMME's in South Africa that drive competitive advantage? This question was supported by asking in the sub-questions about the influence of leadership styles, the effectuation theory, and competitiveness on decision-making. The objective of the research was thus to identify the factors influencing the decision-making process. The aim is to, once the factors have been identified, make entrepreneurs aware of how they can speed up the decision-making process, because fast and effective decision-making can become a competitive advantage for SMME entrepreneurs.

1.4 Methodology

An exploratory research design within the interpretivist paradigm, according to a qualitative research methodology, was employed to support the primary research question by exploring factors that influence the decision-making process of entrepreneurs within South African SMME's.

Semi-structured interviews were adopted to collect data (Saunders & Lewis, 2012; Wegner, 2018). Data collection was conducted through open ended questions. During the interviews participants were encouraged to give feedback based on their own lived experiences and views. Entrepreneurial decision-making, identity and leadership theories were the pivot during the discussion and insured that the conversations remained within the parameters of the subject.

1.4.1 Population and sample

The research sought to identify a group of individuals within a predefined context with similar characteristics. The population identified, was relevant in that all participants were entrepreneurs with varying years of experience, operating multiple businesses, and all of whom are key decision makers within the requisite businesses. Non-probability sampling was used due to the limited amount of exact data and the informal nature within the SMME sector (Saunders et al. 2012). In order to remove sampling-bias, a selection criterion was adopted, namely entrepreneurs who have managed to successfully opened and run more than one business for more than five years..

The intention of this ensured that a cross sectional analysis seeking to understand the impact of entrepreneurial identity and leadership styles and its influence on decision-making was attained. For purposes of the research the sampling method employed was purposive wherein participants with similar characteristics were selected in order to address the outlined goals of the research project and subsequently answered the research questions.

In order to achieve the number of participants required the researcher employed the snowball sampling method whereby participants were able to recommend other entrepreneurs within the industry and context whom fit the criteria and are able to support in answering the research questions. This process is key in accessing relevant participants whom may provide rich insight into how entrepreneurs make decisions through the different life stages of their entrepreneurial lifecycle relative to the effectuation theory.

The snowball method proved to be very useful as the researcher was able to gather deep and insightful data from participants that were referred to the researcher by participants already interviewed. By means of employing the purposive sampling method alone the researcher would have lost this opportunity. Therefore, the researcher collected data from 14 participants until data saturation was realised.

1.4.2 Analysis approach

In order to substantiate the exploratory nature upon which the research was designed, the research project made use of content analysis in order to analyse the data gathered during the semi-structured interviews. Interviews were recorded and transcribed through software platforms, namely Microsoft teams and Otter.ai. The transcribed data was submitted into the software tool Atlas.ti, to assist with coding and theme identification.

2. Literature Review

Sarasvathy (2001; 2008) describes the theory of effectuation as a process in which entrepreneurs make decisions and perform specific actions in order to achieve goals and solve business problems. The theory implicates, entrepreneurs make decisions based on a future that is inherently unknown and unpredictable. The effectuation theory is common practice for entrepreneurial decision-making. It has been observed that entrepreneurial identity is a fluid construct and naturally changes during the entrepreneurial process and journey (Martina, 2019). Entrepreneurs can adopt simultaneous identities during the decision-making process.

2.1 Small Business Landscape

The Department of Small Business Development defines SMME's through three metrics that cover: the number of total employees, total asset value as well as the total turnover that a business produces. SMME's have been classified into three distinct categories which include small, micro and medium businesses. Countries motivate the development of SMME's with the intention of expanding the economy, creating jobs and reduce unemployment (National Planning Commission, 2011). In contrast with this intention, South Africa finds itself in a precarious position with regards to the survival rate of SMMEs when compared to global statistics. Research shows that around 75% of SMME's within the first few years of business fail (Freidrich, 2016).

2.2 Entrepreneurship as a theory

Entrepreneurs are commonly depicted as key drivers of economic advancement possessing the innate ability to recognise and uncover potential opportunities giving them the aptitude to navigate future uncertainty and change (Ramoglou, 2021). Naumann (2017) states that entrepreneurs possess specific attributes which include the ability to set goals based on specific tasks, to spot opportunities and to take risks. Entrepreneurs have an innate ability to solve problems and identify needs. This stems from lived experiences, level of skill, knowledge base and their entrepreneurial network.

Entrepreneurship is surrounded by three concepts that define the theory. These could be outlined as the level of risk, the degree of uncertainty and the context in which entrepreneurship occurs (Greene, 2020). These components are fundamental within the theories of entrepreneurship. Innovation theory, normally caused by a disruption, initially purported by Schumpeter has a distinct focus within entrepreneurship (Upadhyay & Rawal, 2018). According to Schumpeter inventors develop and discover new models and frameworks however, innovators surround themselves with the discovery of new inventions which aim to improve the context (after a disruption) in which it was invented. Schumpeter's innovation theory acknowledges entrepreneurship and the direct link it has with both business and new inventions, resulting in continuous entrepreneurial business development (Mehmood, Haitham, Alshurideh, Al-Gasaymeh & Ahmed, 2019).

McClelland base his theory on the entrepreneur's needs for achievement, power and affirmation and the subsequent factors that drive it (Warren, 2020). Within this context internal factors such as value and motivation that advance the exploitation of opportunity and conditions relative to trade are paramount and consequently of utmost importance when considered in conjunction with innovative characteristics associated with entrepreneurship. It can therefore be argued that this theory focuses on an entrepreneur's innate desire and need of achievement (Aparna, 2020). McClelland indicated that entrepreneurs with a higher need for achievement value reward as more than just monetary incentive (Aparna, 2020).

2.3 Effectuation

At the beginning of the 21st century the approach called effectuation got associated more regularly with entrepreneurship (Sarasvathy, 2001). This theory purported an alternate dimension and approach within the field of entrepreneurial decision-making which went against the status quo and norms of the theory of causation. This theory sought to outline how entrepreneurs made use of a set of heuristics within environments of uncertainty. The notion furthermore purported entrepreneurs create opportunities for themselves as opposed to searching for them. This paradigm shift of the entrepreneurial process outlines principles that guide decision-making through the use of effectual logic (Sarasvathy, 2001; 2008). According to Fisher (2012), effectuation is a practical theoretical construct within which entrepreneurial decision-making actions are outlined. Perry, Chandler and Markova (2012), critiqued that the theory of effectuation was yet to be effectively verified and practically tested. Arend, Sarooghi and Burkemper (2015), are also critics of the theory by stating that the theory of effectuation is lacking in originality and it is ambiguous.

The theory of effectuation contends that it is a process in which entrepreneurs make decisions and perform specific actions in order to achieve goals and solve business problems. The theory contends that entrepreneurs make decisions based on a future that is inherently unknown and unpredictable. According to Sarasvathy (2001), entrepreneurs employ effectuation during the pursuit of subsequent entrepreneurial opportunities.

Entrepreneurs outline objectives required in order to advance entrepreneurial opportunities. By so doing they make use of current skills and means (Perry, Chandler & Markova, 2012). Effectuation further states that objectives are not clearly envisioned at inception however, effectuation processes are rigid and inflexible in nature therefore, entrepreneurs are able to exploit environmental contingencies by taking advantage of them and as a subsequent consequence learning throughout the entrepreneurial journey (Perry et al., 2012). Thus, effectuation as purported by Sarasvathy (2001; 2008), epitomizes a paradigmatic shift within the traditional notions of entrepreneurship as a school of thought consisting of different methods of decision-making such as:

2.3.1 Bird in hand

The “Bird in hand” theory is based on a set of principles of which the foremost being that whereby entrepreneurs make decisions and create entrepreneurial opportunities based on their own personal means of who they are, what they know and whom they know. This principle can be expressed as the foundation and core unto which the theory of effectuation is built as it differentiates itself from what effectuation is and subsequently what the theory is not as it clearly outlines and distinguishes itself from other decision-making theories, namely causation (Fisher, 2012).

2.3.2 Affordable loss

The affordable loss principle states that entrepreneurs make decisions with the intention to limit risks through an inherent understanding and acceptance of what they can afford to lose (Sarasvathy, 2008). This notion stands to reason then that an entrepreneur’s decision-making ability is rigid, based on the above premise. This principle focuses on limiting the potential losses that an entrepreneur might face in the pursuit of an entrepreneurial opportunity.

2.3.3 Lemonade

This principle dictates that entrepreneurs have the ability to leverage contingency. Entrepreneurs actively seek out worst case scenarios in order to uncover potential initiatives and opportunities which ultimately facilitate decision-making.

Entrepreneurs have an innate flexibility which allows them to exploit environmental contingencies within uncertainty. Due to the future being inherently unknown, effectual decision-makers employ an adaptability which seeks to capture the opportunity which are direct results of uncertainty (Sarasvathy, 2008; 2009).

2.3.4 Patchwork quilt

The patchwork quilt metric within the construct of effectuation relies on partnerships. Entrepreneurs focus on building networks and partnerships with the intention of mutual synergy and success. Strategically selected partners provide entrepreneurs with an innate ability to remove uncertainty early on and assist in the decision-making process.

2.3.5 Pilot in the plane

The fifth construct is that of the pilot in the plane metric. This analogy of a pilot in a plane, outlines how entrepreneurs focus on actions within their control and subsequently through the employment of this metric decisions lead to desired outcomes (Sarasvathy, 2008). Moreover, within environments of uncertainty and unpredictability effectual entrepreneurs seek to actively control influences and outcomes thereby plotting out a course that leads to future success through risk mitigation, the management of resources and leveraging partnerships (Sarasvathy, 2008).

Table 1: Effectuation Theory of Sarasvathy summarised

Effectual Principle	Meaning
Bird in hand	<ul style="list-style-type: none"> • Who am I? • What do I know? • Whom do I know? (Means)
Affordable loss	Price that I am willing to pay to give myself the opportunity to achieve my entrepreneurial goal (Focus on Downside)
Crazy quilt	<ul style="list-style-type: none"> • Stitch together the people I need • Obtain their commitment • Multiply my means (Co-creation partnership)
Lemonade	If life gives you lemon, make lemonade (Leverage contingencies)
Pilot in the plane	If you can control it, you need not to predict it (Worldview: Control vs Contingencies)

2.4 Effectual cycle

It is of key importance to outline the effectual cycle in practice. According to Sarasvathy and Dew (2005), the effectual cycle commences with an entrepreneur's means as the starting point and outlines what an entrepreneur knows, who the entrepreneur is, and whom the entrepreneur knows or has access to. The cycle then moves onto the process of defining goals relative to what the entrepreneur is able to do within the effectual decision-making process, within this phase's potential courses of action, and outlining goals of paramount importance.

Sarasvathy (2008) states that these two interactions then lead to a direct engagement with potential partnership, networks and stakeholders. Strategic partnerships and alliances are formed through effectual stakeholder commitment, subsequently leading to a commitment of resources by both parties which translates to mitigation of risks and a reduction of future uncertainty. The subsequent benefit of partnering with stakeholders lead to the development of new means, new goals, new markets and an increase thereof through the expanding cycle of resources (Ghorbel, Hachicha, Boujelbene & Aljuaid, 2021).

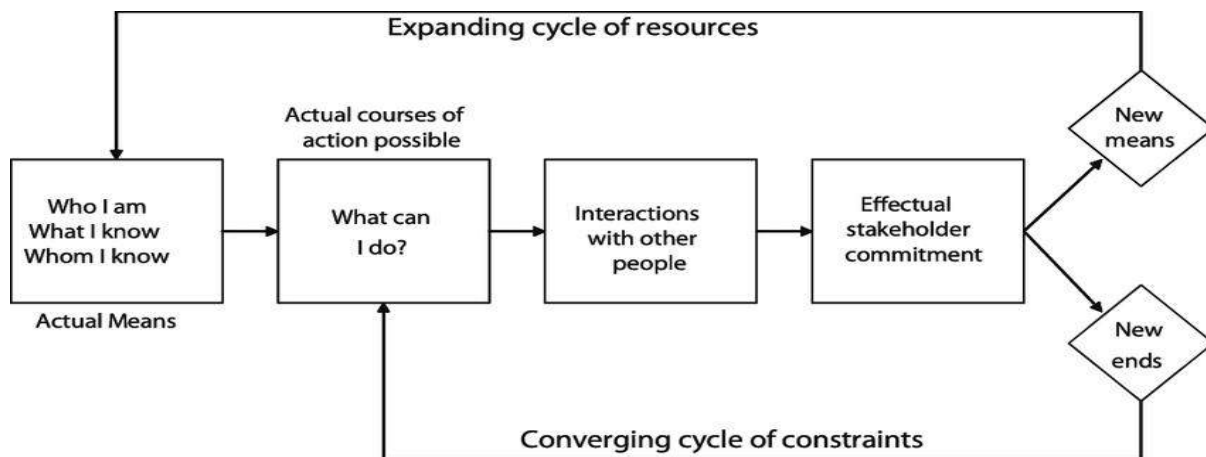


Figure 1: Effectual Process

Source: (Sarasvathy and Dew, 2005:543)

2.5 Decision-making as a construct

Decision-making as a theory surrounds itself with the construct of cognitive processing as well as methodology that exercise thinking in situations where entrepreneurs are faced with identifying, creating or exploiting opportunity (Grichnik, Baier & Faschingbauer, 2016). Decision-making follows the process of recognising the current state, evaluating options at hand, selecting potential actions based on the decision-makers need and reassessing options based on the consequence (Beach and Lipchitz, 2017).

2.5.1 Rational choice theory

Rational choice theory purports that decision-makers are rational as they pursue maximum efficacy through means of having absolute knowledge when faced with a problem, potential solutions and the outcomes of each. It can then be argued that decision-making theories based on the premise of rational choice theory has both identifiers of a descriptive and prescriptive nature. Wherein it dictates how decision-makers should perform and seeks to understand how decision-makers do perform during situations (Pettigrew, 2014). However, decision-making when observed through a rational lens can be described as prescriptive in nature. Hence, the rational choice theory follows a process of problem identification, creating alternate options, assessing alternate options, selecting an alternate option, implementation of the decision and evaluation of the results. (Lunenburger, 2011).

2.5.2 Bounded rationality

Pettigrew (2014), states that in practise rationality is bounded as the decision-maker's competency is influenced by both the internal and external environment as a result. Decision-makers are proscribed from making decisions which are completely unbiased. Rationality declines as soon as decision-makers are confronted with an elevated degree of ambiguity which resultantly leads to making bounded decision's which are grounded on information gathering relative to the decision. This concept is of paramount importance within the context of entrepreneurial decision-making as the notion purports that entrepreneurs are usually faced with a high level of uncertainty due to dynamic and everchanging environments. However, Sarasvathy (2008; 2009) states that uncertainty is a given and thus the need to predict the future becomes irrelevant if decision-making protagonists can control it.

2.5.3 Cognitive bias

Cognitive bias can be defined as mental heuristics employed within decision-making. Cognitive bias assists decision-making protagonists overcome cognitive limitation however the resultant outcome is less rational as complete decision-making. Emotions are a fundamental tenant of cognitive bias as differing emotions produce divergent cognitions. Arguably, now more than ever research shows that decision-makers rely on rational choices when making decisions however, emotion and cognition still play a significant role in influencing decision-making (Lerner, Li, Valdesolo & Kassam, 2015). Decision makers that are inclined toward cognitive bias tend to have a risk perception which is low leading to decision's that take on higher risk through an increased risk appetite.

2.5.4 Social cognition theory

Social cognition theory is focused on an understanding of the cognition which inherently dictates human behaviour as opposed to trying to understand it. The theory purports that decision-makers have an increased sense of obligation regarding a decision when they are of the view that they are in direct control of the requisite situation. Whereby the central tenant of implicit cognition relies on experience influencing decisions within conscious settings (Wyer and Shrull, 2014).

2.5.5 Naturalistic decision-making

Naturalistic decision-making relies heavily on an intuitive approach wherein decision-makers identified as experts within their requisite fields, make decisions based largely on intuition. Although naturalistic decision-making supports advanced entrepreneurial decision-makers who can match decisions with cognitive capability it also supports novice entrepreneurs as they can learn and adapt new skills throughout the entrepreneurial journey (Zsombok, 2014). Within the context of decision-making, it can be argued that uncertainty and risk are prerequisites and can be found in multiple forms. Furthermore, this can have a negative effect on decision-makers whereby they avoid making decisions due to uncertainty (Klein, 2015). Although literature states that in practise the scenario of not deciding due to uncertainty is not realistic and subsequently not possible consequently, naturalistic decision-makers consider this factor and distinguish between the constructs of uncertainty and risk.

2.5.6 The entrepreneurial mindset

Entrepreneurial mindset theory outlines how a decision-maker has the ability to act within environments and conditions of uncertainty. The central tenant of entrepreneurial mindset purports the notion that entrepreneurial decision-makers have the innate ability to engage in numerous cognitive approaches. This is done through the means of acquired experience and knowledge wherein decision-makers can set goals on cognition and chose the best possible approach within differing environments. Environmental uncertainty is the main reason for this notion. Research also points out that environmental uncertainty can be viewed as an important resource for entrepreneurs (Haynie, Shepherd, Mosakowski & Earley, 2010).

De Winnaar and Scholtz (2020) states that within the construct of the entrepreneurial mindset, is the notion of metacognition. This is defined as a process where strategies are formulated and positioned through a collection of cognitive mechanisms available to the decision-maker. This construct is closely linked to positive decision-making that is adaptable wherein decision-makers within environments of change and uncertainty can make quick decisions drawing from cognitive function.

2.6 Entrepreneurial Identity

There are multiple schools of thought that argued the notion of entrepreneurial identity being context specific. Interpretation thereof is based entirely on an entrepreneur's value system, cultural background, and belief structure within the society in which the entrepreneur operates. This theory also suggests that an entrepreneur's behavior is directly linked to lived experiences. Thus, entrepreneurial identity is both an individual and a collective construct which is formed through lived experiences and social interactions. It can then be stated that an entrepreneur's identity is not innate but relatively dynamic and has the ability to change, based on lived experience and social interaction (Jones et al., 2019). Contrastingly, research also points to the notion that entrepreneurial identity can be influenced and incorporated by culture and creativity (Werthes, Mauer & Brettel, 2018).

For that reason, it is imperative to understand the context in which entrepreneurial identity is produced. The nature of entrepreneurial identity is principally ascribed within the setting wherein it transpires. Consequently, the setting is of paramount importance. Context is associated with the socio-economic environment in which the entrepreneur operates. This includes society, economic and social policy, industry, environment, geographic parameters as well as cultural and acceptable norms (Jones et.al. 2019). Hence, context plays a paramount role and contributes directly to entrepreneurial identity. It provides the social indicators necessary to influence an entrepreneur's identity relative to social belonging and differentiation. Entrepreneurial self-efficacy influences entrepreneurial identity directly and as a result it stands to reason that the dispositional consequence of entrepreneurial identity assists

in the consolidation of succinct expectations and efficacy perceptions which influence entrepreneurial intent (Celuch, Bourdeau & Winkel, 2017).

2.7 Leadership styles

Transactional leadership focuses on achieving goals and outputs through mutually beneficial relationships and interactions. This leadership style puts emphasis on achieving outputs through reward and exception management by both passive and active means. On the other hand, situational or contextual leadership purports the notion that context and environment influence the way in which leaders operate. As a result, the environment and context directly impact a leader's decision-making, behaviour, influence and attitude leading to a change in leadership style dependent on the environment or context in which a leader subsequently leads and makes decisions (Oc, 2018). Within the past decade the concept of contextual leadership research has gained popularity in that multiple scholars have tried to research the construct relative to the environment and circumstances that affects contextual leadership (Oc, 2018).

3. Results and Findings

3.1 Profile of participants

The 14 participants that participated in the research were from multiple industries and provided insight that produced rich data. The largest percentage of participants were found within the information technology industry and the second largest group operating within the trade and services industry. The balance of the participants operates within construction, energy, health care, hospitality, petroleum and mining. One of the key constructs that the study sought to understand were entrepreneurial identity and decision-making. As a result, it was of paramount importance that participants within the study have varying degrees of experience stemming from multiple years' operating as entrepreneurial decision-makers. Thirty six percent of the participants have experience between two to four years, followed by 28% of participants that have entrepreneurial decision-making experience of between 5 and 10 years and lastly 36% of participants with entrepreneurial experience of 15 years and more. All participants had some level of education, with the minimum level being that of a certificate followed by one participant who had a bachelor's degree, 28% of the participants had honours degrees and 50% had master's degrees. This added to the richness of the sample as participants had a high level of academic knowledge and background relative to entrepreneurial decision-making frameworks and models employed within the context of entrepreneurship. Therefore, feedback from these participants relative to frameworks that support or enhance value proposition within entrepreneurial decision-making proved insightful.

3.2 Analysis of data

Three themes were identified and are discussed in the following paragraphs. The findings are presented per identified theme:

3.2.1 Leadership styles and decision-making

The intention of the research was to gain an understanding into leadership styles and decision-making and how effective decision-making could contribute to becoming a competitive advantage for an entrepreneur. Furthermore, it seeks to understand if there is a link between types of leadership styles and entrepreneurial styles, and to what extent does that either enable or hinder entrepreneurial decision-making. From a leadership perspective the research aimed to unpack the extent to which decision-makers are influenced by their leadership styles and to what extent does employing different leadership styles have an influence on decision making.

Participants gave varying views regarding the concept of different leadership styles. Three themes emerged. Relative to decision-making the participants were interviewed in order to understand the type of decision-making styles being employed when making decisions. This then led to probing through the research question the extent to which leadership styles influence entrepreneurial decision-making. Participants outlined what they viewed as the inherent characteristics of decision-making furthermore, it was also outlined that decisions are made relative to the type of leadership styles employed. Themes uncovered from the analysis were found to be focused around leadership styles

that purport collaboration, situational and contextual responses as well as transformational leadership styles and were most commonly employed which subsequently had direct links on the context of collaboration and communication.

Sub-theme 1: Transformational leadership

Participants mentioned the style of leadership they most associate with and employ during the process of decision-making as transformation leadership. Participant 4 mentioned that the transformational leadership style utilizes a collaborative approach, built around the notions of collaboration and transformation as these two constructs should not be viewed as mutually exclusive.

Sub-theme 2: Situational leadership

The second theme that was identified within the data, was that of a situational or contextual leadership style and how adopting it influences decision-making. This style is centered around the environment or context in which decisions are made. When asked about leadership styles relative to decision-making a participant within the information technology sector stated: “So, I really do think that an entrepreneur needs to be able to flex between various leadership styles and know which is the right one for the situation” (Participant 2).

Within the theme of situational leadership, it was mentioned that leaders need to employ particular decision-making styles which overlap with leadership styles within certain contexts. It was furthermore mentioned by all participants who identified with situational leadership styles cited that this particular leadership style is only successful when it is closely related to a collaborative approach through communication.

Sub-theme 3: Collaborative leadership

The third theme identified was collaborative leadership. This style was very closely related to both transformational and situational as participants all mentioned components found within the style of collaboration even though they identified with either transformational or situational styles of leadership. When asked about which styles best describes him, a participant within the information technology industry with more than 15 years of experience and an honour’s degree stated: “Definitely collaborative. And I suppose collaboration leads to transformation. They shouldn’t be mutually exclusive.” (Participant 14).

Another participant, also in the information technology industry, and with also more than 15 years of experience, outlined the importance of connection and communication within collaboration. “I am really interested in connection and collaboration and communication, those are the big things for me, like, I create value, I experience value in the world directly proportional to my ability to connect and communicate effectively with other people” (Participant 11).

Participants thus gave varying views regarding the concept of different leadership styles. The responses showed that transformation leaders need to employ notions of motivation and inspiration as a means to facilitate decision-making. It was further mentioned the transformational leaders must employ a clear vision and come up with new and constructive ways of doing things. Within the theme of situational leadership, it was mentioned that leaders need to employ particular decision-making styles which overlap with leadership styles within certain contexts.

It was furthermore mentioned by all participants who identified with situational leadership styles cited that this particular leadership style is only successful when it is closely related to a collaborative approach through communication. Within the third theme of collaboration as a leadership style the notion was very closely linked to the ability to collaborate by employing effective communication. It was mentioned that in order to effectively create value, communication is key. Additionally, participants outlined that collaboration must be underpinned by a method of consultation and coaching.

3.2.2 Factors influencing decision making within SMME's

A second main theme identified sought to understand the factors within South African SMMEs that affect decision-making. Additionally, participants mentioned barriers or limitations and the extent to which this hindered decision-making. Focus was likewise placed around the characteristics of decision-making and how these characteristics are viewed when it comes to their decision-making function as entrepreneurs.

Moreover, methods, approaches and the business environment within South Africa were probed within the interview to uncover hindrances or enablers as a result thereof. During the process of data analysis three succinct themes emerged through the category grouping. Participants pointed out that risk was a paramount factor of influence within decision-making. They went on to further state that education and skills development played an important role with regards to how entrepreneurs make decisions and the success of it thereof, lastly an important theme that emerged was that of government being a barrier to entrepreneurial decision-making.

Sub-theme 1: Risk as an influence

The first subtheme identified was that of risk. Participants viewed risk from both a financial and non-financial perspective when making decisions. When asked about his view on risk and how they associate risk with the concept of value, a participant within the construction industry stated: "The risk is always higher than the value, because I might lose everything" (Participant 6).

Contrastingly a participant within the information technology sector that has more than 15 years of decision-making experience outlined his view of risk as a positive one. He mentioned that he views risk in an optimistic way by stating that decisions are based on value and therefore outweigh the risk involved. "I think this is actually the definition of an optimist: If you tend to undervalue the risk or over value the upside. By default, I tend to come up with a: 'I'll always believe that there will be a way for, for value to outweigh risk', which is a good reason for me not to bet on spot. I've always defaulted to believing that there is infinite potential for risk and limited potential for value" (Participant 11).

Another participant outlined how her decision-making was influenced by real financial risk and subsequently acted as a barrier and limitation when trying to affect change. Participant 7 stated: "I would say it's definitely again, a financial thing, a cash flow issue. It's very difficult to affect change, and make changes when you haven't got any sort of investment into those changes. The barrier, and the limitations are just the cash flow issues that our particular industry is experiencing at the moment."

Sub-theme 2: Education and skills

Within the sample, one participant had the minimum of a certificate qualification followed by one participant who had a bachelor's degree. However, five participants had an honours degree and seven of the 14 participants had master's degrees. This led to a paramount theme of education and skills being an important factor within decision-making in South African SMMS. All participants viewed skills and education as a key driver for enabling entrepreneurial decision-making. When probed about the effect that education has on decision-making, the participant with a certificate stated: "I actually think that entrepreneurial subjects should be mandatory at schools, because not everyone is born to be a nine to five person. I also believe that if I had a qualification to make better financial and strategic decisions, I would also be able to work on my business not just in my business. And I also be better at delegating and hiring staff to oversee elements of the business."

Another participant within the information technology sector with more than 15 years of experience outlined how, through the development of specific skills, his decision-making ability has improved. Another participant outlined the absolute importance of having entrepreneurial skills as the foundation upon which the decision-maker operates. He stated: "I don't believe that you can be an entrepreneur without being able to think business and innovation! You must spot opportunities and go for it and take a chance" (Participant 5).

Sub-theme 3: Government as a factor

During the interviews participants were asked to give their views on the role that Government plays within the SMME landscape of South Africa. All participants in the survey stated that Government was a barrier and that they received no support or enablement from Government within South Africa, which had a direct impact on decision-making. A participant who operates within the entertainment and advertising industry stated that government offered no support towards enhancing or enabling growth for SMME's and decision-makers.

“So definitely not in my sector, because the entertainment and advertising industry was hit the hardest during the pandemic, and the government offered no support to us. I feel like they should, like Google has. You can do these free courses on Google. And I feel like the government should offer that on the website, like, free courses to become a better entrepreneur, on saving or investing, or in making better financial decisions” (Participant 1).

Another female participant within the information technology sector and with more than 10 years of experience outlined how government processes are a limiting factor within SMMEs. Furthermore, she stated that the small business sector within South Africa plays a fundamental role and as such government support should improve. “I think they could do more in terms of tax relief, especially now during COVID. So, tax, like PAYE. I'm talking about things like skills development levies. We pay our employees their salaries, but we still need to pay government PAYE and all those other things. So, I just feel like we need more support from government. And considering small medium enterprises as the biggest employer in South Africa. I think the government could do way more” (Participant 3).

This was further corroborated by participant who mentioned the importance of the small business sector and its direct link to job creation; however, it was outlined by the participant that government lacks the appetite to support the sector and subsequently entrepreneurial decision-makers within it. “I've been pretty disappointed over the years. I think the start-up and small business sector has a greater opportunity to create employment and shift the needle on our economy more than any other space. And yet government's appetite to support, seems very limited. I assume it is just a function of bureaucracy. So, I think it's a real shame that given the potential that it has, government's appetite for supporting the small business sector has been woefully inadequate” (Participant 11).

An entrepreneur within the trade and services industry outlined that government is a factor within decision-making due to the fact that government does not create open markets for trade within SMME's. “I would say that because government does not create an open market that is free and fair, government play a role in this by mingling and managing the role of SOEs. And in that it's affected how unions and everything else is regulated, which is not fair because that impacts labour laws and the labour laws are, as is, not conducive for small business. The laws are very restrictive with regards to recruiting people, dismissing people or just keeping people engaged. And by doing this, the government has sucked the oxygen out for small businesses to be able to thrive and to innovate, because the cost of labour is one of the big things; then comes the lack of ability to have free and open competition. Only then will small businesses have a fair chance at winning a tender or a piece of work” (Participant 5).

Another participant within the information technology sector and more than 15 years of experience linked the concept of government as a limiting factor to the notion of not understanding the business landscape within which SMMEs is operating and as a result, not having the capacity to control or support it.

3.2.3 Entrepreneurial identity influence decision-making

During the interviews, questions were directed at participants with an intention of understanding entrepreneurial identity and decision-making and how it drives competitiveness within SMMEs.

Within the category groupings methods, approaches and characteristics were probed followed by identity as a construct and its impact on decision-making. Two succinct themes emerged from the

analysis which outlined personal values that enable decision-making as well as how decision-making is a result of lived experience.

Sub-theme 1: Personal values that enable decision-making

The first theme that emerged during the analysis was that of how personal values enable decision-making within SMMEs. When asked about personal values and the influence it has, a participant within the information technology industry stated: “I suppose my personal values are integrity and honesty. So many people who say they have it, don't. My big trait is creativity and just seeking out different ways of doing things. Curiosity, I suppose is definitely a characteristic of mine” (Participant 14).

Another participant linked personal values to that based on religion. She stated that her religious beliefs and views underpin her values which have a direct link and influence on her decision-making capacity: “My personal values are based on Christianity: you don't lie, you don't cheat, you don't steal” (Participant 7). A female participant within the information technology industry outlined that integrity and trust was of paramount importance within the construct of decision-making. She associated her values with that of Christianity as well corroborating the theme as purported by the previous participant.

Sub-theme 2: Decision as a result of lived experience

The second theme that emerged from the analysis of participant interviews was that of entrepreneurial decisions being influenced by their lived experiences. This theme showed how entrepreneurs have subsequently changed the way they make decisions throughout their entrepreneurial journey as a result of a change in identity brought on by lived experiences. When asked about decision-making within his entrepreneurial journey the participant stated that financial status played a huge role in decision-making. “I was making decisions early on, in my entrepreneurial journey, I had very few options. Partly because of my financial status” (Participant 11). He further stated that making decisions from an irrational standpoint usually leads to poor outcomes. “It's hard to think of a worse place to make a decision from than a highly emotional, highly stressed position. I think the other things are ascertaining the motivations for the decisions. If my motivations for making the decisions are initiated, or driven by fear, or envy or any other kind of distract anger, destructive emotion, then the outcomes of that decision are usually going to be pretty poor.”

Another participant outlined how she had to learn through experience the ability to make decisions quickly by taking into account all the necessary factors and in doing so avoiding analysis paralysis. This critical experience has given the participant a competitive advantage. “When it comes to my decision making, I have learned recently to make decisions quickly. I used to be a slow decision maker. I used to ask a thousand questions on what are the risks? How can I mitigate this? Weighing pros and cons - almost get into analysis paralysis. So, when it's coming to my decision making, I've actually learned to make decisions quickly and live with the decisions that I've made, whether they're good or bad. And a lot of my decision-making is based on my moral compass” (Participant 3).

Table 2: A summary of the themes and subthemes influencing entrepreneurial decision-making

Theme Identified	Sub-Theme
Leadership styles influence decision-making	<ul style="list-style-type: none"> • Transformational leadership • Situational leadership • Collaborative leadership
Factors within the SMME influencing decision making	<ul style="list-style-type: none"> • Risk • Education and Skills • Government
Entrepreneurial identity influences decision-making	<ul style="list-style-type: none"> • Personal values • Lived experiences

3.3 Discussion and implications

The first theme that was identified, was transformation leadership as a style that entrepreneurs employ when making decisions relative to the business as well as leading their employees. Anderson and Sun (2017) stated that transformational leadership style employs focus on achievement of goals through means of motivation and progression. Transformational leadership style utilizes a collaborative approach built around the notions of collaboration and transformation as these two constructs should not be viewed as mutually exclusive. Situational or contextual leadership styles were also identified as influencing decision-making. This is supporting Oc, (2018), who stated that, situational or contextual leadership purports the notion that context and environment influence the way in which leaders operate. As a result, the environment and context directly impact a leader's decision-making, behaviour, influence and attitude as a result leading to a change in leadership style dependent on the environment or context in which a leader subsequently leads and makes decisions (Oc, 2018).

Within the past decade numerous reports have focused on decision-making theories and its long-standing links within the field of entrepreneurship-research. Decision-making as a theory surrounds itself with the construct of cognitive processing as well as methodology that exercise thinking in situations where entrepreneurs are faced with identifying, creating or exploiting opportunity (Grichnik, Baier & Faschingbauer, 2016).

Risk from both a financial and non-financial perspective are important when making decisions. Entrepreneurs associated risk with the concept of value associated to the potential risk. One explanation for this can be outlined in the theory of effectuation reported by Sarasvathy (2008). Entrepreneurs need to develop products and services and capture or deliver these products to new markets in a way that reduces the potential for losses and subsequently leads to economies of scale relative to resources and or capital investments, and in doing so, ensuring that risks are both managed and reduced (Sarasvathy, 2008; 2009). Risks must always be benchmarked against the relative loss that could be realized.

Education and skills play a huge role in enabling decision-making within South African SMME's. Through the development of specific skills decision-making ability improves and there are definite benefits to education and skill as an enabler within decision-making. Pettigrew (2014) confirmed that decision-making protagonists are rational as they pursue maximum efficacy through means of having absolute knowledge when faced with a problem, potential solutions and the outcomes of each thereof. Entrepreneurs are of the view that a qualification would help facilitate better decision-making as long as you are able to apply the teachings through a process of experience.

Government is the biggest limitation and barrier to decision-making within South African SMMEs. Entrepreneurs stated that they received no support from Government within South Africa which had a direct impact on decision-making.

Within the context of decision-making, it can be argued that uncertainty can be found in multiple forms. This can have a negative effect on decision makers whereby entrepreneurs avoid making decisions due to uncertainty. Freidrich (2016) states that South Africa finds itself in a precarious position with regards to the survival rate of SMMEs as compared to other countries globally. Research shows that around 75% of SMME's within the first few years of business fail.

This failure can be attributed to various compounding reasons which are of both an internal and an external nature. It is therefore evident that even though SMMS within South Africa are the largest contributor towards GDP, Government still provides no support for entrepreneurial decision-makers and hence finds itself as the biggest barrier when trying to serve its agenda of poverty reduction and decreasing unemployment. Contrastingly however the National Development Plan states South Africa intends on developing SMME's with the intention of expanding the economy, creating jobs and the reduction of unemployment (National Planning Commission, 2011).

Personal values are viewed as a key enabler for entrepreneurial decision-making. Entrepreneurs within the study outlined how they based their personal values to that on religion and how these views underpin their values which have a direct link and influence on their decision-making capacity. It was also stated that integrity and trust was of paramount importance within the construct of decision-making.

Personal values can be linked to Sarasvathy's (2008) bird-in-hand, whereby entrepreneurs make decisions and create entrepreneurial opportunities based on their own personal means of who they are and what they stand for.

Lived experience is also a key driver and an enabler within decision-making. Entrepreneurs have subsequently changed the way they make decisions throughout their entrepreneurial journey as a result of a change in identity brought on by their lived experiences. Entrepreneurs learned through experience the ability to make decisions quickly by considering all the necessary factors and in doing so avoiding analysis paralysis. It can then be stated that an entrepreneur's identity is not innate but relatively dynamic and has the ability to change based on lived experience and social interaction (Jones et al., 2019).

Furthermore, participants delineated how change was a central factor within lived experience that determined and expanded the way in which decisions were made from inception as an entrepreneur to the current state and this all centred around learning how to deal with specific constructs relative to people and technology and subsequently how decisions are made. Sarasvathy (2009) supported this stance by dictating that entrepreneurs are able to establish the means within their disposal through lived experience and introspection which directly relates to entrepreneurial knowledge, social capital and acquired networks.

4. Conclusion

One of the main findings stated that transformational, situational and collaborative leadership styles have a direct influence on entrepreneurial decision-making. When employing these leadership styles entrepreneurial decision-makers were able to effectively navigate the decision-making process within the SMME landscape. Risk is a paramount factor of influence within decision-making. So are education and skills development when it comes to making decisions and being successful in the process. It seems however, as if Government, and its lack of support, is experienced as a barrier to entrepreneurial decision-making. This came as a shock since SMMEs are playing such a huge role in economic growth and job creation, which is considered to be a high priority for Government.

Another identified theme, playing a huge role in the decision-making process, is the personal values as a construct of entrepreneurial identity. Integrity, trust and an ethical way of doing things (influenced in many cases by religious convictions) inspire decision-making. Linked to this theme, is the lived experiences of entrepreneurs as a factor that has a direct impact and influence on decision-making within South African SMMEs.

It seems as if effective decision-making processes can lead to a competitive advantage, because the quicker and more effective one can make a decision, the better your business will benefit.

4.1 Limitations

A key limitation here was that 85% of the participants had a minimum of an honours degree. Of the participants, 50% had a master's degree qualification. This could have skewed the results in that it could have impacted the ability of participants to give views that reflected a general perspective from those that had lower educational qualifications.

A longitudinal study could also have produced different results. The COVID-19 pandemic was also a limitation as it has caused multiple industries to close and have also led to extreme conditions under which decision-makers have had to make decisions over the past two years and hence this dramatic

shift could have impacted the data. This research however explores this important topic and some conclusions were made.

4.2 Suggestions for future research

Future research could look into emerging technology, artificial intelligence and the Internet of Things, and how this can influence entrepreneurial decision-making. A longitudinal investigation on how entrepreneurial identity changes over-time and how it influenced decision-making in different phases of life, can also be of interest. A model to test relationships should be developed and tested.

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Is It a Bird? Is It a Plane? Entrepreneurship and Other Things That (Do Not) Fly

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Keywords

Critical entrepreneurship studies; terminology confusion; entrepreneurship as a development apparatus (EDA); new conceptual framework;

Abstract

The entrepreneurship ideology presents all the concepts included under the conceptual entrepreneurship umbrella as essentially the same activity, and drives the knowledge claim that anything labelled “entrepreneurship” has equal potential to contribute to economic growth and job creation. This paper argues that merely highlighting the heterogenous nature and refining the typologies of everything included in the conceptual entrepreneurship umbrella will not bring the paradigmatic break and new narrative needed to challenge the assumptions inherent in mainstream entrepreneurship theory. It calls for the unbundling of the meta-theoretical conceptualisation of “entrepreneurship”. With the input from 13 experts in the field of entrepreneurship and critical management studies (by means of a Delphi study), it opens this critical dialogue by revisiting the inceptive boundaries of the entrepreneurship domain and demarcating the boundaries for the fidelity entrepreneurship concept. Finally, it proposes a new conceptual framework for enterprise theory, illustrating how changing ideological, value-laden terms such as “entrepreneurship” can bring about the paradigmatic break needed to move entrepreneurship theory past an impasse.

1. Introduction

The word “bird” (scientific class “Aves”) invokes a general image of a feathered, winged, flying animal. However, not all bird species can fly (examples being ostriches and penguins) even if they share many other characteristics with the scientific class “Aves”. Furthermore, not everything that flies can be scientifically classified as “Aves” – think of mosquitos and aeroplanes. Things that fly can be birds, but not everything that flies is a bird. If aeroplanes are included in the scientific class “Aves” because they share some characteristics with birds, logical research questions would include “why don’t planes lay eggs?” or “what interventions can be taken to help planes lay eggs?”. However, aeroplanes are not included in the scientific class “Aves” simply because they have wings and because they can fly.

In the same manner, it has become imperative to distinguish what entrepreneurship is from what entrepreneurship can be (Bögenhold, 2020). The current mainstream conceptualisation labels a number of diverse phenomena as “entrepreneurship”, because these phenomena share some characteristics with or have historically developed from entrepreneurship theory. The entrepreneurship ideology presents all these concepts included under the conceptual entrepreneurship umbrella as essentially the same activity, and drives the knowledge claim that anything labelled “entrepreneurship” has equal potential to contribute to economic growth and job creation (Smit and Pretorius, 2021). Based on this ideology, entrepreneurship has become appropriated as a development apparatus across the Global South. Entrepreneurship as a development apparatus (EDA) is defined as the implementation of entrepreneurship support programmes (such as training, incubation, mentoring and funding) for individuals with little or no entrepreneurial experience, especially in economically marginalised communities, and with little or no other options for employment, based on the

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assumption that such interventions will result in high-growth entrepreneurial ventures that create a significant number of meaningful jobs (Smit & Pretorius, 2020).

A number of critical scholars have called for exposing the myths and assumptions inherent in the mainstream entrepreneurship ideology by highlighting the heterogeneous nature of the term “entrepreneurship” (i.e. Calás, Smircich & Bourne, 2009; Poole, 2018; Verduijn & Essers, 2013). Other scholars have attempted to refine the typologies or classification of everything included in the conceptual entrepreneurship umbrella (for a summary see Kuada, 2015). However, this paper argues that merely highlighting the heterogeneous nature and refining the typologies of everything included in the conceptual entrepreneurship umbrella will not bring the paradigmatic break and new narrative needed to expose the myths and assumptions inherent in mainstream entrepreneurship theory. It argues that not everything that “flies” can scientifically be classified as belonging to the scientific class “entrepreneurship” and therefore calls for the rejection of the entire meta-theoretical conceptualisation of “entrepreneurship” and the unbundling of the conceptual umbrella.

This paper opens this critical dialogue by revisiting the inceptive boundaries of the entrepreneurship domain and demarcating the boundaries for the fidelity entrepreneurship concept. Focusing on the product resulting from EDA it highlights how some enterprises cannot be included under the conceptual entrepreneurship umbrella by default and rather have to be “un”trepreneuried. Finally, it proposes a new conceptual framework for enterprise theory (see figure 2), illustrating how changing ideological, value-laden terms such as “entrepreneurship” can bring about the paradigmatic break needed to move entrepreneurship theory past an impasse.

2. Problem Investigated

2.1 The entrepreneurship umbrella

The process of defining entrepreneurship has evolved since the first mention of the term in the 18th century (Nieuwenhuizen, 2019) and the contents of the term “entrepreneurship” has changed significantly over time (Bögenhold, 2020). It has become a multifaceted and polysemous umbrella term under which a broad hodgepodge of research is included (Bögenhold, 2020; Dey, 2020; Shane & Venkataraman, 2000). The umbrella term represents a multifaceted concept that cuts across a number of disciplinary boundaries and entails a complex set of contiguous and overlapping constructs (Katz, 2003; Kaufmann & Dant, 1999). The term includes many different contents, domains, origins and destinations (Baker & Welter, 2020; Bögenhold, 2020).

However, critical scholars argue that the word has come to mean both everything and nothing (da Costa & Silva Saraiva, 2012). There is a general lack of consensus on what entrepreneurship is, and what it is not (Bögenhold, 2020). In the absence of a precise demarcation, the term has evolved to include a variety of different meanings and interpretations simultaneously. Because the boundaries of the field of entrepreneurship are not clearly defined, a weak paradigm for entrepreneurship theory is promoted (Urban, 2010). Phenomena that are loosely related – by having started a venture, for instance – are (erroneously) classified as belonging to the same scientific family by default (see figure 1). The inceptive boundaries of the umbrella term have been expanded to incorporate more or less all of humanity (Poole, 2018). The entrepreneurship discourse has turned everything into entrepreneurship and everyone into an entrepreneur (Örtenblad, 2020).

This confusion surrounding the definition and boundaries of the entrepreneurship umbrella is, however, largely ignored and the scholarly entrepreneurship community has adopted an apparent universal orthodoxy (Bögenhold, 2020; Talmage & Gassert, 2020).

2.2 The umbrella assumption

The overly positive image of entrepreneurship is shrouded in ideological mystification (Jones & Murtola, 2012). The assumed characteristics are extended to all concepts included under the entrepreneurship umbrella and, in this manner, expects the same results from any and all types of practices included in this conceptual entrepreneurship framework (Smit & Pretorius, 2021). Terms included under the umbrella are often conflated, overlapping, used interchangeably and without

precision or consistency (Poole, 2018; Smit & Pretorius, 2021). Using the terminology in this manner supports the knowledge claim that any and all types of entrepreneurial activity are essentially the same. What is more, tools and concepts that are developed for entrepreneurship in a very specific context are unquestioningly and uncritically extended to any phenomenon included under the entrepreneurship umbrella (Kuada, 2015:150; Steyaert, 2007). In this manner entrepreneurship theory becomes extended too far outside of the context for which it was developed (Baker & Welter, 2020; Naudé & Havenga, 2005; Verver, Roessingh & Passenier, 2019). To put it another way: the theory of ornithology is extended to answer questions about aeroplanes.

Flowing from this erroneous classification is the umbrella assumption that everything scientifically classified as “entrepreneurship” will contribute equally to economic growth and job creation. However, data is continuously showing that only a select few of who we classify as “entrepreneurs” “will create the businesses that will take people out of poverty, encourage innovation, create jobs, reduce unemployment, make markets more competitive, and enhance economic growth” (Shane, 2009). In fact, not all enterprises can even be considered entrepreneurial (Kuada, 2015). The reality is that the majority of what is classified as “entrepreneurship” has no prospect to survive past three years, let alone contribute significantly to job creation. The erroneous classification and resulting terminology confusion inherent in the mainstream entrepreneurship discourse is leading to misunderstandings, political hegemony and epistemic violence and the term can no longer be used scientifically in the way that it is currently conceptualised (Bögenhold, 2020; Smit & Pretorius, 2020; Smit & Pretorius, 2021). This paper argues that the umbrella assumption has become inseparable from the ideologically loaded term “entrepreneurship”. However, mainstream research is continuously conceptualising everything included under the entrepreneurship umbrella as homogenous (Calás et al., 2009; Vivarelli, 2013).

Although this terminology confusion is a concern from a Global North perspective (for a summary see Örtenblad, 2020), it becomes even more problematic in a context where entrepreneurship is appropriated as a development apparatus in marginalised communities, believing these “*erga omnes*”, “the-more-the-merrier” EDA interventions to be a guaranteed ticket out of poverty, the silver bullet for economic emancipation, a catalyst for growth and a vehicle for the redress of past injustices (Honig, 2017; Poole, 2018; Urban, 2020). Based on this belief, a significant number of resources are pushed toward supporting an ever-increasing number of start-ups (Vivarelli, 2013). Based on the resource-based view, it is assumed that these increased resource inputs will propel EDA start-ups into success. Governments and development organisations also continuously reinvest in these start-ups when they become distressed (Pretorius, Le Roux, Rosslyn-Smith & Letsholo, 2021).

However, the product of EDA is failing abysmally in creating any empowerment or upward mobility for the marginalised communities it aims to emancipate, and does not contribute significantly to job creation (Honig, 2017; Naudé, 2011; Shane, 2009). In spite of appearing to have little in common with fidelity entrepreneurship, the product resulting from EDA is included in the entrepreneurship umbrella (see figure 1).

3. What Is In a Name?

Language is not merely a collection of a few words that are strung together unintentionally. It is also not neutral, unambiguous and objective. By choosing a specific word over another, or omitting some details in a description while including others, a specific version of the world is intentionally created (Rapley, 2011). Consider for example: in 1990, Nelson Mandela is freed after 27 years in prison. One newspaper headline reads “Freedom fighter finally released after 27 years”. Another headline reads “Terrorist released after only 27 years”. The two headlines not only present two vastly different realities, but they also create two vastly different realities. Language thus serves “as the mediator for constructing reality” (Achtenhagen & Welter, 2007). The way in which language is intentionally used to construct a specific reality has definite consequences (Ziai, 2013).

Scholarly discourses also have definite consequences when the knowledge claims presented in these discourses are used to influence policy. Through naturalising the umbrella assumption,

entrepreneurship has become an ideology discourse that deadens all critical faculties (da Costa & Silva Saraiva, 2012; Verduijn, Dey, Tedmanson & Essers, 2014). The entrepreneurship umbrella and the resulting umbrella assumption create the impression that EDA interventions will produce large numbers of successful, high-growth entrepreneurial ventures that will ensure economic emancipation for the beneficiaries and create a significant number of jobs across the Global South where unemployment and poverty are rife. Merely refining the typologies and renaming categories under the entrepreneurship umbrella will not challenge the core assumption that everything and anything included under this conceptual umbrella is essentially the same heroic activity that will contribute significantly to economic growth, job creation and emancipation of the marginalised. The ideological image evoked by the word “entrepreneur” has become so embedded in mainstream public and scholarly discourse, that a reinvention of the term would be near impossible and, if possible, would take too long. Rather, this paper addresses the terminology confusion and resulting assumptions by rejecting the entire meta-theoretical conceptualisation of entrepreneurship and presenting a new conceptual framework for the theory of enterprises.

4. Research Objectives

This paper aims to highlight the restrictive impact of the current mainstream theoretical conceptualisation of “entrepreneurship” and introduce an alternative conceptual framework for rethinking entrepreneurship theory. It furthermore rejects the taken-for-granted assumption that the product of EDA can be included in the conceptual entrepreneurship framework. It responds by proposing an alternative conceptual frame for “enterprise theory” that separates the product of EDA from the mainstream entrepreneurship domain (figure 2). In proposing this new conceptual framework, this paper aims to do the following:

- Challenge the mainstream entrepreneurship discourse that is resulting in terminology confusion, political hegemony and epistemic violence.
- Initiate and stimulate a critical dialogue in the scholarly discourse relating to EDA, in particular, and the meta-theoretical conceptualisation of the entrepreneurship umbrella, in general.
- Propose realistic expectations for the enterprises resulting from EDA.

The paper will proceed in the following manner: Firstly the inceptive borders of the entrepreneurship umbrella are critically revisited to clearly demarcate the domain of fidelity entrepreneurship. Thereafter a short overview of the development of entrepreneurship theory is given to illustrate how each of the inceptive borders have been extended. Thirdly, the product of EDA is discussed against this demarcated domain of fidelity entrepreneurship, illustrating the characteristics that these enterprises have in common and where they differ. Finally, flowing from this discussion and with the input of 13 experts in the field of entrepreneurship, a reconceptualised umbrella for the theory of enterprise (an umbrella that includes fidelity entrepreneurship and the product of EDA) is proposed.

5. Research Methodology

This paper emphasises the importance of bringing a critical, reflexive, metatheoretical perspective to management study (and specifically entrepreneurship theory study) in South Africa (Goldman, 2016; Ruggunan, 2016; Van der Linde, 2016). It argues that a more-of-the-same, positivist, quantitative enquiry will not bring answers to the research problem highlighted above. It therefore moves away from the mainstream entrepreneurship ontology and associated quantitative methodologies, and is purposefully grounded in a critical entrepreneurship paradigm in an attempt to question and challenge the assumptions embedded in mainstream theorising. It argues that the theory of entrepreneurship cannot be further developed and expanded if it is not reframed epistemologically from a positivist to a critical perspective.

It will incorporate the four components of critical thinking (Brookfield in Almesson and Willmott, 2003):

1. *“Identifying and challenging assumptions behind ordinary ways of perceiving, conceiving, and acting;*
2. *Recognising the influence of history, culture, and social positioning on beliefs and actions;*
3. *Imaging and exploring extraordinary alternatives, ones that may disrupt routines and establish orders;*
4. *Being appropriately sceptical about any knowledge or solution that claims to be the only truth or alternative.”*

When the qualitative Delphi methodology was first used in the 1950s, consensus of opinion was sought based on the “bandwagon effect” or the “halo effect”, referring to the phenomenon where individuals conform to the majority opinion (even if they do not necessarily agree with it) (Greatorex & Dexter, 2000; Mulgrave & Ducanis, 1975). This means that the facilitator of a Delphi study would present the findings from a previous round to persuade the panellists to change their opinion to reflect the majority view. However, over the years variations of the Delphi method have been developed for a variety of situations where expert problem solving is required (Okoli & Pawlowski, 2004) – such as the complexity of the entrepreneurship umbrella.

The Delphi methodology is essentially qualitative (Wardner, 2013), although summarising the expert opinions leads to a degree of quantification (Linstone & Turoff, 1975). It provides a method for obtaining, refining and communicating the informed judgments of knowledgeable people (Ludlow, 1975). The Delphi methodology is commonly described as “a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem” (Steinert, 2009) by measuring professional opinions rather than objective facts (Schmidt, 1997). The structured group discussion that is facilitated in the Delphi methodology is a way to raise issues for debate by, inter alia, revisiting knowledge claims in the subject of study (Hasson, Keeney & McKenna, 2000; Wardner, 2013). The Delphi methodology also has the ability to act as a tool for new framework development and theory building (Okoli & Pawlowski, 2004). All of the above characteristics makes the Delphi a suitable vehicle to address the research question presented in this paper. Due to the Covid-19 pandemic, travel and physical contact were discouraged at the time of this study. The Delphi methodology presented a practical solution for gathering experts’ opinions on the research problem.

At the onset, the researchers aimed to determine if a panel of experts in the field of entrepreneurship and/or critical management studies can reach consensus on the boundaries of the fidelity entrepreneurship domain, and whether the product of EDA falls inside or outside these identified boundaries. The researchers anticipated that a number of panellists would be from a positivist, uncritical research tradition that does not necessarily agree with the premise that the entrepreneurship umbrella has been extended too wide. The Delphi methodology was thus approached in a way that abled panellists to contribute to the conversation without having to agree with the critical stance toward the conceptual entrepreneurship framework. During the second-round data analysis, it became clear that the terminology confusion inherent in the entrepreneurship discourse also has an impact on the experts’ responses in this study. This resulted in a change of course mid-method, by substituting all generic, value-laden terms (such as “entrepreneurial”) with specific examples in the final round. These challenges and adaptations are discussed in more detail in step 6 below.

The following section explains the approach and method used, based on the steps for Delphi studies developed by Hasson, Keeney and McKenna (2000). Using this checklist provided structure to a practice that has at times been accused of being arbitrary. The expert opinions expressed during this Delphi process guided the process of rethinking the mainstream entrepreneurship framework, presented in the conclusions of this study.

Step 1: The background

The research problem was identified based on extant entrepreneurship literature from both mainstream and critical schools of thought. The research problem underlying the research in this study influenced the application of the Delphi methodology (Mitroff & Murray, 1975).

Step 2: Selecting the expert panel

Delphi studies generally require as few as five to ten panellists from a homogenous group of subject matter experts, such as the carefully selected panel in this study (Loo, 2002). Persons who are affiliated with a tertiary academic institution in South Africa in the field of entrepreneurship and/or critical management studies were purposively selected to form part of the panel. Twenty-one potential expert panellists were approached for participation in the study, with the aim of assembling a panel of 12 experts. This would leave room for panellists potentially withdrawing in rounds 2 or 3 of the study. Thirteen panellists indicated that they were willing to participate by completing the first-round open-ended questions and all of these experts remained part of the process to the end of round 3. Responses were treated anonymously in all three rounds. Two of the panellists indicated that they were practically involved with EDA interventions, while four were knowledgeable in the field of critical entrepreneurship studies.

Step 3: The iterative rounds

Ideally, the iterative rounds in a Delphi study will continue until consensus is reached, or results become repetitive, or when the panellists reach an impasse (Loo, 2002). However, the majority of Delphi studies limit the number of rounds from the onset to ensure maximum response rates from panellists in ongoing rounds (Hasson et al., 2000). Being respectful of the panellists' time, this study clearly communicated to the potential panellists that the study would be limited to three iterative rounds. The first round consisted of a questionnaire with two open-ended questions, while the second and third rounds consisted of structured questionnaires.

Step 4: The questionnaires

The first round consisted of two open-ended questions that ask the panellists' opinions on the role of entrepreneurship and EDA in economic growth and job creation. Round 1, supported by a thorough literature review, then provided a departure point for developing the structured questionnaire for round 2.

The round 2 questionnaire was introduced by a cover letter that set out the background and aim of the study, including the meta-theoretical critique that the boundaries of the entrepreneurship umbrella have been extended too far and that the current framework is being revisited. This round's questionnaire consisted of three sections: the entrepreneurship domain, other enterprises included in the entrepreneurship umbrella and the product of EDA. These three sections comprised two open-ended questions and 31 statements with a 9-point Likert response. The third-round questionnaire excluded the section on other enterprises in the mainstream entrepreneurship domain, but introduced three new questions relating to the panellists' knowledge of critical entrepreneurship studies and their practical involvement with EDA.

Because the questionnaires in rounds 2 and 3 measured abstract opinions rather than absolute judgment, a 9-point Likert scale was used (Wardner, 2013). The questions in rounds 2 and 3 were presented as statements where panellists are requested to give their opinion on each statement, with 1 representing "strongly disagree" and 9 representing "strongly agree". The aim of the iterative rounds of questionnaires was to produce a "funnelling effect" (Loo, 2002) that moves from the more general to the more specific, aiming to establish the scholarly consensus (and in some cases dissensus) on themes relating to the mainstream entrepreneurship umbrella. Each of the structured questionnaires also provided a number of sections for open-ended feedback, although these were optional. The questionnaires were checked by a retired expert in the field of entrepreneurship and a statistician prior to sending them to the panellists.

Step 5: Predefining consensus

The responses in each round were coded as follows: if panellists selected options 1, 2 or 3, they were considered as disagreeing with the statement. If panellists selected options 7, 8 or 9 they were considered as agreeing with the statement (similar to Putnam, Spiegel & Bruininks, 1995). Options 4, 5 and 6 were considered neutral responses and not included in the tallying of responses that agreed or

disagreed with a statement. Consensus in this study was predetermined at 70%. This means that the panel is regarded to have reached consensus on a specific theme of at least 70% (or nine of the 13 panellists) agreed or disagreed with a statement by selecting the top three (7,8 or 9) or bottom three (1,2 or 3) measures on each of the Likert items. Predefining the level of consensus before the onset of the analysis contributes to the reliability and validity of the study (Schmidt, 1997; Williams & Webb, 1994).

Step 6: Issues that guided the data collection – adjusting to a curve ball

The researchers expected a divergence of opinions between panellists who are supportive of and those who are critical of EDA. They were prepared to follow the guidelines for a policy Delphi study that seeks to generate the strongest possible opposing views and thus welcomes dissensus (Steinert, 2009). However, the second-round data analysis revealed a more complex challenge that resulted in a change of course in the final round. The responses in the second round did not reveal two diverging opinions as expected, but rather a “shotgun” pattern with a multitude of responses for a number of the items (see the standard deviation in round 2 in tables 2 and 3 that illustrates this).

The entrepreneurship discourse is known for providing contradictory and inconsistent definitions and interpretation of key concepts (Kaufmann & Dant, 1999). The researchers concluded that the multiple responses in round 2 were not necessarily due to conflicting opinions on the subject, but rather a manifestation of the terminology confusion inherent in the entrepreneurship discourse: all panellists seemed to be giving their opinion based on their own interpretation of the value-laden term “entrepreneurial”. Therefore, in the final round, the terminology confusion was addressed by asking all panellists to give their prototype example of “an entrepreneur” and to insert this name in the statements that followed. For instance, a statement in the second round questionnaire that aimed to determine if innovation is to be considered a boundary of the fidelity entrepreneurship domain read: “Enterprises that are not innovative can be considered *entrepreneurial*”. This statement was changed in the final round to read: “If (insert name of your example of a prototype entrepreneur here) was not innovative they still would have built the business(es) that they have”.

This curve ball led the researchers to expand the research problem to address an additional question: how does the use of generic, value-laden terms (like “entrepreneurial”) influence the expert opinion in the entrepreneurship discourse? This meant placing less emphasis on reaching consensus or highlighting the diverging views on the key concepts that form the boundaries of the entrepreneurship domain in the third round, and rather illustrating how the terminology confusion in the mainstream entrepreneurship umbrella is obscuring the important distinction between what entrepreneurship “is” as opposed to what it “can be”. However, as the results indicate, changing the terms from the value-laden, generic “entrepreneurial” to specific examples led to the panel organically reaching consensus on a number of statements.

Step 7: Presenting the final results

The results from rounds 2 and 3 of the Delphi study are presented in tables 1, 2 and 3 by highlighting the percentage of support for each item, the mean values representing the aggregate rank of each item and the standard deviation to indicate the spread of the group response around the mean (Greatorex & Dexter, 2000; Holey, Feeley, Dixon & Whittaker, 2007; Schmidt, 1997). The size of the sample is considered too small to warrant the use of parametric statistical analysis (Kalaian & Kasim, 2012). The tables show the results for the two rounds side by side to indicate how the consensus, mean and standard deviation shifted when generic terms were substituted with specific examples to counter the terminology confusion inherent in the discourse. In the final section, these findings in relation to the fidelity entrepreneurship boundaries and the product of EDA inform the discussion on the boundaries of the entrepreneurship domain. This discussion additionally highlights how the terminology confusion influences the group opinion. Lastly, these experts’ opinions inform the proposed new conceptual framework for the theory of enterprises.

6. RESULTS FROM THE DELPHI PROCESS

Table 1: The boundaries of the entrepreneurship umbrella

	Theme	Consensus ¹		Mean ²		Standard deviation ³		Mean rank (third round) ⁴
		Round 2	Round 3	Round 2	Round 3	Round 2	Round 3	
1	Innovation	62%	77%	3,62	2,15	2,66	1,72	3
2	Identify opportunity	62%	92%	4,15	2,00	2,88	1,68	1
3	Act on opportunity	54%	85%	4,62	2,00	3,04	1,91	1
4	Independence	54%	70%	3,85	3,08	3,05	1,93	5
5	Grow in terms of turnover	38%	54%	4,69	4,31	2,63	2,93	9
6	Aspire to grow in terms of turnover	85%	77%	2,69	2,62	2,02	2,71	4
7	Grow in terms of jobs	46%	46%	5,31	4,46	2,84	2,70	10
8	Aspire to grow in terms of jobs	31%	54%	4,54	3,92	2,47	2,60	8
9	Financial risk	70%	70%	3,31	3,31	2,14	2,87	7
10	Personal risk	70%	70%	3,00	3,08	2,24	2,84	5

Source: own compilation

¹The consensus threshold of 70% or higher was predetermined.

²A mean closer to 1 indicates stronger agreement.

³Lower standard deviation shows increased agreement or convergence of views.

⁴Items were not ranked by the panel, but mean rank gives an indication of the importance placed on each item.

Table 2: Other enterprises included in the entrepreneurship umbrella

	Consensus	Mean	Standard deviation
Small business is not entrepreneurship	85%	2,38	1,50
Micro-enterprise is not entrepreneurship	77%	2,77	2,49
Self-employment is not entrepreneurship	70%	3,08	2,25
Survivalist enterprise is not entrepreneurship	85%	2,23	2,49
Necessity-motivated enterprise is not entrepreneurship	85%	2,00	1,41
Start-up enterprise is not entrepreneurship	54%	4,08	2,72
Start-up enterprise will not result in high-growth ventures	100%	1,31	0,63

Source: own compilation

Table 3: The product resulting from EDA

	Theme	Consensus		Mean		Standard deviation		Mean rank (third round)
		Round 2	Round 3	Round 2	Round 3	Round 2	Round 3	
1	Unlikely to result in high-growth venture	54%	70%	3,85	2,62	2,38	2,36	6
2	Unlikely to survive without mentorship	62%	85%	3,31	1,92	1,97	1,38	2
3	Unlikely to survive without grant funding	85%	85%	2,46	2,08	1,39	1,50	3
4	Unlikely to generate resources internally	54%	62%	3,08	3,23	1,71	1,74	9
5	Unlikely to create innovative new product	54%	85%	3,69	2,54	2,29	1,61	4
6	Unlikely to create innovative new process	54%	77%	4,15	2,69	2,51	1,55	7
7	Unlikely to grow without grant funding	38%	54%	2,77 ¹ (6,23) ²	2,54 (6,46)	1,36	1,76	4
8	Unlikely to grow in terms of turnover	46%	70%	4,46	3,15	2,18	1,68	8
9	Unlikely to take financial risks	31%	38%	5,00	4,62	2,04	2,18	10
10	Unlikely to take personal risks	23%	38%	5,23	4,69	2,05	2,02	11
11	Beneficiary would prefer job over running their own business	15%	77%	3,85 (5,15)	1,31 (7,69)	2,19	1,49	1
12	Unlikely to create jobs outside of the immediate family ³		70%					

Source: own compilation

¹Inverse value.

²Actual value.

³This question was not a Likert item.

7. Revisiting The Inceptive Boundaries Of The Entrepreneurship Umbrella

7.1 Fidelity entrepreneurship

In the continuous process of making the conceptual entrepreneurship umbrella more inclusive, the inceptive boundaries of the domain of entrepreneurship have often been extended or even abandoned (figure 1). The term “fidelity entrepreneurship”, coined by Pretorius et al. (2021), is used in this study to refer to the entrepreneurship domain as it was demarcated before the inceptive borders of the umbrella were extended. The authors are fully cognisant of the fact that the act of demarcating the field of “entrepreneurship” has been attempted by almost every scholar in the field and that there is currently little agreement on what fidelity entrepreneurship ought to be. They are also cognisant of the fact that “entrepreneurship” has become a very complex concept that carries many different meanings for different people (Gartner, 1990). However, this paper argues that it is this very lack of agreement on clear boundaries of the entrepreneurship domain that has led to the terminology confusion, the

umbrella assumptions and the resulting hegemony and epistemic violence highlighted by critical entrepreneurship scholars. To address this, it has become imperative to clearly demarcate the boundaries of a fidelity entrepreneurship domain, even if those boundaries at first glance appear to present an over-simplification of a complex problem.



Source: own compilation

Figure 1: The fallacious entrepreneurship umbrella

Unbundling and reconceptualising the entrepreneurship umbrella do not imply that phenomena that are “un”trepreneuried deserve any less scholarly interest. Although not the same, the economic and social roles that these phenomena fulfil are not regarded as any less noteworthy than those of fidelity entrepreneurship. However, unbundling and reconceptualising the myriad of concepts included under the entrepreneurship umbrella will create realistic expectations of the role that each of these phenomena can play within a broader enterprise ecosystem. Although the focus of this study is on fidelity entrepreneurship and the product resulting from EDA, specifically, other enterprises included under the entrepreneurship umbrella are also discussed briefly.

This paper proceeds by going back to the conceptual drawing board to underscore the inceptive boundaries of the fidelity entrepreneurship domain. Key concepts are identified from extant literature and confirmed through the Delphi panellists’ personal definitions of “entrepreneurship”. From this process, the boundaries for the fidelity entrepreneurship domain are drawn as: *opportunity, starting a venture, innovation, intention and ability to grow, independence, risk taking and reward beyond survival*. These boundaries of the fidelity entrepreneurship domain are now illuminated by firstly indicating how the concept was included in the inceptive entrepreneurship domain, and then briefly discussing how each boundary was redrawn following developments in the field of entrepreneurship research, in general, but also in the context of EDA, specifically.

7.2 Boundary 1: Opportunity

Kuratko (2007) describes entrepreneurs as “*individuals who recognize opportunities where others see chaos, contradiction, or confusion*”. Entrepreneurship then becomes the act of identifying and exploiting these identified opportunities (Acs, 2006). Recognising and acting upon an opportunity are placed centrally in most attempts at defining the field of fidelity entrepreneurship, such as the oft-cited demarcation by Venkataraman (1997):

“Entrepreneurship as a scholarly field seeks to understand how opportunities to bring into existence ‘future’ goods and services are discovered, created and exploited, by whom, and with what consequences”.

This inceptive boundary was extended with the realisation that not all entrepreneurs are pulled toward entrepreneurship. In this regard, the construct “necessity entrepreneur” was introduced to refer to persons whose motive for being pushed into entrepreneurship is a lack of any options for work other than self-employment (Acs, 2006). It is important to note, however, that necessity entrepreneurs generally have lower economic outcomes, lower survival rates and a lower propensity for employment creation than opportunity entrepreneurs (Shane, 2009; Vivarelli, 2013). Poole argues that the very notion of necessity-motivated entrepreneurs is questionable, because the concept of opportunity has to be central in any realistic model of entrepreneurship (2018).

In the Global South, where unemployment and poverty are rife, the term “necessity entrepreneurship” has been extended even further. The lack of opportunities in the wage sector pushes large numbers of unemployed persons into self-employment activities. These persons are not only unemployed, but often have few skills and limited capital, and starting some kind of enterprise is easier than finding an employer with a job to offer (Banerjee & Duflo, 2007). These enterprises mostly manifest as petty vendors who run their businesses as survival workshops that are unlikely to become profitable once the total labour cost is factored in (Kuada, 2015; Poole, 2018). These “entrepreneurs” are thus not regarded as drivers of economic growth (Naudé, 2011), and Banerjee and Duflo (2007) warn that these “*penniless entrepreneurs*” should not be romanticised. Of all regions, Africa has the highest prevalence of necessity entrepreneurship. In 2016, the rate of early-stage entrepreneurial activity in South Africa that was necessity driven, was 23.6% (Herrington, Kew & Mwanga, 2016).

Based on the above, this paper proposes the following:

P1a: Identifying and acting on a real business opportunity is a boundary condition for the fidelity entrepreneurship domain.

P1b: Necessity-motivated enterprises cannot be considered “entrepreneurial” by default.

In the context of EDA, entrepreneurship support programmes (e.g. training, incubation, mentoring and funding) are implemented for individuals with little or no entrepreneurial experience and no other options for employment. This study argues that being a beneficiary of an EDA initiative *is* the opportunity and that the recognition and exploitation of a real business opportunity are unlikely. This study therefore further proposes the following:

P1c: The product of EDA is unlikely to identify and act upon a real business opportunity.

7.3 Boundary 2: Innovation

Entrepreneurs create innovative insights for discovering and exploiting opportunities (both new and existing) and for solving problems (Botha, 2019). Higher degrees of creativity and innovation have proven a positive predictor of the survival and growth of enterprises (Vivarelli, 2013) and also translate into a greater contribution to economic growth (Naudé, 2011). In fact, Naudé argues that “*the major conceptual approach toward defending the role of the entrepreneur in economic growth has been to see the entrepreneur as a conduit for innovation*”.

However, this border of the fidelity entrepreneurship domain has been extended to include the replication of existing enterprises (Baker & Welter, 2020). These replicative activities are unlikely to result in “*industrial revolutions and the consequent explosions in economic growth*” (Griffiths, Kickul, Bacq & Terjesen, 2012), and replicative entrepreneurship is not considered important for contributing to economic growth (Naudé, 2011).

Again, this boundary was extended even further in the context of EDA. Kuada (2015) describes the replicative self-employment activity of a large number of persons in the Global South:

“Once news goes around that there is good money to be made by providing a particular type of goods or services and without a huge investment, many people will quickly flock into this line of business out of sheer necessity or to fulfil their lifestyle ambitions. They tend to enter businesses that may be said to lie at the low-end market segments – i.e. serving the bottom of the pyramid consumers. Their owners have low levels of expectations and ambitions and are therefore inattentive to opportunities for growth. The potential profitability of these businesses is low and this reduces their organic growth potentials.”

Based on the above, this paper proposes the following:

P2a: Innovation is considered a boundary condition for the fidelity entrepreneurship domain.

P2b: The product of EDA is unlikely to create innovative new products or processes.

7.4 Boundary 3: Risk-taking

There is an inherent personal and financial risk involved for persons embarking on the entrepreneurial process (Nieuwenhuizen, 2019). A number of innovative ideas never make it to the market, and even if they do, there is no guarantee that these ideas will make money (Baumol in Griffiths et al., 2012). Entrepreneurs can to some extent manage this risk by taking control of and being involved in the managing of the business. They can also reduce their financial risk by involving investors (Botha, 2019). Fidelity entrepreneurship remains a practice in which huge losses are risked (Baumol in Griffiths et al., 2012).

As per the definition, most EDA interventions are directed at unemployed persons with little or no other opportunities for employment. Persons starting a business when unemployed have a lower opportunity cost on their time than persons who leave their jobs to start a business (Shane, 2009). EDA programmes also often involve funding opportunities for the start-ups born from these interventions in the form of grant funding. There is thus little or no financial risk involved for the individual when becoming a beneficiary of an EDA programme, and the financial losses incurred by the beneficiary when the business fails can be considered insignificant. Rather, it is argued here that the access to funding for the start-up could be considered a financial reward by these beneficiaries who would otherwise be without an income. This absence of risk involved in participating in an EDA intervention may inform the dissensus from the Delphi panel (table 3).

Based on the above, this paper proposes the following:

P3a: Risk-taking is considered a boundary condition for the fidelity entrepreneurship domain.

P3b: EDA inherently reduces risk-taking by the beneficiary.

7.5 Boundary 4: Starting a venture

Venture creation is considered an integral attribute of fidelity entrepreneurship (Gartner, 1990). Although the questionnaires in rounds 2 and 3 did not explicitly ask the panellists' opinion on the theme of “starting a venture” (see table 1) eight of the 13 Delphi panellists in this study explicitly mentioned “starting a venture” in their personal definitions of entrepreneurship.

This boundary of the fidelity entrepreneurship umbrella has been extended to include activities that do not involve the creation of a new venture. A first extension is the inclusion of the construct of “corporate entrepreneurship” under the conceptual entrepreneurship umbrella. Corporate entrepreneurship refers to entrepreneur-like activities and traits exhibited by individuals in existing firms, even if these skills are not harnessed to start a business (Kaufmann & Dant, 1999). This boundary has also been extended to incorporate potential and nascent entrepreneurs under the entrepreneurship umbrella. Potential entrepreneurs are defined as persons who “*perceive good business opportunities and believe that they have entrepreneurial capabilities*” and nascent entrepreneurs refer to persons who “*intend to pursue a business opportunity within the next three years*” (Botha, 2019).

Examining the data on start-ups in South Africa, it becomes clear that the boundary of “starting a business” cannot be considered without considering the survival and growth of such businesses. South Africa’s business discontinuance rate is higher than the established business ownership rate in the same period, implying that “*there are more businesses being closed, sold or otherwise discontinued than there are businesses being continued*” (Bowmaker Falconer & Herrington, 2020). Even if these start-ups do survive, 22.6% of early-stage “entrepreneurs” do not expect to create any additional jobs in the following five years. From the same group, 46.8% expect to create only between one and five new jobs, and a mere 30.6% expect to create six or more jobs over the next five years (Bowmaker Falconer & Herrington, 2020). Even if these start-up ventures do survive, they are unlikely to develop into high-growth ventures that enhance economic growth and contribute significantly to job creation (Audretsch, 2012; Hartmann, Krabbe & Spicer, 2019), a fact that was confirmed with consensus from the Delphi panel (table 2).

The creation of start-up ventures forms an integral outcome of EDA interventions. Development organisations’ or government’s contribution to “entrepreneurship development” is often measured and reported in terms of the number of new start-ups that have been created as a result of EDA interventions, assuming that these ventures will survive past three years and ultimately result in entrepreneurial ventures that contribute to economic emancipation and job creation. However, EDA is resulting in excess entry and excess failure (Hartmann et al., 2019). As per the definition, EDA interventions are directed toward persons with little or no entrepreneurship experience. These low-skilled beneficiaries of EDA run ventures of low quality and low profit that are doomed to early failure (Vivarelli, 2013). When these ventures do fail, they are abandoned and the founders of the start-up opt to enter the labour market (Plehn-Dujowich, 2010). When opportunities in the labour market are scarce, the founder will be necessitated to start yet another low-quality venture that is again doomed to early failure.

In this regard, the Delphi panellists reached consensus that the product of EDA is unlikely to survive past three years without ongoing mentorship and grant funding (table 2). The mere act of starting a business does not constitute “entrepreneurship”. It is only when this start-up moves inside the other boundaries of the fidelity entrepreneurship domain that it can be labelled “entrepreneurship”. Based on the above, this paper argues that, although a handful of start-ups (including those resulting from EDA) may develop into fidelity entrepreneurial ventures, start-up ventures cannot be included in the entrepreneurship umbrella from the onset and by default. It is proposed that:

- P4a: Starting a venture can only be considered entrepreneurial once such a start-up meets the other boundary conditions for fidelity entrepreneurship.
- P4b: The majority of start-up ventures in South Africa are unlikely to develop into high-growth ventures.

7.6 Boundary 5: Intention and ability to grow the business

It is only through growing businesses that entrepreneurship has the potential to contribute significantly to economic development and job creation (Davidsson, Achtenhagen & Naldi, 2010), yet high growth ventures make up a very small number of ventures included under the conceptual entrepreneurship umbrella (Audretsch, 2012; Shane, 2009). In this section, a distinction is made between growth in terms of turnover and growth in terms of employment. A further distinction is made between the growth of the venture, the intention to grow the venture and the ability to grow the venture.

The boundary of “growing the business” was extended when researchers and observers realised that not all enterprises were predisposed to growth and their intention to grow could not be assumed (Douglas, 2013). Growth intention is defined as the intention to create a venture that will be substantially larger in subsequent time periods (Douglas, 2013). For a number of reasons, enterprises may deliberately refrain from exploiting opportunities to expand their firms (Wiklund, Davidsson & Delmar, 2003). Even if ventures show an intention to grow in terms of sales, it can also not be assumed that they intend to grow in terms of employment (Neneh & Vanzyl, 2014). A case in point is

the newer technology companies that are showing a decrease in employment as more services and functions are outsourced.

Many enterprises included under the entrepreneurship umbrella may not possess adequate internal resources to grow the business (Lau & Busenitz, 2001). Even if these enterprises indicate a desire to grow (Choto, Tengeh & Iwu, 2014), their ability to do so is questionable. The focus of these enterprises rarely go beyond survival, sales and profit rates, and their potential for growth thus remain limited (Nieuwenhuizen, 2019). Even if they do grow or intend to grow their enterprise, the cultural context shapes the way in which business resources are generated, leveraged and used (Baker & Welter, 2020; Kuada, 2015). Specifically, the importance that African societies place on traditional family structures has to be taken into consideration since it has two definite implications for the growth of enterprises in this context. Firstly, the family structures provide a reliable, flexible and cheap pool of labour. For this reason, ventures often contribute very little to job creation outside of the family network (Banerjee & Duflo, 2007; Kuada, 2015). Secondly, the small businesses in this context are often the only source of income for the extended family. Resources that are generated by the business are thus used to support weaker family members at a rate that “*outpaces their capacity to recoup them for growth*” (Kuada, 2015). In worst cases, the burden of unemployed family networks could even lead to the collapse of these small businesses.

The Delphi panellists did not reach consensus (table 1) that growing an enterprise in terms of turnover or jobs is a boundary of the fidelity entrepreneurship domain, since enterprises may at times deliberately choose not to expand their firms. They did, however, reach consensus that to be considered entrepreneurial, an enterprise should indicate an intention to grow in terms of turnover (table 1). The panel also reached consensus that (provided they survive) the product of EDA is unlikely to grow in terms of turnover year on year (table 3). Furthermore, five of the panellists were of the opinion that the product of EDA is likely to create employment for the owner only, while four panellists were of the opinion that such product is likely to create employment for the owner and their immediate family. Only four panellists were of the opinion that the product of EDA is likely to create employment outside of the owner’s family.

Based on the above, this paper proposes the following:

- P5a: The ability to grow the business when the intention is there is considered a boundary condition for the fidelity entrepreneurship domain.
- P5b: EDA is unlikely to produce ventures that have the intention and/or ability to grow beyond employing immediate family members.

7.7 Boundary 6: Reward beyond mere survival

The term “reward” as used here refers to profit or an increase in the value of the business (Nieuwenhuizen, 2019), not reward in terms of personal satisfaction. This boundary of the fidelity entrepreneurship domain was extended to include endeavours that are not profit seeking, but rather socially driven (Kaufmann & Dant, 1999). The purpose of these social enterprises is not simply to generate revenue or maximise profits, but rather to fulfil a social need through commercial activity. These enterprises thus produce goods and services in response to a lack of facilities and services in a community (Di Domenico, Haugh & Tracey, 2010). Different from non-profit organisations that rely on donations and philanthropy for an income, social enterprises pursue revenue-generation strategies through trading (Di Domenico et al., 2010).

This boundary of the fidelity entrepreneurship domain was also extended further with the introduction of survivalist enterprises. As with necessity-motivated entrepreneurs, survivalists are pushed into self-employment due to the lack of opportunities in the wage sector. However, the income levels of these survivalists generally remain below the minimum poverty line and is just enough for their daily upkeep and survival (Kuada, 2015). Amsden (2010) calls this the act of people hiring themselves at starvation wages. Apart from survival, the income generated by these ventures can be considered too small to be regarded as financial reward. As one of the panellists commented in the third round: “*In*

my experience 'meaningful employment' is survivalist in nature. You need to eat". In this regard, the Delphi panel reached consensus that survivalist enterprises cannot be included under the entrepreneurship umbrella by default (table 2).

Based on the mainstream entrepreneurship ideology, EDA is sold to and desired by marginalised communities in the Global South as a guaranteed ticket out of poverty and a guaranteed road to riches. In reality, however, barely one in four start-ups in South Africa survive past their first three years of existence. Even if they do survive, they are unlikely to develop into enterprises that yield high financial rewards. Failure is likely and success remain elusive (Hartmann et al., 2019). Against this background, this paper argues that the product of EDA is not producing the rewards that it is promising and that the beneficiaries of EDA are better off not pursuing "entrepreneurship" in the first place (Hartmann et al., 2019). In fact, the panellists reached consensus that if beneficiaries of an EDA intervention were to receive an employment offer in the form of a meaningful job, they are likely leave the venture born from EDA to pursue the opportunity (table 3). The beneficiaries likely view an opportunity for full-time employment as more rewarding than the opportunity to start and run a business.

Based on the above, this paper proposes the following:

P6a: For fidelity entrepreneurship to exist, reward has to go beyond mere survival.

P6b: Survivalist enterprises cannot be included under the entrepreneurship umbrella by default.

P6c: EDA beneficiaries prefer an opportunity for full-time employment above the opportunity to start and run a business.

P6d: The product of EDA is unlikely to deliver reward beyond survival.

7.8 Boundary 7: Independence and autonomy

Entrepreneurs are generally individuals who have a high degree of autonomy who believe that they can control and influence the outcome of their own actions (Botha, 2019). Furthermore, the creation of an enterprise requires resources and fidelity entrepreneurship employs a range of tools and strategies (e.g. networking, bootstrapping and bricolage) to garner these resources – even in resource-poor environments (Di Domenico et al., 2010). This boundary was extended by including ventures (such as survivalists) that do not exhibit economic independence (Botha, 2019).

The start-ups resulting from EDA often remain operating in a zone of insolvency, dependent on externally provided resources and are bound by an external locus of control through blame of and dependence on others (Pretorius et al., 2021). EDA is unlikely to contribute to economic growth and job creation (Vivarelli, 2013), and is more likely create ventures that, if they survive, remain dependent on grant funding and business rescue interventions to keep the business afloat (Pretorius et al., 2021). In this regard, the Delphi panellists reached consensus that the product of EDA is likely to remain dependent on mentorship and grant funding for survival (table 3).

Based on the above, this paper proposes the following:

P7a: Independence and autonomy are considered boundary conditions for the fidelity entrepreneurship domain.

P7b: The product of EDA is unlikely to become dependent and autonomous.

7.9 Other enterprise types included under the entrepreneurship umbrella

Although this study focuses on fidelity entrepreneurship and the product of EDA, the researchers utilised the commitment from the expert panellists to explore their opinions on other venture types that are currently included under the entrepreneurship umbrella in the second round questionnaire (see table 2). There was only one question pertaining to each of these enterprises in the round 2 questionnaire. Consensus was reached in the second round and the questions were not repeated in the third round.

Not all small businesses can be considered entrepreneurial ventures, yet the term has become synonymous with entrepreneurship (Griffiths et al., 2012). Although small businesses are related to the field of entrepreneurship in that they require entrepreneurial action for start-up, they rarely appear interested in innovation, growth and reaching certain strategic objectives but rather focus on survival, sales and profit targets (Nieuwenhuizen, 2019). With consensus from the Delphi panellists, this paper proposes the following:

P8a: Small business is a type of enterprise, but it is fallaciously included under the entrepreneurship umbrella.

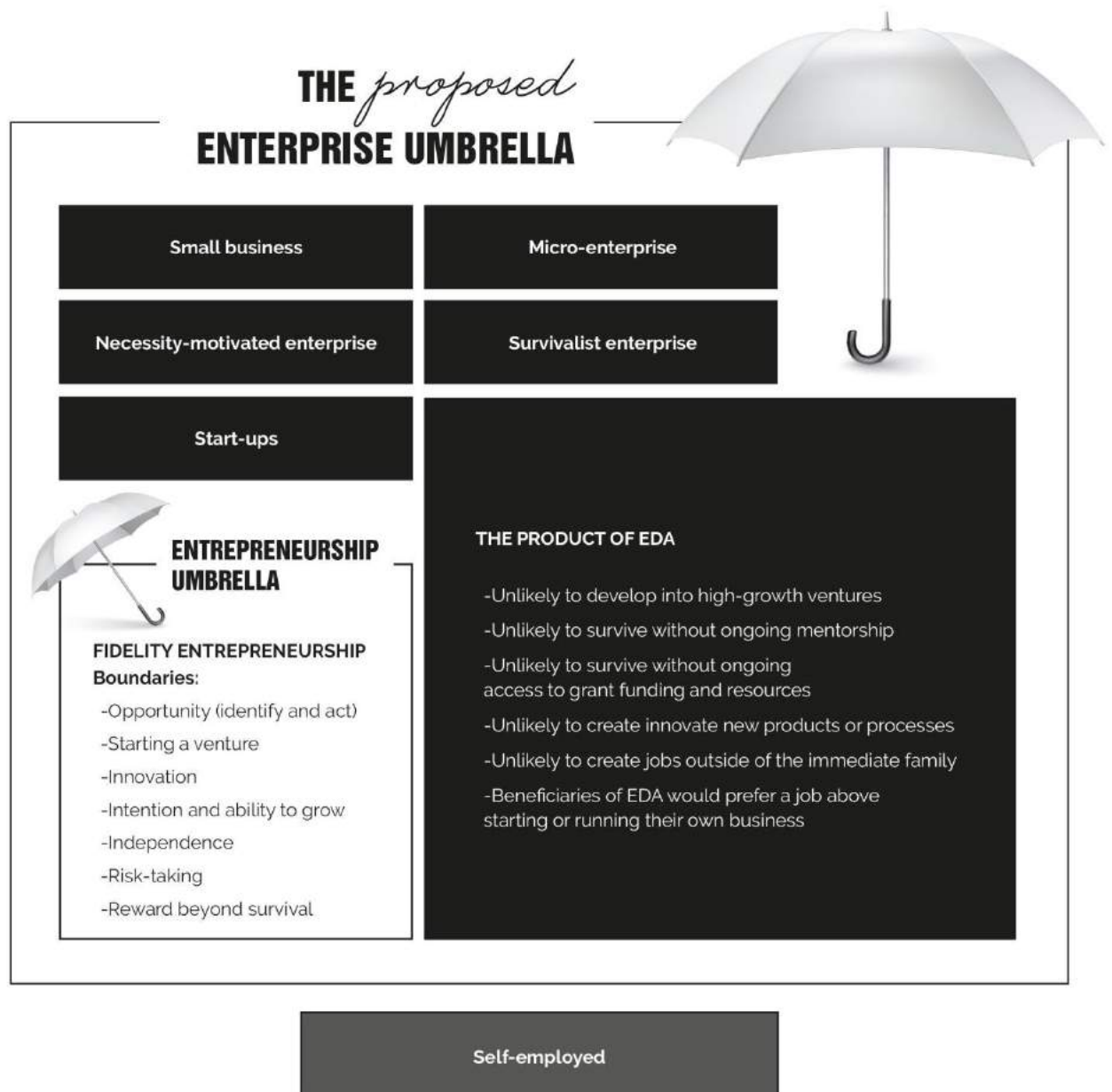
Micro-enterprises are also included under the current conceptual entrepreneurship umbrella. It is defined as an enterprise with less than ten employees, but is often merely self-employing. Bygrave suggests that we fool ourselves when we say that we are researching “entrepreneurship” when we are in fact studying “micro business” (Bygrave, 2007). Again, a handful of these micro-enterprises may potentially develop into entrepreneurial ventures and migrate into the boundaries of the fidelity entrepreneurship domain. However, this study proposes the following:

P8b: Micro-businesses is a type of enterprise, but it is fallaciously included under the entrepreneurship umbrella.

This mainstream conceptualisation of entrepreneurship also ignores a number of important distinctions between the concepts “entrepreneurship” and “self-employment” and largely present them as synonyms (Bögenhold, 2020; Griffiths et al., 2012). Self-employment *can* fall within some of the fidelity entrepreneurship boundaries, but all self-employment cannot be classified as “entrepreneurship” by default (Kuada, 2015). Bögenhold (2020) strongly argues that “*the equation of self-employment with an unclear definition of entrepreneurship should not be taken further*”. In agreement with critical literature and supported by the Delphi panel this paper thus proposes the following:

P8c: Self-employment cannot be included under the fidelity entrepreneurship umbrella or an enterprise umbrella from the onset and by default.

8. A NEW CONCEPTUAL FRAMEWORK FOR THE ENTERPRISE UMBRELLA



Source: own compilation

Figure 2: The proposed enterprise umbrella

When related phenomena are not equalled to fidelity entrepreneurship, but rather roughly linked to entrepreneurship under the enterprise umbrella, it challenges the meta-theoretical assumption that anything and everything previously labelled “entrepreneurship” is essentially the same activity. It also challenges the assumption that all types of enterprises included in the mainstream entrepreneurship umbrella are equally able to contribute to economic growth and job creation. -

This newly proposed enterprise theory umbrella provides a departure point for a critical dialogue in the scholarly discourse relating to EDA, in particular, and the meta-theoretical conceptualisation of the fallacious entrepreneurship umbrella, in general. This newly presented enterprise umbrella challenges the question “why do aeroplanes not lay eggs?” with the answer “because they are not birds”.

9. Limitations And Future Research

As presented in this research, this is an introductory Delphi study that aims to stimulate debate and introduce a new narrative for the entrepreneurship discourse, in general, and the product of EDA, in particular. This study is not without limitations and future research can build on the findings in this study.

Firstly, the panel was limited to 13 specialists. This size of the sample is too small to pursue significance; however, this was not the aim of this study. Secondly, only four of the panellists indicated that they had knowledge in the field of critical entrepreneurship studies. Although the background and aim of the study were clearly set out in the cover letter preceding the second round questionnaire, the questions were phrased in a way that elicited a response from the panellists without them having to agree with the premise that the current conceptual entrepreneurship framework has to be revisited and potentially rejected. Future studies can extend to a broader panel of critical entrepreneurship scholars that explicitly reject the mainstream conceptual entrepreneurship framework. Such a panel may, however, likely span diverse nationalities, which may present other challenges. Thirdly, only two of the panellists indicated that they were practically involved with EDA interventions. Future studies can extend to a panel of EDA practitioners.

Another limitation is the fact that there were no explicit questions on the questionnaires in rounds 2 and 3 that address the theme of “reward” and “starting a business”, and the findings were inferred from open-ended responses and extant literature. Future research can explicitly explore these themes.

During the second-round questionnaire analysis the researchers considered that the study may potentially benefit from additional rounds to drive consensus through the panel conforming to the majority opinion. An online discussion with the beneficiaries (as is sometimes done with a modified Delphi process) was also considered. However, the researchers opted to respect the fact that the panellists had committed to the process based on the assurance that it would be limited to three iterative rounds. The trends observed in these three rounds of this Delphi process suggest that a follow-up study is warranted.

This study focused specifically on the product of EDA. Future research may also demarcate boundaries for other enterprises, indicating how these enterprises may be related to fidelity entrepreneurship, yet cannot be considered synonymous with fidelity entrepreneurship.

10. Summary

This paper underscores the restrictive impact of the current mainstream theoretical conceptualisation of “entrepreneurship” on theory development. The terminology confusion brought about when a number of diverse phenomena are lumped together under the same theoretical umbrella, may be at the heart of the theoretical impasse in mainstream entrepreneurship theory.

This paper addresses this terminology confusion and resulting assumptions underlying mainstream entrepreneurship theory by rejecting the entire meta-theoretical conceptualisation of entrepreneurship. It presents a framework for enterprise theory, an umbrella that includes loosely related phenomena such as, *inter alia*, micro-enterprises, necessity-motivated enterprises, the product of EDA and fidelity entrepreneurship. The boundaries for the fidelity entrepreneurship phenomenon (one of a number of phenomena included under the newly presented enterprise umbrella) are clearly demarcated. Phenomena that fall outside of these boundaries are “un”trepreneuried and presented as phenomena that can be studied from an enterprise theory perspective, but not from an entrepreneurship theory perspective. Doing so does not imply that these “un”trepreneuried phenomena deserve any less scholarly interest. Unbundling and reconceptualising the fallacious entrepreneurship umbrella creates realistic expectations of what the role of each of these phenomena can be within a broader enterprise ecosystem. To open the dialogue, this study also presents realistic expectations for the product of EDA.

This study moves beyond the impasse in the mainstream entrepreneurship paradigm by proposing an alternative umbrella for enterprise theory. This new umbrella stimulates a new narrative about the (in)ability of “entrepreneurship” (and EDA specifically) to contribute to economic growth and job creation.

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The Impact Of Entrepreneurial Self-Efficacy On The Relationship Between Perceived Access to Finance and Entrepreneurial Intention

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Keywords

Entrepreneurship; entrepreneurial intention; entrepreneurial self-efficacy; perceived access to finance; South Africa

Abstract

Worldwide entrepreneurship has been recognised as an engine for job creation, economic growth and development. As such, many nations are looking into entrepreneurship to address the rising unemployment. Nevertheless, the level of entrepreneurial activities in South Africa remains relatively low compared to other developing countries. This is worrying since the country is experiencing a high unemployment rate, especially among the youth. This necessitates a need for more studies to explore what drives the youth in South Africa to choose an entrepreneurial career. Thus, this study examined whether the possibility of accessing start-up funding can influence students to start a business. Additionally, the study tested whether ESE moderates the PAF-EI relationship. Data was collected from 500 students at a South African university using a questionnaire. The findings showed that the PAF-EI association was positive and significant. Moreover, the results showed that ESE significantly predicts EI. It was also established that ESE positively moderates the PAF-EI nexus. The study culminates with several practical and policy implications.

1. Introduction

All over the world, entrepreneurship has been identified as a vital strategy for new job creation, local economic development, and economic growth due to the flexibility and innovative capability of entrepreneurs (Wiklund, Wright & Zahra, 2019; Neneh, 2020; Elnadi & Gheith, 2021; Maheshwari & Kha, 2021). An entrepreneurship career provides individuals with financial freedom, flexibility, and economic inclusion (Dzomonda & Fatoki, 2019; Adebusuyi, Uysal et al., 2021). Venturing into entrepreneurship is considered intentional (Ajzen, 1991; Liñán & Chen, 2009; Uysal et al., 2021) since entrepreneurial intentions (EI) form long before a new venture, suggesting a link between entrepreneurship and intention (Liñán & Chen, 2009; Thompson, 2009). Thompson (2009, p. 676) defined EI as “a self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future.” Based on this definition, it becomes vital to understand the formation of EI because it is the initial stage that influences the entire new venture creation process (Ajzen, 1991; Elnadi & Gheith, 2021; Maheshwari & Kha, 2021). The idea that EI is a crucial determinant for new venture creation is widely supported by existing studies (Ajzen, 1991; Elnadi & Gheith, 2021; Maheshwari & Kha, 2021).

Prior studies have investigated different factors influencing entrepreneurial intention (Urban & Ratsimanetrimanana, 2019; Neneh, 2020; Nguyen, 2020; Al-Ghazali & Afsar, 2021; Elnadi & Gheith, 2021; Uysal et al., 2021; Rusu et al., 2022). Among these various factors, access to finance is considered an essential factor influencing entrepreneurial intentions (Urban & Ratsimanetrimanana, 2019; Nguyen, 2020; Rusu et al., 2022). Drawing from the credit rationing theory (Stiglitz & Weiss,

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1981), perceived access to finance (PAF) describes the difficulty perceived by an individual in accessing finance. Likewise, Rusu et al. (2022) define perceived access to finance as the amount of information an individual has about credit facilities and financial support from different institutions. Start-up capital is a vital resource for all new businesses as it helps the company cover working capital, improve the business's productivity, and finance projects for expansion purposes (Neneh, 2016; Urban & Urban Ratsimanetrimanana, 2019; Rusu et al., 2022). As such, access to finance facilitates the establishment and growth of a new business. While the critical role of access to finance in fostering entrepreneurial intention cannot be overlooked, existing studies suggest that understanding the mechanisms and context through which this association occurs is crucial for making effective decisions regarding promoting entrepreneurship (Nguyen, 2020; Urban & Ratsimanetrimanana, 2019; Rusu et al., 2022). Thus, there has been an increase in studies examining the PAF-EI relationship (Rusu et al., 2022). Even though existing literature sheds light on the association between PAF and EI, some gaps exist, which raise pertinent research questions. One limitation of existing studies is mixed findings regarding the PAF-EI relationship. For instance, while several scholars established that PAF positively predicts EI (Aslam & Hasnu, 2016; Urban & Ratsimanetrimanana, 2019; Rusu et al., 2022), others found no significant direct effect (Mwatsika, 2015; Nguyen, 2020). Also, existing studies further indicate that the PAF-EI relationship does not always hold in some instances (Mwatsika, 2015; Nguyen, 2020). According to Nguyen (2020), perceived access to finance alone may not always predict entrepreneurial intention. Thus, the PAF-EI relationship is contingent on other factors (Nguyen, 2020; Rusu et al., 2022). Once an individual has high PAF, translating such high PAF into entrepreneurial intentions may require favourable boundary conditions. Thus, there is a need to understand the association between PAF and EI clearly. Therefore, we introduced entrepreneurial self-efficacy (ESE) as a boundary condition to provide an alternative explanation on the PAF-EI association. Also, given that the PAF-EI has been validated in other contexts (Urban & Ratsimanetrimanana, 2019; Rusu et al., 2022), it is crucial to test if this will hold in a different context such as South Africa and if this relationship can be moderated by entrepreneurial self-efficacy? Unlike the above contexts, for students from a developing country such as South Africa, characterized by high unemployment, poverty and income inequality, access to finance may be a priority for them to start a business. This study provided clarity on the association between PAF and EI by incorporating the moderating effect of ESE. This study further provided an alternative explanation on the association between PAF and EI by demonstrating that ESE significantly moderates the association between these two constructs.

1.1 Problem Statement

According to the 2021/2022 Global Entrepreneurship Monitoring Report, entrepreneurial activities have increased in the past year in South Africa. However, such entrepreneurial activities are still relatively low compared to other African regions (GEM,2021/2022). This is worrying since the country is also experiencing issues of unemployment where youth between 15-24 years account for 63,9%, 42,1% is accounted for by individuals between the ages of 25-34 years, while the national unemployment rate is 34,5% (Statistics South Africa, 2022). The high unemployment rate among the youth is of great concern as the youth constitute a significant percentage of the South African population (Dzomonda & Fatoki, 2019). Entrepreneurship can be a sustainable solution to the socio-economic challenges facing South Africa because the entrepreneurship career offers financial freedom, a tool for wealth creation, decent jobs, and value addition activities that spur economic growth.

Nevertheless, many youths still prefer full-time employment over an entrepreneurship career as they perceive it as risky in terms of income uncertainty (Dzomonda & Fatoki, 2019). Thus, examining factors that enhance the level of entrepreneurial intention amongst youths is an essential step towards solving this problem. While access to finance facilitates new venture creation and sustainability thereof (Neneh, 2016; Adomako & Danso, 2014), a perceived lack of finance hinders entrepreneurial activities among the youth. Also, there are mixed findings regarding the association between PAF and EI. For instance, while several scholars established that PAF positively predicts EI (Aslam & Hasnu, 2016; Urban & Ratsimanetrimanana, 2019; Rusu et al., 2022), others found no significant direct effect (Mwatsika, 2015; Nguyen, 2020). One of the causes of these mixed findings is that these studies only tested the direct effect of PAF on EI without considering other boundary conditions that can modify

this relationship. We argue that while an individual has high PAF, translating such PAF into EI may require favourable conditions (Nguyen, 2020). One such condition can be ESE. Existing studies report that ESE significantly influences an individual's career choice and development because it affects how people evaluate a particular career based on their skills (Newman et al., 2019; Elnadi & Gheith, 2021; Uysal et al., 2021). Since an entrepreneurial career requires particular skills, ESE may influence individuals to start a business in the future by making them confident in their abilities to thrive in such a domain. Besides supporting evidence regarding the role of ESE in predicting EI, limited studies have endeavoured to explore the moderating effect of ESE on the PAF-EI relationship, which necessitates further research.

1.1.1 Objectives of the study

Thus, this study aimed to examine whether the possibility of accessing start-up funding can influence students to start a business in the future. Additionally, the study tested whether ESE moderates the PAF-EI relationship.

2. Methodology

The current paper was quantitative as it intended to test the constructs in the conceptual model statistically. The quantitative research method enhanced objectivity in the study, thus, improving the rigour of findings. We collected data using a questionnaire in a survey from students at a South African University. The students were from the faculty of Economics and Management Sciences (Business management, Accounting, Economics and Finance, and Public administration and Management). The choice to consider university students is because they are regarded as potential entrepreneurs at a point to make career decisions (Rusu et al., 2022). Since entrepreneurial intentions are formed long before a new venture (Liñán & Chen, 2009; Thompson, 2009), using university students as a sample improves the understanding of this concept and provides rich data to inform policymakers (Liguori et al., 2020). Also, several existing studies related to entrepreneurial intention have been validated using student samples (Neneh, 2020). A sample of 620 university students was conveniently recruited to participate in the survey. Out of these questionnaires distributed, 500 questionnaires were accurate and usable (i.e. 80.65% response rate).

2.2.1 Measures

We measured EI using six items adapted from existing literature (Linan & Chen, 2009). Some sample items included, "My professional goal is to become an entrepreneur." Perceived access to finance was measured using constructs on financial knowledge and skills (sample items include: "If I were to start my own business, I know how to prepare a business plan"; "If I were to start my own business, I know how to use financial information to make business decisions") collateral requirements (sample items include; "If I were to start my own business, I know that lack of credit history will make it difficult for me to borrow money from the banks and financial institutions"; "If I were to start my own business, I know that banks will be reluctant to finance my new business because of the high risk involved") and small business support (sample items include; "If I were to start my own business, I know a lot about Khula and the sources of funding they have available to promote entrepreneurs"; "If I were to start my own business, I know a lot about SEDA and the sources of funding they have available to promote entrepreneurs"). These scales were adopted from prior studies (Mazanai & Fatoki, 2011; Padiaychee, 2016). We measured ESE using four items adapted from existing literature (Zhao, Seibert & Hills, 2005; Neneh, 2020). Some of the sample items include "I can come up with new ideas and products." The statements to measure each construct in the questionnaire were scored on a 5-point Likert scale which ranged from 1 "strongly disagree" to 5 "strongly agree". Data was analysed using descriptive statistics, Pearson correlation and hierarchical regression.

3. Hypotheses

The following hypotheses were formulated for the study:

- H1: PAF will positively predict EI.
- H2: ESE will positively predict EI.

- H3: The association between EI and PAF is moderated by ESE such that individuals who have high ESE will have a high EI.

3.1. Theoretical framework

The current study adopted base theories such as Theory of Planned Behaviour (TPB) (Ajzen, 1991) and the Social Cognitive Theory (SCT) (Bandura, 1982) to understand the processes linked to the EI formation among individuals. The TPB explains that EI predicts actual behaviour (Ajzen, 1991). EI is a function of attitude towards behaviour (ATB), subjective norms (SN) and perceived behavioural control (PBC). ATB describes an individual's evaluation of the behavior regarding enacting a particular behavior in the future (Ajzen, 1991), which implies that entrepreneurial attitudes are formed based on whether the outcomes will be favourable or unfavourable (Ozaralli & Rivenburgh, 2016). On the other hand, SN refers to the effect other people and society have in influencing an individual towards behaviour (Ajzen, 1991). This means the individual will likely enact behaviour that is regarded as acceptable by members of the family or society. In this case, an entrepreneurial society calibrated with norms that highly regard entrepreneurship may influence an individual to develop intentions towards establishing a business in the future. From understanding the concept of SN, existing studies have argued the importance of having role models and a family with an entrepreneurial background to help individuals choose an entrepreneurial career (Bandura, 1982; Ajzen, 1991). According to Ajzen (1991), PBC refers the individual's evaluation of the ability to perform the behaviour. The TPB has been found to be useful in explaining human behaviour, such as starting a new venture, leading to its wide adoption in entrepreneurship research (Pugh & Adkins, 2020; Otache et al., 2022). Many scholars agree that the TPB has been validated across different contexts, making it a vital tool for providing a nuanced understanding of the formation of EI and actual behaviour (Liu & Liu, 2019; Neneh, 2020; Otache et al., 2022). The TPB will help us understand EI formation by exploring its link to PAF and ESE. The conceptual model tested in this study is presented in Figure 1.

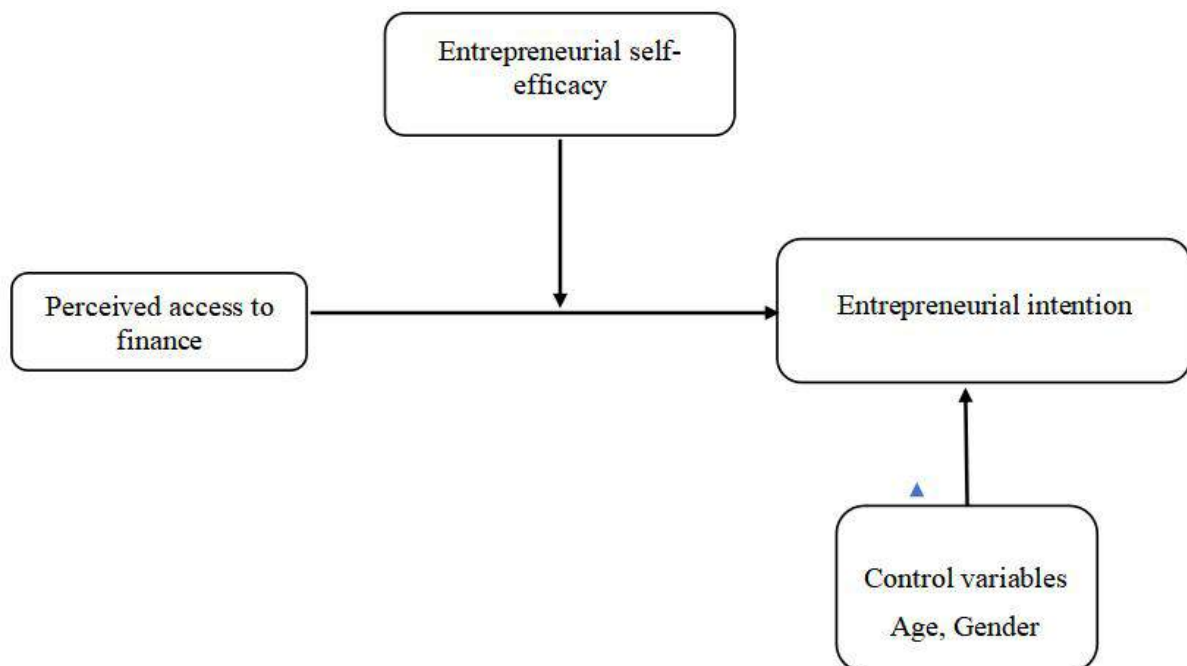


Figure 1: Conceptual model
Source: Authors conceptualisation (2022)

This study also adopted the SCT (Bandura, 1982) to provide a theoretical underpinning of ESE in the conceptual model in Figure 1. Basically, the SCT explains the cognitive processes involved in career choices. The SCT is also used to understand human behaviour, providing an alternative explanation for why individuals end up in certain careers (Bandura, 1982). Bandura (1982) defined self-efficacy as an individual's evaluation of their abilities regarding performing a task. This study adopted ESE as

a variable closely linked to entrepreneurial processes (Newman et al., 2019). “ESE describes a person’s confidence in his or her own entrepreneurial abilities and the belief that one is able to successfully execute the various roles and tasks related to entrepreneurship” (Schmitt et al., 2018, p. 840). ESE is a proximal factor that strongly predicts EI and actual behaviour (Newman et al., 2019; Uysal et al., 2021).

2.Hypothesis development

2.1 Perceived access to finance and entrepreneurial intention

PAF refers to the information possessed by individuals regarding financial resources and funding sources available to them (Rusu et al., 2022). The availability of financial resources is of great importance for any business to function well. The implication is that having high chances of securing funding for the new business can positively influence an individual’s decision to pursue an entrepreneurial career (Svotwa et al., 2022). Every new business must access internal and external finance to grow and survive. To start a business, an individual needs external sources of funding such as; equity financing and debt financing to turn their dream into reality (Nguyen, 2020). Sources of finance include family, friends, banks and government funding. Having sufficient financial resources facilitates the establishment and growth of a new business; however, financial constraints among the youth have been a significant impediment to developing entrepreneurial activities in South Africa (Neneh, 2016; Osano & Languitane, 2016). Urban and Ratsimanetrimanana (2019) assert that having access to finance makes an individual confident to start a business. This is because it assures them that it will be feasible to attract other vital resources such as skilled employees and accessible business premises, which is essential to start a successful business. Likewise, Rusu et al. (2022) argue that having easy access to finance makes individuals confident that they are in charge of their entrepreneurial goals. From a developing country perspective, where several youths come from poor backgrounds, the support that the individual expects to get from the government can also play an essential role in influencing their entrepreneurial intentions (Urban & Ratsimanetrimanana, 2019). Also, most youths in developing countries face problems in accessing finance because they do not have the collateral security required by banks. Thus, the belief that it will be difficult or easy for them to obtain start-up capital from the government will determine whether they will pursue the entrepreneurial career path. Many studies highlighted that perceived access to finance positively predicts entrepreneurial intention (Engelschjøn, 2014; Liñán & Fayolle, 2015; Urban & Ratsimanetrimanana, 2019; Rusu et al., 2022). This study advances the argument that an individual’s knowledge of whether or not they can access finance will determine the development of entrepreneurial intention. Thus, the hypothesis is stated as;

H1: PAF will positively predict EI.

2.2 Entrepreneurial self-efficacy and entrepreneurial intention

Chen et al. (1998, p.295) defined ESE as “an individual’s belief that he/she is capable of successfully performing the various roles and tasks of entrepreneurship.” According to Saadaoui and Affess (2015), ESE describes an individual's confidence regarding their ability and skills to pursue an entrepreneurship career successfully. Similarly, Bandura (2012) explains that ESE transforms individuals by making them confident of what they can achieve with their skills and capabilities, which becomes part of their belief system. This implies that individuals who believe in their entrepreneurial skills will be motivated to establish a business because they have an assurance that they will be able to cope with the demands of an entrepreneurial career (Newman et al., 2019; Uysal et al., 2021). This is further substantiated by the view that ESE enables individuals to select and pursue challenging tasks and remain optimistic about their capabilities as unique resources to attain the entrepreneurial goal (Bandura, 1982; Newman et al., 2019; Uysal et al., 2021). Ideally, ESE enables individuals to identify and act on opportunities even when facing challenges, which is a vital characteristic required to be a successful entrepreneur (Schmitt et al., 2018). Individuals with high ESE can remain optimistic and resilient even when faced with a challenging task. They persevere until completing the task (Newman et al., 2019). Empirical studies show that ESE positively predicts EI as it conditions an individual’s cognitive processes towards attaining a desired goal in the future

(Newman et al., 2019; Elnadi & Gheith, 2021; Uysal et al., 2021). Based on this evidence, the hypothesis is stated as;

H2: ESE will positively predict EI.

2.3 The role of entrepreneurial self-efficacy

Existing studies argue that PAF alone may not always predict entrepreneurial intention (Nguyen, 2020). Thus, the relationship between PAF and EI is contingent on other factors (Nguyen, 2020; Rusu et al., 2022). The argument is that once an individual has high PAF, translating such into strong entrepreneurial intentions may require favourable boundary conditions. ESE is one such favourable condition. ESE affects a person's behaviour, career choice, and the extent to which the individual will persevere toward achieving a goal (Cardon & Kirk, 2015; Newman et al., 2019). In this case, individuals with high ESE are known to be persistent toward a goal even when confronted with uncertainty, while those with low ESE may quit or change their career path.

We argue that there are two reasons why ESE will moderate the PAF-EI relationship. Firstly, entrepreneurship is a risky career polarised with high uncertainty (Schmitt et al., 2018; Neneh, 2020). Thus, even though an individual may have high PAF, translating such PAF into strong EI requires one to have high ESE, a factor which helps individuals to persist in entrepreneurial activities even when facing challenges (Cardon & Kirk, 2015; Schmitt et al., 2018; Neneh, 2020; Uysal et al., 2021). According to Schmitt et al. (2018, p. 841), "entrepreneurs high in entrepreneurial self-efficacy can more effectively regulate their emotions related to the perception of increased uncertainty and tend to be less susceptible to threatening and anxiety-provoking thoughts." If individuals persist in their actions, they have a greater chance of succeeding in that task by learning to solve problems as they arise (Bandura, 1982; Cardon & Kirk, 2015; Newman et al., 2019). Secondly, the entrepreneurship career requires specific skills and for the individual to have confidence in their knowledge and entrepreneurial skills. Additionally, the entrepreneurship career requires an individual who is opportunity oriented. Thus, when a person has high ESE, the argument is that such an individual will be capable of becoming an entrepreneur with minimal or no assistance from others because of their skills (Newman et al., 2019). Additionally, to become an entrepreneur, an individual must have ESE to become more alert and sensitive to opportunities within their environment (Schmitt et al., 2018). Existing empirical studies agree that ESE is an essential construct that strengthens individuals' EI and ability to persist in their entrepreneurial careers (Newman et al., 2019; Adebuseyi et al., 2021; Uysal et al., 2021). Boyd and Vozikis (1994) found that ESE is a significant moderator which strengthens the chances of one becoming an entrepreneur. This view is further substantiated by Schmitt et al. (2018), who singled out the vital role that ESE plays in moderating the association between EI and its antecedents. Consistent with these studies, we argue that EI will be stronger at high levels of PAF and ESE and vice versa. Based on this background, the hypothesis is stated as;

H3: The association between EI and PAF is moderated by ESE such that individuals who have high ESE will have a high EI.

3. Results and Findings

3.1 Demographic information of the participants

The demographic characteristics considered in this study included gender, age, race, level of education qualifications, prior entrepreneurial experience, family background, and EI. It was established that most participants (56.4%) were females, while 43.6% were males. The dominant aged group was 21-25 (58.2%). Black people were the majority (77.6%) followed by white people 15.6%. Also, 24.4% had prior experience, while 55.2% indicated that their family had business history.

Moreover, 83.6% of the respondents preferred to run their own business than to be employed by someone. Of those wishing to run their own business, 60.4% preferred to run their business alone, while 39.6% preferred to run their business with others. The results showed that most respondents chose entrepreneurship over employment because of the independence, flexibility, and high income earning potential associated with the entrepreneurship career.

3.2 Descriptive statistics

Table 1: Descriptive statistics, and Correlation analysis

Constructs	Mean	SD	1	2	3	VIF
1. EI	3.87	1.14	1			5.46
2. PAF	3.48	1.09	0.312**	1		6.55
3. ESE	3.74	0.675	0.426**	0.530**	1	3.95

** Correlation is significant at the 0.01 level (2-tailed)

Table 1 presents the mean, standard deviation and correlations among the constructs. A mean of 3.87 shows a moderate entrepreneurial intention among the participants. The results also show that the participants displayed moderate perceived access to finance (mean, 3.48) and entrepreneurial self-efficacy (3.74). Regarding the correlations, the results show that the variables are correlated. A coefficient of 0.312 indicates that PAF and EI are moderately correlated. Likewise, there is a moderate correlation (0.426) between ESE and EI. Furthermore, the correlation (0.530) between PAF and ESE was moderate. The study also assessed collinearity issues by evaluating the variance inflation factor of the constructs. The findings show that the VIFs were acceptable as the values were less than 10. This means that the model does not suffer from multicollinearity issues.

3.3 Assessment of reliability and validity

Table 2: Assessment of reliability and validity

Constructs	Items	Factor loadings	Cronbach's alpha
Entrepreneurial intention	EI1	0.781	0.939
	EI2	0.829	
	EI3	0.789	
	EI4	0.854	
	EI5	0.874	
Perceived access to finance	PAF1	0.740	0.924
	PAF2	0.890	
	PAF3	0.880	
	PAF4	0.876	
	PAF5	0.856	
	PAF6	0.817	
Entrepreneurial self-efficacy	ESE1	0.704	0.943
	ESE2	0.714	
	ESE3	0.727	
	ESE4	0.742	
	ESE5	0.733	

Table 2 shows an assessment of reliability and validity of the constructs. Since the measures of the constructs were adopted from existing studies, it was crucial to assess issues related to reliability and validity. As indicated in Table 2, all the factors perfectly loaded showing that the items were true measures of each construct, thus exhibiting validity of the measures. The factor loadings ranged from 0.704-0.890 which is acceptable. Regarding reliability of the constructs, the Cronbach's alpha values ranging from 0.924-0.943 shows that the three constructs (EI, PAF and ESE) were all reliable. The Cronbach's alpha values of the constructs were above the threshold 0.7, which is acceptable (Hair et al., 2019).

3.4 Hierarchical Regression

Table 3: Hierarchical Regression Model on the relationship between EI, PAF and ESE

Constructs	Model 1		Model 2		Model 3	
	Beta	T-Value	Beta	T-value	Beta	T-value
Control Variables						
Constant		9.623**		5.705**		5.660**
Gender	0.035	0.816	1.108	0.268	0.045	1.131
Age	0.058	1.095	-0.802	0.423	-0.054	-1.082
Education	0.036	0.694	0.405	0.685	0.035	0.707
Independent Variable						
H1: PAF	0.318	7.360**	0.122	2.533*	0.127	2.646**
Moderating Variable						
H2: ESE			0.364	7.633**	0.375	7.890**
Interaction Effects						
H3: PAF x ESE					0.112	2.762**
Model Parameters						
R ²	0.101		0.196		0.208	
Adjusted R ²	0.094		0.188		0.199	
F-Value (sig.)	13.883		24.047 (0.000)**		20.022 (0.000)**	
R ² -Change	-		0.095		0.012	
F-Change	-		58.226 (0.000)**		7.630 (0.006)**	
Max VIF	1.533		1.536		1.545	

** Sig at 1%, * Sig at 5%, Model 1 is the independent variable (PAF), Model 2 is the Moderating variable (ESE) and Model 3 is the Interaction effect (PAF X ESE)

Table 3 shows the relationship between EI, PAF, and ESE. We also tested the effect of control variables such age, education, and gender on EI. The model was also significant at $p \leq 0.05$, when the F-value is considered. The results showed that PAF positively predicts EI, thus, confirming hypothesis 1. It was also established that ESE significantly predicts ESE, thus, supporting hypothesis 2. The results also showed that ESE positively moderates the association between PAF and EI. This supported hypothesis 3, which stated that the association between EI and PAF is moderated by ESE such that individuals with an ESE will have a high EI.

3.4 Probing the PAF-EI relationship at varying levels of ESE

The PAF-EI relationship was further examined at varying levels of ESE, as graphically presented in Figure 2.

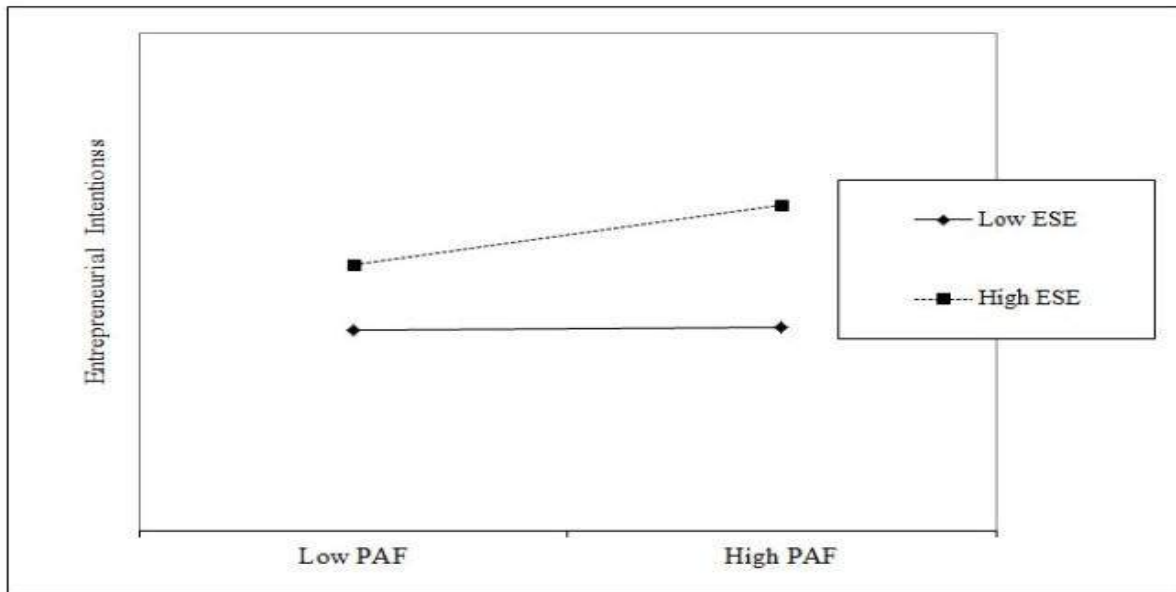


Figure 2: Probing the PAF-EI relationship at varying levels of ESE

Figure 1 graphically shows the interaction terms. The results show that EI increases as PAF increases. However, this association is mainly pronounced only with those with a high ESE. This implies that ESE strengthens the association between PAF and EI. This is likely to result in greater EI for individuals with perceived access to finance and higher levels of ESE.

3.5 Discussion

This study examined the association between PAF and EI. Also, the study tested the moderating effect of ESE on the PAF-EI association. The results showed that PAF positively predicts EI. This implies that individuals will be confident and motivated to start a new venture in the future if they have an assurance that they will access start-up funding either from the bank or the government. Access to finance is essential for all start-ups; thus, perceived access to capital motivates individuals to choose an entrepreneurship career over employment (Neneh, 2016; Osano & Languitane, 2016; Rusu et al., 2022; Sivotwa et al., 2022). To start a business, an individual needs external sources of finance such as equity and debt financing to turn their dream into reality (Nguyen, 2020). Having access to finance makes an individual confident to start a business because it assures them that it will be feasible to attract other vital resources such as skilled employees and accessible business premises, which is essential to start a successful business (Urban & Ratsimanetrimanana, 2019; Rusu et al., 2022). Consistent with other studies conducted in developing countries (Urban & Ratsimanetrimanana, 2019; Rusu et al., 2022), our findings confirm that PAF positively predicts EI among the surveyed participants. Given that several students from developing countries such as South Africa come from poor backgrounds and lack collateral security to secure loans from the bank, the support that the individual can get from their family and friends, as well as the government, will enhance their EI.

It was established that ESE positively predicts EI. This implies that ESE is a crucial determinant for EI. An entrepreneurship career requires individuals who are confident in their abilities to manage the venture and interact with investors. Hence, existing studies argue that ESE is a proximal determinant of EI because it makes individuals confident in their skills and capabilities, which encourages them to create a business (Newman et al., 2019; Neneh, 2020). Individuals who believe in their entrepreneurial abilities and skills will likely pursue an entrepreneurial career (Cardon & Kirk, 2015; Hsu et al., 2017). ESE measures a person's confidence in their capability to enact particular behaviour, thus, influencing their entrepreneurial intentions because entrepreneurship demands specific skills (Doanh & Bernat, 2019; Al-Ghazali & Afsar, 2021). Several studies reported that ESE positively predicts EI (Cardon & Kirk, 2015; Hsu et al. 2017; Neneh, 2020). Including the interaction item (PAF x ESE) in the model, significantly strengthened the PAF-EI association showing that ESE positively

moderates the PAF-EI relationship. By further probing the PAF-EI at varying proportions of ESE, the results showed that EI increases as PAF increases. However, this association was mainly pronounced only for those with high ESE. According to Doanh and Bernat (2019, p. 2449), “a person who has high self-efficacy for a particular task is likely to engage and then persevere in that task than an individual who shows low self-efficacy.” Likewise, Elnadi and Gheith (2021) asserted that individuals with high ESE tend to have high entrepreneurial intentions than those with low ESE. An entrepreneurship career is associated with increased risk and uncertainty (Schmitt et al., 2018; Newman et al., 2019), suggesting that people who are highly confident in their abilities and skills tend to develop coping mechanisms to deal with such situations compared to individuals with low confidence (Elnadi & Gheith, 2021). Other scholars also express that people characterised by high ESE are more likely to be persistent and resilient in pursuing their entrepreneurial goals than those with low ESE (McGee & Peterson, 2019; Memon et al., 2019). Our findings confirm the findings of other existing scholars (Schmitt et al., 2018; Adebuseyi et al., 2021; Uysal et al., 2021), who reported that ESE has a significant moderating effect on EI and its antecedents. Nevertheless, since this study was limited to students at particular South African university, this may weaken the generalisability of the findings.

4. Conclusion

The current study examined the impact of ESE on the association between PAF and EI. The study contributed to the existing literature by demonstrating that ESE is a crucial boundary condition that strengthens the PAF-EI link. The implication is that EI becomes stronger at high levels of PAF and ESE. This finding is valuable for policy making regarding promoting entrepreneurship in South Africa. Our results confirm other studies conducted in different contexts in the existing literature.

Nevertheless, the nature of this study may expose some limitations that future studies can improve. Firstly, this study only included students from one faculty of a South African university. Therefore, findings from this study may not necessarily be generalised across all youths in South Africa. Thus, other researchers can improve the sample's representativeness by increasing the current sample size by recruiting students from other universities in South Africa. Furthermore, our study was limited to the impact of ESE on the PAF-EI association, leaving other possible variables that can influence this link due to the scope of this study. Future studies can explore other factors such as entrepreneurship education, personality characteristics, gender, and culture in this relationship. Another limitation of the current study is that it only explored factors which influence the formation of entrepreneurial intention among students without testing how the entrepreneurial intention will translate into entrepreneurial action. Since existing studies indicate that entrepreneurial intention may not always predict actual behaviour and venture creation, future studies can explore how entrepreneurial intention may translate into entrepreneurial action.

5. Managerial Implications

This study offers theoretical, managerial and policy implications. Theoretically, our study builds on the TPB as a vital framework to understand the PAF- EI relationship and uses the SCT to provide an alternative explanation of the PAF-EI association. This provided a better theoretical perspective on the formation of EI from a career choice theory.

Practically, the current research adds value in several ways. Firstly, our study showed that PAF significantly predicts EI among university students. This indicates that PAF is a crucial determinant of EI, which needs nurturing. Educational programmes need to equip students with practical financial management skills and knowledge. One way of achieving this is to task students to work on and resolve financial issues of existing small businesses of their choice. Students can also be taught how to prepare funding proposals and pitch to potential investors in their industry. Educational programmes must incorporate material to enlighten students on the collateral requirements when applying for start-up funding. The university can also enrich PAF among students by inviting banks to share information about their products related to small business financing. The educational programmes can also contain material that outlines the organisations providing start-up funding for young entrepreneurs. This can be reinforced by inviting representatives from government agencies

mandated to support ventures owned by young people to share information about such initiatives. Secondly, our study showed that ESE positively moderates the PAF-EI relationship such that EI is high when PAF and ESE are favourable and vice versa. This implies that ESE is a crucial construct that can enhance the effectiveness of a strategy to promote entrepreneurship. The first step to nurturing ESE is identifying its antecedents (Newman et al., 2019; Memon et al., 2019; Adebusuyi et al., 2021; Uysal et al., 2021). Since there is evidence that ESE develops from experience and vicarious learning (Adebusuyi et al., 2021; Uysal et al., 2021), the curriculum needs to incorporate practical activities such as business plan presentations, case studies and action-based entrepreneurial activities to boost ESE among students. “These activities, by enhancing the self-confidence of students would create a positive attitude towards realising a start-up idea, as well as strengthening the self-expectations of strong positive outcomes of selecting entrepreneurship as a future career” (Uysal et al., 2021, p.11).

Regarding policy implications, the government needs to intensify its efforts toward customising its funding programmes to suit the needs of university students. Since most students come from poor backgrounds, the government can work with all banks in South Africa to subsidize loans for young people with innovative ideas that have the potential to become high-growth businesses.

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Comparing Differences In Business and Entrepreneurial-Skills Transfer of Selected Global Entrepreneurship Training Programmes In Zimbabwe

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Keywords

Entrepreneurship education; EMPRETEC programme; ILO Start and Improve Your Business programme; training skills transfer; business startup; job creation

Abstract

Global reports highlight the link between entrepreneurship education and entrepreneurial activity in an economy. This study's aim was to compare how entrepreneurship training affects skills transfer, new venture formation and job creation in Zimbabwe. The study compared the effectiveness of two well-established programmes: the International Labour Organization's (ILO) Start and Improve Your Business programme (SIYB) and the United Nations' *Emprendedores Tecnologia* (EMPRETEC) entrepreneurship programmes that assist promising entrepreneurs in building innovative and competitive SMEs.

A literature review established criteria of what the programme are required to do and outcomes to expect and research hypotheses were formulated. A cross-sectional research design, using a survey was conducted to collect data from 551 randomly selected respondents who had attended either one of the programmes. Descriptive and inferential statistical tests were conducted.

The study determined that both programmes resulted in business start-up with significant business and entrepreneurship skills transfer. Therefore, policymakers, donors and sponsors should support holistic and integrated programmes reflecting at a minimum the identified skills and competencies with appropriate methodologies. Importantly, developing entrepreneurial characteristics was found as a key component in the more effective EMPRETEC programmes compared to the ILO programmes. This unique insight contributes to training efficacy theory and recent development in the entrepreneurial self-efficacy literature.

1 Introduction

Entrepreneurship is an essential catalyst for increasing gross domestic product (GDP) (Bosma & Kelley 2019:3; Mack, White & Senghor 2019:3) and plays an important role in economic growth and development (Van Vuuren & Alemayehu 2018:2). Within a regional context, economic progress in African countries relies on high rates of total early-stage entrepreneurial activity (TEA), according to Herrington and Coduras (2019:2).

However, the African region underperforms in GDP per capita compared to Asian and Latin American countries with similar TEA activity. It is noted that GDP disproportion can be explained by economic performance also being related to healthy institutional ecosystems. Africa is noted to lag in this regard where issues such as poor infrastructure and energy supply constraints severely hamper business growth and entrepreneurship (Herrington & Coduras 2019:2).

Entrepreneurship may be defined as deliberate business start-up and growth behaviour when entrepreneurs do precisely that: start and grow enterprises (Nieman & Nieuwenhuizen 2014:9-10). The entrepreneurial process involves recognising and exploiting opportunity through planning and securing the resources to start and grow a business venture (Hisrich, Peters & Shepherd 2010:6; Shane

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& Venkataraman 2000:219), with innovation strongly reinforcing entrepreneurship (Acs, Szerb, Lafuente & Lloyd 2018:1-2; Schumpeter 1947:150-151). Innovation is when a business producing new products or services (Brundin & Vigren-Kristoferson 2013:455; Love & Roper 2015:44).

In this study's context, entrepreneurship in Zimbabwe has approximately 5.7 million people employed in micro, small and medium businesses, with 2.8 million being youth owners over the age of 18 (Finscope 2012:8). However, the mere 16% contribution of SMEs to GDP for low-income countries like Zimbabwe (Republic of Zimbabwe 2014:9) is in stark contrast with high to medium-income countries' average of 39% to 51%. The Finscope 2021 MSME survey to be launched in 2022 will validate the growing importance of the MSME sector in Zimbabwe. Therefore, SMEs can increase their benefit to Zimbabwe, given their potential to innovate and be flexible with low start-up costs and capacity for rapid development compared to larger enterprises (Karedza et al. 2014:38).

However, Zimbabwean SMEs have been affected by several constraints. Various studies have pointed out that SMEs in Zimbabwe are limited by factors such as; access to and the cost of finance; lack of marketing; poor management skills; poor entrepreneurial skills; and lack of access to infrastructure, land and information and are operating in a difficult regulatory environment (Bomani, Fields & Derera 2015:125; Karedza et al. 2014:39). There is a significant dominance of SMEs in the manufacturing sector, however like other SMES, they face a myriad of challenges that include limited access to finance, inadequate and costly workspaces, lack of proper technologies and machinery and inadequate skills resulting in the high cost of doing business and informalisation (Republic of Zimbabwe, 2020:107).

These aspects are important in the context of entrepreneurial ecosystems essential for providing for the needs of the small business sector, not only in Zimbabwe but globally (Acs et al. 2018:1-2; Hechavarría & Ingram 2018:22). At the time of this research, Zimbabwe – for more than 15 years – had been experiencing an economic downturn and instability, including hyperinflation, unemployment and a de-industrialised and informal economy. The broader institutional ecosystem and economic context in Zimbabwe cannot, therefore, be counted on to provide the level of support desired by SMEs in the country. However, the Zimbabwean government acknowledges SMEs as the engine of economic growth, given their high labour-to-capital ratio (Ledriz-Zeparu 2013:21).

The importance and role of the SMEs sector is acknowledged through, the share of foreign exchange allotments of the SMEs Auction to total allotments grew from 8% in first quarter of 2021 to 19% in the fourth quarter of 2021 (Reserve Bank of Zimbabwe, 2022:112)

In the context of the above-mentioned, limited business and entrepreneurial skills affect the growth of SMEs in Zimbabwe (Bomani et al. 2015:125; Karedza et al. 2014:39). To ensure that the contributions of the SME sector are realised, the government has collaborated with support institutions such as the United Nations' (UN) Emprendedores Tecnologia (EMPRETEC), the International Labour Organization's (ILO) Start and Improve Your Business (SIYB) and the Small Enterprise Development Corporation to help the SME sector (Zindiye, Chiliya & Masocha 2014:662). Entrepreneurship training is recognised as a measure to improve the capabilities of entrepreneurs to start and grow businesses (Balachandra, 2019:72; Neck & Corbett, 2018:10)

Although the government, private sector and non-governmental organisations (NGOs) attempt to build entrepreneurs' business and entrepreneurial skills capacities, the gaps in training and skills are not adequately addressed by service providers or through skills sets that they offer (Republic of Zimbabwe 2008:31). Various government training programmes are implemented, for example, vocations, apprenticeship and entrepreneurship, NGOs, different UN agencies and the private sector offer entrepreneurship training in Zimbabwe. An assessment of the role that different entrepreneurship and education programmes play is therefore required, which this study does by comparing the effectiveness of the two largest entrepreneurship training programmes in the country.

Against this background – specifically, the low contribution of SMEs to GDP in countries like Zimbabwe – the interest of this study is that entrepreneurship training is generally lacking, and available training is not of the required quality and standard, resulting in a skills gap. Therefore, the effectiveness of entrepreneurship training programmes in Zimbabwe in achieving their training objectives, such as business start-up and growth, must be better researched and understood.

For example, a 2002 impact evaluation in Brazil found that the level of entrepreneurship due to EMPRETEC training is more than twice that of the general population (Sanyang & Huang 2009:325). However, earlier studies on the EMPRETEC programme conclude that behavioural changes seem to occur in the short run, with their influence diminishing in the long run. A possible explanation could be because the programme ‘learning effects are tacitly integrated into business practices and become less dominant over time as external factors “smooth” out the learning effects’ (Grossmann 2005:9).

Furthermore, the ILO SIYB programme has trained more than 4,5 million people in 100 countries. The UN’s EMPRETEC programme, the German Technical Cooperation/Creation of Enterprises Formation of Entrepreneurs programme, and business plan competitions and training implemented by Technoserve, among others, have given resources to train people in different regions and countries. However, until quite recently, there has been limited evidence on the causal effects of these programmes (Arraiz, Bhanot & Calero 2019:3). Although some studies have found no relationships between business management training, entrepreneurship training and improved business performance, others have established significant effects of business and entrepreneurship training on profits/sales (Mukata, Ladzani & Visser 2017:87).

In addition, after assessing the SIYB programme against similar programmes, some argued it is ineffective to empower youth with business management skills and microfinancing within diverse business settings and local environment contexts (Ntlaloe 2011:35). However, the SIYB programme in Lesotho addressed the entrepreneurial challenges of starting one’s own business and provided business management, business planning and record-keeping skills. However, the SIYB programme has short classroom-oriented training (Ntlaloe 2011:88-89), and according to Moremong-Nganunu (2009:224), the SIYB is not an effective programme, with limited appropriateness or relevance in developing countries. For example, in Botswana, SIYB does not include key entrepreneurship variables like evaluating opportunities and competitiveness as components of a quality curriculum (Moremong-Nganunu 2009:236).

The current study was conducted to compare the effectiveness of the two largest entrepreneurship training programmes in Zimbabwe developed for start-up and existing businesses. The empirical study was conducted using a quantitative survey of trainees of the ILO’s SIYB and EMPRETEC programmes after they had received the training in Zimbabwe. The ILO programme comprises the Start Your Business (SYB) and Improve Your Business (IYB) training packages for potential and existing entrepreneurs (ILO 2007). The EMPRETEC programme consists of the Entrepreneurship Development Workshop (EDW) and Micro Entrepreneurship Programme (MEP) training packages (EMPRETEC 2012:8).

The overall study first consulted relevant literature and identified five factors for indicating and measuring skills transfer: 1. business skills, 2. entrepreneurial skills, 3. business performance, 4. business planning and presentation, and 5. programme methodology. These factors are relevant in establishing the effectiveness of skills transfer of the two globally implemented entrepreneurship training programmes. This literature further provided the theoretical framework and rationale for the study’s research questions and hypotheses. This paper examined four of the five factors identified, excluding business planning and presentation. The research design is *ex post facto* and cross-sectional, as the respondents were surveyed after receiving their training and the study was not involved with the training programmes during its delivery.

2 Literature Review

Studying entrepreneurship requires a definition of the term. Although various definitions have confounded researchers over many years, entrepreneurship is widely accepted as a legitimate field of study (Morris, Kuratko & Cornwall 2014:16). Researchers have defined entrepreneurship as a process of identifying, evaluating and exploiting opportunities; creating something new; and devoting time and effort, with financial, psychological and social risks and uncertainties, where monetary reward and personal satisfaction is received (Acs et al. 2018:1-2; Moore et al. 2010:5; Nieman & Nieuwenhuizen 2014:9-10; Shane & Venkataraman 2000:218-219; Zimmerer & Scarborough 2011:5).

Chell (2013:22) and Degeorge and Fayolle (2011:253) believe the entrepreneurial process is complex and should consider the skills needed for each phase. Kunene (2009:122), however, argues the importance of the entrepreneurial process as being specific regarding the business, technical and entrepreneurial skills needed to prepare participants to go through the stages as they start their business. Kunene (2009:129) further highlights that the different types of training focus on different phases, from pre-start-up to post-start-up.

On the individual level, an entrepreneur identifies opportunities in a new or existing business, creates value and assumes attendant risks (Moore et al. 2010:5). An entrepreneur creates a business given the risks and uncertainty, gains profits through identified opportunities, exploits them and garners resources (Zimmerer & Scarborough 2011:5). Furthermore, entrepreneurs are distinct from managers, as entrepreneurs focus on the development and growth process, instead of daily management functions such as general management, marketing or finance and functional management competencies (Mahmood, Basharat & Bashir 2012:513; McKenzie & Woodruff 2014:56-57; Sánchez 2011:428). More recent entrepreneurship studies have adopted theories and concepts from psychology, sociology, economics or strategic management, which is a shift in focus from individuals and contexts to the convergence of knowledge from various fields (Sánchez 2011:428).

Generally, there is a consensus that facets of entrepreneurship can be taught (Farashah 2013:870), which catalyses the further development of developing economies (Dzisi & Odoom 2017:440). A part-outcome of entrepreneurial education and training is the entrepreneurial mindset, referring to a thinking propensity and awareness to identify a new opportunity and act on it, which separates entrepreneurs from non-entrepreneurs (Davis et al. 2016:2; Strimel et al. 2019:32). The entrepreneurial mindset has been noted in studies on Africa, where entrepreneurship positively impacts economic growth (Herrington & Coduras 2019:2).

To conclude this sub-section, it is notable that entrepreneurship catalyses economic development and competitiveness (Mack et al. 2019:3). Developing entrepreneurs is therefore important through educating and training them. Government legislation and educational systems can influence the rate of entrepreneurship – and economic activity – because education equips individuals to perceive opportunities and gives them the knowledge to use in developing new ventures (Do Paço & Raposo 2011).

2.1 Entrepreneurship education and training

Entrepreneurship education and training (EET) should be differentiated from business management education (Vosloo, Vosloo & Antonites 2018:295). EET strengthens the intention to go into business and shapes entrepreneurial attitudes, skills and culture (Martínez et al. 2010:15). EET conveys entrepreneurial competencies formally and involves the concepts, entrepreneurship skills and mental awareness that individuals use to start and develop ventures (Isaacs et al. 2007:614). Through EET, personal qualities and attitudes are developed, including formal knowledge and skills, giving individuals competence in entrepreneurship (Ndedi 2013).

Theories on educational training show that non-cognitive skills are also important to increase entrepreneurial behaviour and efficacy (Rideout & Gray 2013:331). Starting a business is, therefore, also based on non-cognitive attributes such as perceptions of desirability, feasibility, attitudes, social norms, self-efficacy and the character to act (Farashah 2013:871). EET has been associated with

increased entrepreneurship knowledge, skills and competencies (Balachandra 2019:72; Gielnik et al. 2016:339). Many studies have evaluated EET programmes and have concluded that they are indeed linked to higher levels of enterprise start-up and growth (Mungule & Van Vuuren 2016; Nabi et al. 2017; Rauch & Hulsink 2015; Rauch & Rijdsdijk 2013; Valerio, Parton & Robb 2014).

EET builds entrepreneurship knowledge and skills at all levels of the educational system (Martínez et al. 2010:16). While general education positively affects general entrepreneurial performance, entrepreneurial training is effective for those starting their own businesses (Sánchez 2013:448). Furthermore, Sánchez (2013:449) proposes that the government and institutions should promote lifelong education, which includes EET at all educational levels, to develop market competencies, skills, abilities and knowledge.

For effective EET, the relationship between the goals, target group, content of modules, methodology or pedagogy and approach to assessing the entrepreneurship programme must be clear (Lekoko, Rankhumise & Ras 2012:12027). According to Kunene (2009:122), the key focus areas of entrepreneurial training are the business, technical and entrepreneurial skills needed to catalyse entrepreneurial activity. SMEs can survive when provided with training programmes that impart relevant and transferable skills. Pretorius, Van Vuuren and Nieman (2005:424) posit that the transfer of knowledge and skills can be incorporated into training programmes. Botha, Nieman and Van Vuuren (2007:163) postulate that changing and enabling the behaviour needed for starting a business is important.

Regarding pedagogy, the experiential or ‘learning-by-doing’ method is more effective than lecture methods for developing entrepreneurial skills and attitudes (Martínez et al. 2010:11). Experiential learning using games or simulations or the creation of a business through practical adult teaching methods, instead of focusing on theory, can improve learning outcomes (Rideout & Gray 2013:332). Experiential learning should therefore form an integral part of the entrepreneurial training process as several important aspects of entrepreneurship cannot be simulated in a classroom (Vosloo et al. 2018:300). A motivated facilitator with practical business start-up experience also requires adequate education and training to perform the multiple roles of trainer, mentor and role model (Azim & Al-Kahtani 2014:134).

2.2 EET outcomes: Entrepreneurial skills, business skills and business start-up and growth

According to Chell (2013:8), skills are implicit through action, reflecting cognitive and affective constructs and context. Skills are not an individual’s fundamental, innate capacities and must be developed using training, practice and experience. Skill acquisition is a process of gaining effective and ready knowledge to develop personal aptitudes and abilities in a specific field (Andah & Akpo 2021:46). Notably, skills are classified as personal, technical, business operation and management (Perks & Struwig 2005:172). Entrepreneurs require a range of technical, business management and entrepreneurial skills.

Martínez et al. (2010:11) postulate entrepreneurship training as developing knowledge and skills in preparation for starting a business and contend that training has a role in supporting and ensuring that small businesses start more successfully. Synonymous with skills are competencies and abilities. According to Mojab, Zaefarian and Azizi (2011:440), entrepreneurial competencies, including ‘motivations, characteristics, knowledge and skills’, are shown by those starting a business.

Skills expected from entrepreneurship training are business skills consisting of functional management skills such as general management, financial, costing systems, human resource and information systems, strategy, planning, marketing, and project and time management. Business management skills are required to grow ventures. For example, increased profitability and business growth are reconcilable with management efficiency and practices defined through general management, marketing management and business planning generally included in entrepreneurship training programmes (McKenzie & Woodruff 2014; Morris et al. 2013).

Furthermore, entrepreneurship training must develop soft and hard skills, with enterprising skills including creativity, innovation, motivation, and identifying role models and opportunities. Entrepreneurial skills must further include the ability to create, identify and exploit opportunities (Igwe et al. 2014:103). Entrepreneurial competencies are what entrepreneurs need to know and do to start and grow a business (Man, Lau & Chan 2002:124). Independent studies have identified opportunity identification, perseverance through difficult situations, determination (the need for achievement) and networking amongst the top entrepreneurship competencies (Kyndt & Baert 2015; Rezaei Zadeh et al. 2017).

Training and education programmes have been shown to affect entrepreneurial self-efficacy (Elliot, Mavriplis & Anis 2020:49), and entrepreneurs feel more confident about business start-up and growth after being influenced by entrepreneurship training interventions. These skills may be developed and improved by training and practice (Mamabolo, Kerrin & Kele 2017:1). Sánchez agrees that entrepreneurial skills can be taught – it is not only a matter of innate personality characteristics and entrepreneurship training can enhance an individual’s skills and creativity to be a successful entrepreneur (Sánchez 2013:448).

2.3 Entrepreneurship training programme design, methodologies, and models

In business management education, EET is designed for outcomes that include creating the mindsets and skills entrepreneurs require (Vosloo et al. 2018:295). To be effective in doing so, Henry, Hill and Leitch (2003:91) indicate that the key features of well-designed EET programmes are:

- The use of a mix of didactic, skill-building and indicative learning approaches;
- The role of the facilitator as a role model, consultant or counsellor;
- Adequate time for individual learning;
- A focus on the needs of participants; and
- Programme objectives that include the domains of learning, knowledge, skill, competence and attitude.

For effective EET, a relationship between the goals, target group, content of the courses or modules, methodology or pedagogy and assessment is required for the entrepreneurship programme (Lekoko, Rankhumise & Ras 2012:12027). Some researchers argue that many entrepreneurship training initiatives do not address the entrepreneurs’ real needs, as some programmes are task-oriented instead of behaviour-oriented and focus on functional skills for business management rather than entrepreneurial skills (Henry et al. 2003:97). These challenges should be considered when EET is designed. According to seminal work by Kirkpatrick (1967) and Kirkpatrick and Kirkpatrick (2009:3), vocational training must meet the participants’ needs to be successful.

Following a semi-systematic literature review, Farashah (2013:870) indicated that the range of EET was established in the literature to be ‘education for, about and in entrepreneurship’. Where education *for* entrepreneurship seeks to stimulate the entrepreneurship process and ways to create a business, education *about* entrepreneurship offers an understanding of entrepreneurship and how it benefits society. Finally, education *in* entrepreneurship aims to make individuals innovative and change agents and provide them with skills and competencies for starting and growing businesses.

Notably, Farashah’s analyses (2013) show a shift from education *for* entrepreneurship to education *in* entrepreneurship. Training in competencies is thus essential for inclusion when developing entrepreneurship training programmes. Moreover, competencies are key to undertaking an actual business, not only training in the knowledge and resources required to start a business (Sánchez 2013:449). Therefore, for EET to be effective, it should focus on practical ‘*in* entrepreneurship’.

Various factors contribute to EET’s effectiveness, including the core components of programme goals and programmatic elements. Goals are independent variables informing the choice and design of the programme elements, which form the relationships between the core components. Components, such as the characteristics of the programme participants, contextual characteristics of the programme’s

environment and funding, are moderators influencing a programme's effectiveness in achieving its goals (Schneider 2017:52). Furthermore, using interactive practical experience and learning-by-doing (experiential learning) components will contribute to overall effective entrepreneurship training (Igwé et al. 2014:106).

One can measure training effectiveness, efficiency and quality through reaction, learning, behaviour, and results (Kirkpatrick 1967; Mukata et al. 2017:85). The delivery methodology can include learning-by-doing, real-life scenarios, case studies and presentations by entrepreneurs or more didactical and conventional procedures whose efficiency can be assessed (Lekoko et al. 2012:12027). Lastly, the trainers, curriculum and programme follow-ups such as mentorship all influence EET effectiveness. Jones and Matlay (2011:701) posit that what makes EET effective 'has less to do with transferable teaching techniques, or standardised curricula and [has] more to do with the unique set of dialogic relations'.

2.4 The EMPRETEC and SIYB entrepreneurship training programmes in Zimbabwe

With various training programmes for SMEs in Zimbabwe, this study researched the two dominant training programmes in the market: the ILO's SYB and SIYB programmes and the EMPRETEC's EDW and MEP programmes. The ILO and EMPRETEC programmes have operated for nearly three decades and are used by government ministries, non-governmental organisations (NGOs), business associations and the private sector.

In the Zimbabwean context, there is very little evaluation of the effectiveness of entrepreneurship programmes. It is argued that when evaluating training courses, it is best to directly relate programme outcomes to objective economic measures (Henry et al. 2003:103), although the evaluation will depend on the level of economic penetration the programmes focus on.

For example, the EMPRETEC EDW package is meant for those starting a business (so business start-up is evaluated and measured) and those with an existing business (so business growth is evaluated and measured). On the other hand, the MEP programme is customised to focus on the micro sector, which may have somewhat different metrics. Similarly, the ILO's SYB is for potential entrepreneurs, while the ILO IYB package is for existing small businesses and provides modular content on business planning, record-keeping, marketing and other operational topics.

It is conceivable then that the different programmes target different levels of economic penetration, such as business planning and start-up versus business growth (Henry et al. 2003:103). Therefore, these aspects must be designed into the evaluation and measurement tools, and it is implied that this study must do the same.

2.5 EMPRETEC's EDW and MEP programme packages footprint, theory, content and aims

EMPRETEC is an integrated capacity-building programme operating in 32 countries with more than 300,000 trained entrepreneurs. EMPRETEC offers a behavioural approach to entrepreneurship, unlike other types of training (Arafeh 2016:5). The EMPRETEC programme is based on a theoretical framework and follows the traits approach, where there is a set of behaviours and traits that characterise high-achieving individuals. The traits approach combines defining the entrepreneur as an economic agent from an individualistic perspective and with self-reliant behaviours (Coutinho 2020:85).

EMPRETEC aims to develop ten personal entrepreneurial characteristics (PEC) competencies, each defined in terms of the behaviours to be tested and developed in practical activities (Guedes Gondim & Mutti 2011:199). The ten PECs that the EMPRETEC programme is based on were developed at Harvard University, from which UNCTAD published an Entrepreneurship Policy Framework and Implementation Guidance. The EMPRETEC EDW package is for entrepreneurs starting a business and those with existing businesses. The EMPRETEC MEP package has been derived from the EDW and was customised for micro-entrepreneurs, start-ups and existing businesses (EMPRETEC 2012).

The MEP and EDW provide content that covers the ten PECs and the development of a business plan, including cash flow forecasts.

Prior studies that have evaluated EMPRETEC programmes have shown modest but positive business start-up levels within three years, with between 9% and 33% of the participants eventually opening a business. Furthermore, employment numbers increased between 5% and 25% among those who already had a business prior to receiving the training, and sales increased between 10% and 80% (Denis 2000:8). Denis (2000) studied the EMPRETEC programmes across five countries and reported that firm survival rates varied between 30% and 85% for businesses already in existence before receiving the EMPRETEC training.

While the outcomes expounded above are favourable to the evaluation of the EMPRETEC programme, it must be noted that few studies of EMPRETEC programmes used experimental research designs (Grossmann 2005:2-8). Experimental research has more strict measures of causality that involve robust testing against control groups, and against contextual factors that differ between countries and regions. Therefore, using experimental research may have been a more robust test of the results in past studies of EMPRETEC.

However, other studies have also reported positive results from EMPRETEC programmes, including Glaub (2011:6), who found increased new business creation, increased survival rates and sales improvement, and Sanyang and Huang (2009:325), who found that those who participated in an EMPRETEC programme in Brazil had twice the level of entrepreneurship than those who did not participate.

2.6 ILO's SYB and SIYB programme packages footprint, theory, content and aims

According to the ILO (2012), the SYB is aimed at potential entrepreneurs who have a business idea and are ready to start a business based on that idea. The SYB focuses on content on starting and running a business, including developing a business plan with cash flow forecasts (ILO 2007). The programme aims are to assist the potential entrepreneur in developing concrete, feasible and bankable business ideas and writing a business plan to start micro or small-scale businesses. The SYB training is described as interactive and organised around the potential entrepreneur's needs, and it uses advanced adult training methods (ILO 2012). In conjunction, the ILO's IYB programme is for entrepreneurs who already have an operational business (for at least six to 12 months) and are interested in improving their business management. The training methods are modular and according to the entrepreneurs' needs, and business counselling is provided through mentoring (ILO 2012).

De Mel, McKenzie and Woodruff (2012:24-25) indicate that business owners' use of the SIYB training practices is modest for those already in business. However, it assisted those thinking of starting a business to do so faster than those in the control group. Their study in Sri Lanka ascertained that training alone brought about some changes in business practices but had no effect on business profits, sales, or capital stock (De Mel et al. 2012:24-25). Moremong-Nganunu's (2009:224) evaluation of the ILO's SIYB in Botswana concluded that the entrepreneurship programme was ineffective in that country. The authors also questioned why key entrepreneurship competencies such as opportunity evaluation and competitiveness are not part of the SIYB (Moremong-Nganunu 2009:236).

However, according to Mukata et al. (2017:86-87), the effectiveness of the SIYB programme increases when training is embedded with follow-up support regarding access to finance, mentors, coaches and technical skills. In addition, SIYB programmes are regarded as effective when through self-assessment, entrepreneurs frequently report business improvement, such as actual business start-up, or for existing businesses, this could be improved quality, sales increase, higher profits and employing more workers (De Mel et al. 2012:24-25).

Van Lieshout, Sievers and Aliyev (2011:16) state that the methods applied to measure the impact of SIYB vary substantially in countries and regions, and the results may therefore differ. This point is

relevant in terms of the economic impact of such programme outcomes (Henry et al. 2003:103) when, for example, job creation is left unmeasured (Van Lieshout et al. 2011:16). The authors' findings show that new business resulting from the SYB created an average of three jobs (Van Lieshout et al. 2011:18).

2.7 Models for entrepreneurship training and education

The elements and content of EET programmes developed in South Africa illustrate the skills, constructs and concepts included in entrepreneurship training models. Van Vuuren and Nieman (1999) developed the Entrepreneurial Performance Education (E/P Education) model presented in a formula

$$E/P = f(aM \times b E/S \times c B/S)$$

where E/P is defined as entrepreneurial performance; M = motivation; E/S = entrepreneurial skills; B/S = business skills, and a, b and c are constant coefficients.

Pretorius (2001) developed the Entrepreneurial Education (E/E) model outlined as

$$E/E = f \{ aF (bA \times [cB/P \times dE/S \times eB/S]) \}$$

where E/E = entrepreneurship education for start-ups; F = facilitator's skills, knowledge and motivation; A = approaches used by facilitator; E/S = entrepreneurial success themes and knowledge; B/S = business skills and knowledge; B/P = business plan usage and a, b, c, d and e are constant co-efficients (Kunene 2009:133).

Pretorius et al (2005) further developed the Education for Improved Entrepreneurial Performance (Ed for E/P) model, which integrated and strengthened the above E/P Education and E/E models (Pretorius et al. 2005:422). Kunene (2009) developed the Training for Entrepreneurship model, which recommends that business, entrepreneurial and supporting skills be integrated into the entrepreneurial process's training and phases. These South African models are highlighted because they contributed to how the study analysed the Zimbabwean programmes.

2.8 Key hypotheses development based on the research questions

Research questions are exploratory and seek to analyse and provide empirical evidence to answer them (Bak 2009:21; Mouton 2011:53). Based on the literature expounded above, the researchers posed research questions related to skills transfer and training programme effectiveness. Subsequently, to answer the research questions, they were tested based on their related hypotheses. The hypotheses were therefore formulated as the basis to test for business skills, entrepreneurial skills, job creation and business start-up, and programme methodology (design and delivery) meeting the participants' needs. The study research questions and hypotheses are outlined in Table 1 below.

Table 1. Research Questions and Hypotheses

Research Questions	Related Hypotheses
1. Are there differences between the ILO and EMPRETEC entrepreneurship training programmes in terms of imparting entrepreneurial skills?	<p>Null hypothesis 1 (H₀₁): There are no statistically significant differences regarding entrepreneurial skills transfer between the four training packages.</p> <p>Alternative hypothesis 1 (H_{A1}): There are statistically significant differences regarding entrepreneurial skills transfer between the four training packages.</p>
2. Are there differences between the ILO and EMPRETEC entrepreneurship training programmes in terms of imparting business skills?	<p>Null hypothesis 2 (H₀₂): There are no statistically significant differences regarding business skills transfer between the four training packages.</p> <p>Alternative hypothesis 2 (H_{A2}): There are statistically significant differences regarding business skills transfer between the four training packages.</p>

Research Questions	Related Hypotheses
3. To what extent do the ILO and EMPRETEC entrepreneurship training programmes results in terms of new business start-up differ?	<p>Null hypothesis 3 (H₀3): There are no statistical differences in the number of new business start-ups between the ILO and EMPRETEC programmes.</p> <p>Alternative hypothesis 3 (H_A3): There are statistical differences in the proportion of new business start-ups between the ILO and EMPRETEC programmes.</p>
4. To what extent do the ILO and EMPRETEC entrepreneurship training programmes differ in terms of creating jobs?	<p>Null hypothesis 4 (H₀4): There is no statistically significant difference in job creation after trainees attended the ILO and EMPRETEC programmes.</p> <p>Alternative hypothesis 4 (H_A4): There is a statistically significant difference in job creation after trainees attended the ILO and EMPRETEC programmes.</p>

Source: Own compilation

3 Methodology

3.1 Research design and sampling methods

The purpose of the study was exploratory and to undertake empirical research, which was conducted in a formal study to test the hypotheses and answer the research questions. The study concepts were initially based on academic books and journal articles on entrepreneurship, business management skills, training and education. This was followed by an empirical quantitative study conducted in the field. The study adopted a cross-sectional, ex post facto, survey research design. Empirical data was collected using a quantitative survey questionnaire from trainees of the ILO and EMPRETEC programmes after they had received training. It was, therefore, not an experimental design where a before-and-after observation was recorded (Cooper & Schindler 2011:468). The study has a statistical scope, and the sample results were analysed using statistical procedures for population generalisation.

The sample consisted of potential and existing entrepreneurs from a population of 800 ILO SYB, ILO IYB and EMPRETEC EDW and EMPRETEC MEP-trained entrepreneurs. The population was derived from databases from 2011-2013 of entrepreneurship training and education programmes in Zimbabwe, specifically, the ILO SIYB and the EMPRETEC EDW and MEP packages for SMEs. The population sampling frame consisted of start-up and existing business owners selected from the major commercial and industrial cities, towns and rural areas in Zimbabwe. A random probability sampling methodology was used.

3.2 Research questionnaire structure

The questionnaire structure was designed to facilitate collecting data that was relevant to the research's key issues to answer the research questions and conduct hypothesis testing. Data was subsequently collected for the following:

- Demographics: gender, age, language and education or EMPRETEC training;
- Technical skills
- Entrepreneurial and business-skills training
- Training knowledge and skills;
- Satisfaction with the ILO or EMPRETEC training received;
- Training duration and if follow-ups were done after training;
- What training assisted trainees regarding business and entrepreneurial skills;
- Business start-up status – before and after receiving training;
- Business description: location, age, registration status, sector, employees, products, services, customers, sales, profits and assets;
- Sources of finance;
- Type of finance institutions applied to for business finance and purpose of intended use; and
- Business performance in respect to internal and external factors contributing to success and barriers to development of SMEs.

3.3 Data analysis

Descriptive statistics were conducted to establish the personal and business demographic profiles of the 551 entrepreneurs. Furthermore, inferential statistics were administered using chi-square tests, Kruskal-Wallis tests, t-tests and analysis of variance (ANOVA) to test hypotheses pertaining to the entrepreneurial and business skills, new business venture and job creation; and participant satisfaction with the ILO and EMPRETEC programmes.

Rotated factor analysis results outlined business skills to include the following variables: business systems, processes, procedures and records; financial management; human resource management; operations; business plan development; strategic plan development; market research; business regulations; mobilising business resources and networking. Entrepreneurial skill variables included hard work, persistence, the need for achievement, independence, self-confidence, problem-solving, decision-making, creativity, opportunity identification and the use of role models.

The Kruskal-Wallis tested the null hypotheses stating that there were no statistical differences between programmes for the dependent variables of business-skills and entrepreneurial-skills transfer. The Kruskal-Wallis has the advantage of testing statistically significant variance between groups when the data per group are not normally distributed. In addition, when statistical significance was found, the multiple comparisons post-hoc test was conducted to understand which programmes were statistically significantly different. To further understand if there was a statistically significant difference in job creation and new business start-up categorical data, the null hypotheses for the means were tested by employing chi-square tests.

4 Findings

The descriptive statistics are presented first in Table 2 to provide the context within which the inferential statistics are interpreted.

Table 2: Descriptive Statistics (N = 551)

Variable	Results
Number of respondents	ILO trained = 240; and EMPRETEC trained = 311
Gender	53.5% female; and 46.5 % male
Age	Majority respondents ages between 16-35 years, with SYB mean age = 29 years; IYB mean age = 28 years; EDW mean age = 28 years; and MEP mean age = 34 years
Education	12% had completed primary school; 11% had attended one to three years of high school; 50% completed General Certificate Education (GCE) Ordinary-level (years of high school); 7% completed GCE Advanced-level; and 20% completed tertiary education (diplomas and first degrees)
Existing operating business	327 operating a business of their own; and 224 not currently owning a business

Source: Own compilation

Table 2 shows the sample's key descriptive statistics. The average age was 28 to 29 years old, with the majority being youth entrepreneurs. Fifty per cent of all respondents achieved their GCE and thereby completed ordinary secondary schooling. Furthermore, 20% of all respondents had gone on to achieve a tertiary qualification – either a diploma or first degree. It is therefore evident that half of the respondents have a good level of education, with a high level of literacy.

The majority (311) received training from the EMPRETEC, while 240 were trained by the ILO SIYB programmes. Gender composition showed slightly more females than males. Only 60% of the entrepreneurs had technical skills training prior to the entrepreneurship programmes, indicating the

participants' necessity-driven nature. At the time of the survey, only 59% of respondents operated a business, and 41% did not.

4.1 Inferential statistics results and discussion

Inferential statistics go beyond mere descriptions of observations and are conducted to estimate population values by extending the findings from the sample to the population. This is a process of inferring and drawing conclusions about the population, as derived from sample findings (Babbie 2010:467). The study conducted inferential statistics to test the research hypotheses and to answer the stated research questions.

4.1.1 Imparting entrepreneurial skills

The first research question considers the differences between the two training programmes in terms of them imparting entrepreneurial skills, represented in the following research hypotheses.

- **Null hypothesis 1 (H₀1):** There are no statistically significant differences regarding entrepreneurial-skills transfer between the four training packages.
- **Alternative hypothesis 1 (H_A1):** There are statistically significant differences regarding entrepreneurial-skills transfer between the four training packages.

To determine any variance between programmes in this regard, the researchers conducted a Kruskal-Wallis test. However, although a Kruskal-Wallis test shows whether a statistical significance difference exists, it does not indicate precisely where the difference is between the four training packages the exists. Therefore, the multiple comparisons post-hoc test was conducted to further understand the differences.

Table 3: Kruskal-Wallis Multiple Comparison Two-tailed Test for Transfer of Entrepreneurial skills of the ILO and EMPRETEC Skills Training Programmes

Dependent variable: Entrepreneurial skills	Multiple comparisons DiffMean (analvars.sta)	p-values (2-tailed);	entrepreneurial skills
	Independent (grouping) variable: Prog. Kruskal-Wallis test: H (3, N = 482) = 25.73205 Kruskal-Wallis test p-value, p = .0000		
	1. ILO SYB R: 228.19	2. ILO IYB R: 227.24	3. EMPRETEC EDW R: 216.20
			4. EMPRETEC MEP R: 293.21
1. ILO SYB		1.000	0.005*
2. ILO IYB	1.000		0.262
3. EMPRETEC EDW	1.000	1.000	0.009*
4. EMPRETEC MEP	0.005*	0.262	0.009*

*Indicates a statistically significant variance at $\alpha = 0.001$, confidence interval: 99%

Source: Own compilation based on the data analysis

Firstly, the Kruskal-Wallis multiple comparisons test finding in Table 3 show that there are statistically significant differences between the entrepreneurial-skills transfer scores of the four training packages, $p < 0.001$. Secondly, the result shows that entrepreneurial-skills knowledge transfer was statistically significantly higher for respondents trained in the EMPRETEC MEP package than those who received ILO SYB and the EMPRETEC EDW training. On this basis, **the null hypothesis H₀1 is not accepted, and the alternative hypothesis H_A1 is.**

4.1.2 Imparting business skills

The second research question considers the differences between the training programmes in imparting business skills, represented in the following research hypotheses.

- **Null hypothesis 2 (H₀2):** There are no statistically significant differences regarding business skills transfer between the four training packages.
- **Alternative hypothesis 2 (H_A2):** There are statistically significant differences regarding business skills transfer between the four training packages.

To determine any variance between programmes regarding business skills, the researchers again conducted a Kruskal- Wallis multiple comparisons test, the findings are illustrated in table 4.

Table 4: Kruskal-Wallis Multiple Comparison Two-tailed Test for Transfer of Business skills Knowledge of the ILO and EMPRETEC Skills Training Programmes

Dependent variable:	Multiple comparisons p-values (two-tailed); Knowledge and skills DiffMean (analvars.sta)			
Business skills	Independent (grouping) variable: Prog. Kruskal-Wallis test: $H(3, N = 482) = 34.73951$; Kruskal-Wallis test p-value $p = .0000$			
	1. ILO SYB R: 230.64	2. ILO IYB R: 220.60	3. EMPRETEC EDW R: 209.40	4. EMPRETEC MEP R: 300.70
1. ILO SYB		1.000	1.000	0.001*
2. ILO IYB	1.000		1.000	0.086
3. EMPRETEC EDW	1.000	1.000		0.001*
4. EMPRETEC MEP	0.001*	0.086	0.001*	

*Indicates a statistically significant variance at $\alpha = 0.001$, confidence interval: 99%

Source: Own compilation based on the data analysis

Again, the Kruskal-Wallis findings in Table 4 show statistically significant differences between business-skills transfer scores of the four training packages, $p < 0.001$ for ILO SYB, EMPRETEC EDW, MEP and $p=0.086$ for ILO IYB. The multiple comparison post-hoc result further shows that business-skills transfer was statistically significantly higher for respondents trained in the EMPRETEC MEP package than those who received ILO SYB and EMPRETEC EDW training.

The findings from Table 3 and Table 4 conclude the superior training results from the EMPRETEC MEP training package compared to the ILO SYB and EMPRETEC EDW training packages. It should be noted that the ILO IYB has a non-significant variance. This study's result – for entrepreneurial and business skills – infers those trainees indicated a higher gain in these specific skills from the EMPRETEC MEP package compared to the other training packages.

This finding is relevant in the context of positive results from EMPRETEC programmes found by Glaub (2011:6), and Sanyang and Huang (2009:325) who found that trainees who had participated in an EMPRETEC programme had twice the level of entrepreneurship in a population like Brazil, compared to those who did not. On this basis, **the null hypothesis H_02 is not accepted, and the alternative hypothesis H_A2 is.**

Why this may be the case is partially explained by the design of the EMPRETEC MEP package. It is a practical beginner's version aimed at micro-enterprises and start-ups but is derived from the EMPRETEC EDW package for SMEs. Both the MEP and EDW provide content on PECs, business plan structure and cash flow projections. Furthermore, the EMPRETEC MEP package content incorporates financial planning and is less detailed on structuring a business plan but more in-depth and detailed on the PECs (EMPRETEC 2012).

In comparison, the ILO SYB covers preliminary aspects of entrepreneurial characteristics but is more detailed on business planning, costing, cash flow planning, starting a business, products and services, and employees. The ILO IYB content encompasses costing, buying, marketing, record-keeping, stock control, business planning and cash flow, and profit and loss projections. (ILO 2012). In comparison to the superior results above found for the EMPRETEC programme; it may be inferred that the ILO's focus on business management and business planning is less effective than focusing on personal entrepreneurial competencies for the EMPRETEC.

The above inference is supported by the nature of the EMPRETEC programme, which has a behavioural approach to entrepreneurship instruction that is considered markedly different from other types of training (Arafah 2016:5). EMPRETEC focuses on role-modelling behaviours and traits of high-achieving individuals and defines the entrepreneur as an individualistic economic agent with self-reliant behaviours (Coutinho 2020:85). The self-reliant entrepreneurial behaviours require

resilience and self-motivation if it is to result in practical activities such as start-ups (Guedes Gondim & Mutti 2011:199).

4.1.3 Result in new business start-up

The study compared the two programmes in relation to new business start-up. This concerns the third research question comparing the number of the ILO and EMPRETEC programmes' new business start-up rates. To evaluate and understand any variance between the two programmes, the researchers calculated the number of respondents between the two programmes who had a start-up after training and those who did not. Then a chi-square test was conducted to determine the statistically significant variance between the two training programmes of start-ups resulting after training. The two hypotheses are stated below, followed by the findings of the chi-square test in Table 5.

- **Null hypothesis 3 (H₀ 3):** There are no statistical differences in the proportion of new business start-ups between the ILO and EMPRETEC programmes.
- **Alternative hypothesis 3 (H_A 3):** There are statistical differences in the proportion of new business start-ups between the ILO and EMPRETEC programmes.

Table 5: Business Start-up Rate and Chi-square Statistic (N = 450), EMPRETEC and ILO

Business Status	EMPRETEC	ILO	Total
Not in business after training	116 (42.03%)	108 (62.07%)	224
Start-up business after training	160 (57.97%)	66 (37.93%)	226
Total	276	174	450
Chi-square statistic	Df	Value	Prob
	1	17.143	<0.001*

*Indicates a statistically significant variance at $\alpha = 0.001$, confidence interval: 99%

Source: Own compilation

Table 5 illustrates that a higher percentage (58%) of the EMPRETEC trainees started a business after training compared to a lower percentage (38%) of ILO trainees. Furthermore, a higher proportion of ILO trainees (62%) were not in business after training compared to the EMPRETEC trainees (42%). Based on the chi-square results, $p < 0.001$, **the null hypothesis H₀3 is not accepted, and the alternative H_A3 is.**

This finding provides evidence that the EMPRETEC training programme was significantly more likely than the ILO programmes in having participants start a business following their training. The study endeavoured to explicate why this is the case. One reason consistent with the prior subsections is that the EMPRETEC training focused more on personal entrepreneurial development than technical or business-skills transfer. Ostensibly trainees of EMPRETEC who felt personally more empowered and motivated were more likely to start a business than those who did not feel this way.

In the context of this study, self-reliant and self-motivated entrepreneurial behaviour links with the theory of planned behaviour (Boyd & Vozikis, 1994:69). Individuals believe that they can increase their inclination to plan and start businesses (Krueger & Brazeal, 1994:94). This is like the case with the EMPRETEC programme that is found to be more focused on entrepreneurial behaviours found to have superior results and outcomes consistent with findings by Newman et al. (2019).

4.1.4 Result in job creation

The fourth research question considers the extent of job creation following the ILO and EMPRETEC programmes. The hypotheses related to the question are:

- **Null hypothesis 4 (H₀₄):** There is no statistically significant difference in job creation after trainees attended the ILO and EMPRETEC programmes.
- **Alternative hypothesis 4 (H_{A4}):** There is a statistically significant difference in job creation after trainees attended the ILO and EMPRETEC programmes.

Table 6 illustrates the results of the T-test for dependent samples conducted to compare the extent of job creation. The researchers wanted to understand if the number of employees of the businesses started after training (N = 225), had increased up to the point that this research was conducted.

Table 6: T-test for Dependent Samples for Job Creation (N = 225)

T-test for dependent samples									
Variable	Marked differences are significant at $p < .05000$								
Include condition: Business = 'Start-up'									
	Mean	Std. Dv.	Diff.	Std. Dv. Diff.	t	Df	p	Confidence -95.00%	Confidence 95.00%
Current employees	3.644	4.387							
Employees at start	2.84	3.654	0.804	2.219	5.436	224	0.001*	0.512	1.096

*Indicates a statistically significant variance at $\alpha = 0.001$, confidence interval: 99%

Source: Own compilation

The mean at the point of business inception (after training) was 2.84, compared to 3.64 at the point of the survey. The result shows a statistically significant ($p = 0.001$) improvement in job creation for businesses that started and survived from when training was conducted in the ILO and EMPRETEC programmes. Then to further understand whether the job creation differed between the new business start-ups following training and businesses already operating at the time of training, the researchers conducted another T-test on the start-up group and the existing business group for the dependent variable *jobs created*. The results are illustrated in Table 7.

Table 7: T-test Comparing Job Creation between Start-ups (N = 225) and Existing businesses (N = 101)

T-tests; Grouping: Business (hypdata.sta)										
Variable	Group 1: Start-up (versus) Group 2: Existing									
	Mean	Mean	t-value	Df	p	Std.Dv.	Std.Dv.	Levene	Df	p
	Start-up	Existing			0.677	Start-up	Existing	F (1, df)	Levene	Levene
Jobs created	0.804	0.702	0.415	324		2.219	1.559	0.543	324	0.461

*Indicates a statistically significant variance at $\alpha = 0.05$, confidence interval: 95%

Source: Own compilation

The analysis was conducted to prove the employment creation effect of the ILO and EMPRETEC training programmes. Of the 551 trained entrepreneurs reached, 59% (N = 225) started a business after training. Table 7 illustrates the results of the T-test conducted to compare the extent of jobs created by start-ups versus existing businesses. A resulting p-value = 0.677, indicating a non-significant variance, was found between the mean job creation of start-ups (0.804) compared to the mean job creation of established businesses (0.702). The actual number of jobs created is similar between the two groups.

This point is relevant regarding the job-creation expectation from new business start-ups versus that of existing businesses. The literature indicates that new small businesses create jobs, which is why TEA is considered vital for economic growth and development. Therefore, job creation is one of the most important contributions of (newly formed) SMEs. However, the research findings yielded a

different result, as illustrated above. Therefore, based on the results, **the null hypothesis H₀₄ is rejected, and the alternative H_{A4} is accepted.** It is therefore inferred that both training programmes were helpful in creating jobs after the respondents were trained, with statistically meaningful increases for new business start-ups and existing businesses.

4.1.5 Result in the participant’s satisfaction of the ILO and EMPRETEC programmes

During the research one of the descriptive statistical analyses conducted was the extent of satisfaction that the training participants had with the ILO and EMPRETEC programmes. This point is relevant because vocational training theory stipulates that training design and delivery must meet the participants’ needs if it is to be successful (Henry et al. 2003:97; Kirkpatrick 1967; Kirkpatrick & Kirkpatrick 2009:3; Lekoko et al. 2012:12027). Ordinal data was collected to establish whether participants were satisfied that the training programmes met their needs. The data was analyzed to produce the training satisfaction rate, of the ILO and EMPRETEC programme, in percentage that are illustrated in table 8.

Table 8: Training satisfaction rate with the EMPRETEC and ILO programmes

Level of satisfaction	ILO SYB	ILO IYB	ILO SYB+IYB	EMPRETEC EDW	EMPRETEC MEP	Total	Percent
Highly dissatisfied	1.33%	0%	0%	0%	0%	2	0.36%
Dissatisfied	0.67%	0%	0%	0%	0.67%	2	0.36%
Satisfied	33.33%	20.67%	14.49%	20.67%	11.36%	117	21.23%
Highly satisfied	64.67%	79.19%	85.51%	79.33%	87.88%	430	78.04%
Total	150	21	69	179	132	551	100.00%

Source: Own compilation

The result indicates that overall, the training participants were highly satisfied with 78% of respondents, and that 21% of respondents were satisfied, with very few participants who recorded a dissatisfaction or highly dissatisfied response to this question. The levels of satisfaction did not differ across the ILO and EMPRETEC training programmes.

Overall, the duration of the programmes was between 3 – 6 days for the EMPRETEC and the ILO is a standard 5-day programme, which the participants attended. The literature consulted supports this finding showing how very high satisfaction rates result in successful programme outcomes, when training meet participants’ needs and expectations (Henry et al. 2003:97; Kirkpatrick 1967; Kirkpatrick & Kirkpatrick 2009:3; Lekoko et al. 2012:12027; Van Vuuren & Botha 2010:607).

5 Conclusions and Recommendations

This research contributes to the field of entrepreneurship, especially entrepreneurship training programmes intended for entrepreneurs in the SME sector. The overall study firstly identified from the relevant literature, five essential factors that entrepreneurship training should encompass: 1. business-skills transfer, 2. entrepreneurial-skills transfer, 3. business performance, 4. business planning and presentation, and 5. programme methodology. These factors were identified as elements in the training models reviewed and are key aspects of effective entrepreneurship training programmes (McKenzie & Woodruff, 2014; Herrington & Coduras, 2019:2; Igwe et al. 2014:103; Van Lieshout et al. 2011:18; Mamabolo et al. 2017:1 De Mel et al. 2012:24-25 Glaub, 2011:6; Kirkpatrick,2009).

The study then focused on four of the above-mentioned factors and conducted empirical research on two global entrepreneurship programmes implemented in Zimbabwe. The study formulated hypotheses and tested for statistically significant differences between the ILO and EMPRETEC programmes regarding entrepreneurial-skills transfer, business-skills transfer, new business start-ups, job creation and participant satisfaction. At the time of the study, no such empirical research – analysing and comparing the performance of the ILO and EMPRETEC programmes – has been

carried out in Zimbabwe or elsewhere. Therefore, the study findings contribute to managerial implications for the ILO and EMPRETEC programmes and ongoing and future implementation. In the macro context of Zimbabwe, both the ILO SYB and EMPRETEC EDW training packages were found to have skills transfer. However, the EMPRETEC trainee sample had a statistically significantly higher proportional gain in entrepreneurial and business-skills transfer, and a higher proportion of business start-ups. In contrast, job creation variance between the two packages was found to be non-significant.

The study infers that the disparity and superior results for the EMPRETEC programmes are because it is highly focused, with more in-depth and detailed development of the personal entrepreneurial competencies. These personal qualities are vital to motivate actual business start-ups and are consistent with prior literature (Isaacs et al. 2007:614; Ndedi 2013). This finding is also important in relation to recent literature that emphasizes the vitality of entrepreneurial self-efficacy (Newman et al. 2019; Gielnik, et al, 2016). Furthermore, this contribution made by the study supports the theory of planned behaviour (Boyd & Vozikis, 1994:69), that when entrepreneurship training programme develop trainees perception and belief that they can plan and start businesses, then they are more likely to do so (Krueger & Brazeal, 1994:94).

In addition, the importance of developing entrepreneurial self-efficacy for entrepreneurs to feel more confident about business start-up and growth after training interventions is acknowledged (Elliot et al. 2020:49). In effect when entrepreneurs' personal competencies are developed and entrepreneurs feel confident about their personal ability, then they generally do better. Entrepreneurial self-efficacy is a factor in deciding to start a business and when specifically targeted by entrepreneurship education and training programmes it will positively influence entrepreneurial intent, behavior, and business startup and growth.

Furthermore, the EMPRETEC packages' content incorporates financial planning but is less detailed in structuring a business plan. In comparison, the ILO programmes are more detailed regarding business planning, costing, cash flow planning, starting a business, products and services and employees; however, they are less effective. This insight is unique in the context of comparing two entrepreneurship training programmes servicing the same target market with the same personal and demographic characteristics.

More insight has been provided to donors, sponsors and governments who support and promote entrepreneurship programmes, including what may be more effective training programmes and what curriculum content should be covered at a minimum. Delivering relevant training content leads to better outcomes and results. This study finds that personal entrepreneurial development is at least as important as entrepreneurial and business skills content.

It is critical to have adaptable and flexible training durations appropriate for different target groups and ensure follow-up is conducted for trainees at their business site or facilitated in small group sessions. This is consistent with training packages, such as those of the ILO, that have better training outcomes when supported by follow-on interventions, such as mentorship or access to finance (Mukata et al. 2017:86-87). This is consistent with Jones and Matlay (2011:701), who argue that effective training 'has... more to do with the unique set of dialogic relations'.

5.1 Recommendations and management implications

Based on the study results, donors, sponsors and training providers are recommended to work with the programmes to integrate business and entrepreneurial skills to achieve the objectives of starting and growing a business. The study findings imply that training practitioners should focus on training packages that develop entrepreneurial characteristics and attitudes, which are equally as important as technical, business and entrepreneurial skills.

Entrepreneurs are recommended to become equipped with technical skills for the line of business they are starting or expanding. Business and entrepreneurial-skills training leads to more success in

business start-ups. The entrepreneurial process's various stages for business start-up and growth requires entrepreneurs to have specific skill sets to successfully move through these stages. It is recommended that the design, content and structure of the training programmes discussed in this paper include, at minimum, entrepreneurial and business skills during initial training. The ILO programme must strengthen the training packages' entrepreneurial-skills and characteristics content to complement the existing content on business skills. The EMPRETEC programme will benefit from strengthened business-skills content in its training packages.

6 Study Limitations and Future Research

The study consisted of empirical research, ex post facto, using a questionnaire survey. It also used models based on the context of South Africa, a more developed and stable economy than Zimbabwe. Further, the Zimbabwean context limited the generalisation of the findings. More analysis is required on the extent of each programme's skills transfer, using larger sample sizes for each training package in the ILO and EMPRETEC training programmes.

Longitudinal studies with an experimental design of respondents in the ILO and EMPRETEC training programmes (including before and after intervention and at various time intervals, such as six months) are recommended to inform more valid impact evaluation studies. In addition, policymakers can put in place national policies encouraging a culture of entrepreneurship, and SME policies can be further improved with entrepreneurship policies.

Integrating entrepreneurship training programmes into the Zimbabwean educational system at the primary, secondary and tertiary levels remain critical. An in-depth analysis of the implications of demographic factors, location, legal status or registration and the entrepreneur's age should be conducted to ascertain how these variables affect the skills transfer results. A comparative research study on women-owned businesses trained in both programmes can contribute to the body of knowledge. Further, a comparative analysis of youth trained in both programmes – in the same country – may also enrich the body of knowledge

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Visionary Constructivists: What Entrepreneurial Students Can Learn From Professional Designers

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Keywords

Entrepreneurship education; Design Thinking; Entrepreneurial; Constructivist; Visionary

Abstract

Entrepreneurship education offers interdisciplinary learning opportunities for entrepreneurial students. On the other hand, design professionals who run their own businesses in the creative industry offer an example of such interdisciplinary thinking in practice. From a theoretical perspective, the relevance of Design Thinking has been identified in business schools and for the management sciences including entrepreneurship. Nevertheless, the application of Design Thinking in business disciplines beyond the method for innovative products or services, is underexplored. This paper explores how designer-entrepreneurs apply their Design Thinking as philosophy to solve Wicked Problems. The research question that this paper aims to answer is: what can entrepreneurial students learn from professional designers? Ten documented cases in Lagos on entrepreneurial designers with an architecture or adjacent design skill set are analysed from the documentary-series: “Made by Design”. The findings reveal that the African creatives in this study offer a visionary constructivist approach to deal with Wicked Problems that may be inferred to a business contexts in order to create opportunities. Implications for entrepreneurship education in terms of Design Thinking as a philosophy are provided accordingly.

1. Introduction

The need for interdisciplinary approaches to teaching entrepreneurship have been promoted particularly when entrepreneurial mindsets are a desired outcome (Fiore, Sansone & Paolucci, 2019; Secundo, Mele, Sansone & Paolucci, 2020). An underpinning theory to promote such an entrepreneurial mindset with special reference to the support of creativity and innovation is Design Thinking (DT) (Dorst, 2015). Several business schools and tertiary institutions therefore include the DT method as a tool to teach entrepreneurial thinking (Groeger & Schweitzer, 2020). The applicability of DT method to promote action (experimentation) and reflection is relevant to developing problem solving skills (Peschl, Deng & Larson, 2021), however, what remains underexplored in the literature is the applicability of DT as a philosophy to solve Wicked Problems. A Wicked Problem can be defined as an ill-structured problem that does not have an exact or precise solution/answer but requires some ideation and prototyping or scenario planning with consideration for each solution as each solution is consequential and may bring about another set of challenges (Sarasvathy, 2021). Wicked problems are therefore complex problems that require creativity to move toward potential solutions. In this regard, grappling with Wicked Problems may require entrepreneurial thinking on a meta-theoretical level and Peschl *et al.* (2021) propose DT as a philosophy that could direct pedagogy on entrepreneurial thinking for the uncertain 21st century with its plethora of open complex problems.

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This paper offers a view into the thinking of 10 professional entrepreneurial designers who share their thinking on open-complex problem-solving on some of their favorite and most challenging projects in Nigeria. The objective of this paper is therefore to reflect on what it is the business discipline (or more specifically entrepreneurial students) can learn from these creatives with specific reference to their ability to deal with Wicked Problems on a conceptual level.

This paper commences with a literature review with special emphasis on Design Thinking as a philosophy for constructivist thinking. The research methodology is then discussed followed by the findings. Discussions of the findings are linked back to literature and conclusions and implications for entrepreneurship education are shared towards the end of the paper.

2. Literature Review

In this literature review it is important to note that there is no dispute about the value of the design thinking process or the principles that underpin the method, yet DT in this paper is not offered as method for innovation, but rather, it is unpacked in terms of its applicability as a philosophy towards solving Wicked Problems. The review applies the DT theory to the context of entrepreneurship and where possible to entrepreneurship education.

2.1 Design Thinking as a philosophy for problem solving

DT is a familiar construct in the business discipline and has been applied to the business context particularly as a methodology to yield innovation as well as solve open complex problems (Glen, Suci & Baughn, 2014). Brown (2009) who is one of the first authors on DT in the business context, refers to DT as a human-centered approach to innovation and he highlights the use of the DT methodology to synthesise people's needs and technology in order to promote business success. DT requires empathy to be applied to the context of a problem, creativity in the generation of solutions so that new insight is gained, and rational thinking to analyse the fit of solutions to the context (Micheli, Wilner, Bhatti, Mura & Beverland, 2019). It is also important to note that DT is future focused (what can be) (Linton & Klinton, 2019), and that it is ultimately a philosophy for change (Buchanan, 2019). Therefore, in summary, the human-centeredness, potential for innovation, thinking that incorporates analysis, synthesis and evaluation of alternative solutions for a particular context, but also the potential to yield changed scenarios of what can be beyond what is, could make DT a suitable philosophy for complex problem solving.

In order to further explore the applicability of DT as a philosophy, its applicability towards solving Wicked Problems is offered as entrepreneurial minds need this skill as much as designers do.

2.1.1 .Thinking for and about Wicked Problems

Designers (and in this paper entrepreneurial minded problem solvers) deal with complex problems all the time (Peschl, *et al.*, 2021). These problems are signified by their uncertain solutions and often referred to as Wicked Problems (Buchanan, 1992; Gero & Milovanovic, 2020). In their seminal work, Rittel and Webber (1973) highlight that every Wicked Problem is unique and does not have a set of approved operations that may be incorporated to present several solutions, rather that the solutions of such a problem is explored as good or bad (as opposed to right or wrong). For this reason the Wicked Problem is also seen as an open and complex by later scholars such as Sarasvathy (2021).

Attempting to solve a Wicked Problems can involve the development of products, services, systems or creation of value that result from a design process (abstract or physical) (Teasdale, Steiner & Roy, 2020). The value of the solutions in terms of good or bad or satisfying or not, is measured against what Helkkula, Kowalkowski and Tronvoll (2018) refer to as design-in-quality. Design-in-quality refers to the non-tangible quality factors of commitment, accessibility and uncomplicatedness of the design that need to be considered in each design phase when value, use and experiences are created (Singh, Akbani & Dhir, 2020). The thinking required in an attempt to solve a Wicked Problem is therefore subjective and requires a deeper interpretation of the design/problem's initial boundaries (beyond what seems initially apparent) and utilize thorough cause and effect analysis towards better or good solutions (Buchanan, 1992; Dell'Era, Magistretti, Cautela, Verganti & Zurlo, 2020). One may

argue that from the design perspective (which involves a strong foundation in aesthetics), that a “good” solution following a DT philosophy therefore implies that it is human-centered (serves the people).

With regard to principles of what constitutes “good design” or in a philosophical sense, design for good, when a Wicked Problem is at stake, Buchanan (2019) offers four principles that he argues overlaps when a systematic approach or DT philosophy is followed to solve complex problems. The first of the four principles is designing **for good** which entails affirming a proper place of human beings in the spiritual and natural order of the world. The second that goes hand in hand with this is to design **for the just** which entails that an equitable and ethical relationship among human beings should be acquired in such an instance as a design outcome. Buchanan (2019) goes on to explain that designing **to meet needs** (meeting physical, psychological and social needs) of people may also be a design outcome and finally designing **the useful** in supporting people to accomplish goals or intentions is another possibility. The context of his contribution on these four principles is to illustrate that Systems Thinking and DT share certain overlaps. Nevertheless, the argument can also be made that in terms of DT and desired outcomes of a design thinking process, these four principles might need to be met to be viewed as good in an attempt to “solve” the Wicked Problems in society. Thinking of the Design in-quality factors mentioned by Helkkula, Kowalkowski and Tronvoll (2018) is thus pivotal in achieving “good design” (which may then also comprise just, useful and meeting needs as design goals).

Similarly, for entrepreneurs as visionaries or pioneers (Asiyah, 2020) or agents of change (Schumpeter, 1934) to attempt solving some of the Wicked Problems in society, they too need the skills to understand how new ideas for products, services, systems or value can be created. What this thinking might entail from a DT perspective is discussed shortly.

2.1.2 Constructivist approach towards solving problems

Constructivism can be defined as a philosophy with the central idea which subscribes to individuals that construct knowledge rather than passively taking it in (Morris, 2019). This implies that individuals are actively involved in constructing their knowledge and making sense of their own worlds. The constructivist approach is therefore subjective and the sense making is a process of synthesising new knowledge to existing knowledge that is shaped by the individual’s experiences (Mesgari & Okoli, 2019; Vaghely & Julien, 2010). The relevance and application in DT is thus logical because, those who apply DT construct knowledge as McCurdy, Nickels and Bush (2020) are of opinion that during DT individuals actively engage with possible solutions to complex problems and experimentation is a part of the process. Learning, is therefore implicit in a constructivist approach to solving problems.

Cronje (2021) defines constructivism in the context of learning and highlights that it is subjective and contrasts objectivism. He illustrates in his early work on constructivism as learning philosophy or paradigm that there are dimensions to this paradigm that offers valuable means for operationalisation. The following table provides these dimensions to put constructivism into perspective:

Table 1: Constructivism as learning

Dimension	Description of constructivism aligned to dimension
Reality is:	is modeled by the way in which we personally construct them
Symbols are:	are products of culture that are used to construct reality
Human thought:	is imaginative, develops out of sensory experiences, perception & social interaction
meaning:	is a construction that results from applying mind

Source: Cronje (2006:390)

From the above table one may deduce that if one were to apply the above to the learning of designers, their design process and construct knowledge and form perceptions to create meaning while applying their imagination, senses as well as socially interact. Designers (or in this study entrepreneurial thinkers) create symbols as products of culture “that are used to construct reality” (Cronje, 2006:390).

This implies that creating symbols or constructing symbolic meaning may in fact be deeper than only creating form and function as is typically referred to as goals of design (Michl, 1995), but the notion of context (frame) is very important when constructivism is applied as a paradigm for learning or problem solving.

Bearing in mind the above, the level of expertise of a designer should not be disregarded when a constructivist paradigm is relevant because the very nature of the subjectivity of the learning and the existing experience of the individual makes this dimension important. Dorst and Reymen’s (2004) framework for the expertise was later revised by Lawson and Dorst (2013). This framework has been validated for other fields and illustrates that as levels of expertise grow to master and visionary level, the person starts thinking beyond their own field (context/frame) as well. The applicability of the framework to entrepreneurs may therefore be a helpful tool in entrepreneurship education as well. The levels of expertise from proficient level and beyond are shortly summarised in the table below to illustrate how engagement and context changes the more experienced a designer becomes:

Designer’s levels of expertise originally compiled by Dorst and Reymen (2004:3) and revised by Lawson and Dorst (2013:32)

Table 2: Levels of expertise

Level of expertise	What this level entails
Proficient	“Immediately sees the most important issues and appropriate plan, then reasons out what to do.”
Expert	“Responds to specific situation intuitively; performs the appropriate action, straightaway. There is no problem solving and reasoning that can be distinguished at this level.”
Master	“A new uneasiness creeps in. The master sees the standard ways of working that experienced professionals use not as natural but as contingent. Displays a deeper involvement into the professional field as a whole, dwelling on success and failures. This attitude requires an acute sense of context, and openness to subtle cues. In his/her own work the master will perform more nuanced appropriate actions than the expert.”
Visionary	“The world discloser or ‘visionary’, consciously strives to extend the domain in which he/she works. The world discloser develops new ways things could be, defines the issues, opens new worlds and creates new domains. To do this a world discloser operates more on the margins of a domain, paying attention to other domains as well, and to variances and marginal practices that hold promises for a new vision of the domain.”

Source: Lawson and Dorst (2013:32)

From the above table it is apparent that the subjective thinking is associated with designers who are at the higher levels of expertise. In other words, the more the expertise grows, the more emerged the designers become in their work and in this regard one could argue that their ability to construct their own knowledge and context seems to become more important the more their expertise grows. At visionary level, for example an individual extends domains/contexts that he/she usually works in. Similarly these levels can be related to entrepreneurial expertise.

From the literature review it is thus evident that for solving Wicked Problems, an entrepreneurial thinker who applies a DT philosophy might be a constructivist and that this person’s level of expertise in a field/domain might influence their ability to construct knowledge beyond that particular context/field/domain (or not). What one can learn from the design professionals may guide how one should engage with Wicked Problems as an entrepreneur.

3. Research Methodology

3.1 Research paradigm

An interpretivist research paradigm was applied in this study as an interpretivist paradigm enabled the researcher to gain deep insights based on a specific context. In this regard Alharahsheh and Pius (2020)

are of opinion that an interpretivist paradigm allows the researcher to embrace the individual's experience as a whole instead of only considering certain parts of it. In this study the researcher was interested in the experiences of the entrepreneurial-designers (particularly their problem solving and thinking about it) as they presented it.

3.2 Research Design and Sampling

The research design is a case study research design containing 10 documented cases in Lagos. The cases contained a homogeneous sample of entrepreneurial designers in Lagos (Nigeria). According to Creswell (2012) multiple cases that are homogeneous with a similar context and can be labelled as a collective case study. Ten entrepreneurial designers with architecture or adjacent skills were selected for this paper documented in a Netflix documentary-series²: "Made by Design". The 10 entrepreneurial designers were purposefully selected out of the 13 designers who were screened on the show. It was apparent that the producers of the show selected the designers from Lagos and all of the designers seemed to have played an important inspirational role in the country in terms of creating jobs for others or illustrating how their creative thinking could enhance the country. This rationale for selection of the 13 designers was disclosed in a magazine article about the show and was not in the control of the researcher of this particular study. However, in this study, the designers who had a business venture or own practice or even a partnerships in a firm were selected because it was argued that their entrepreneurial skills beyond their design skills were also important for the entrepreneurial part of this study. Each entrepreneurial-designer was interviewed and the semi-structured interview questions could be deduced from the series because similar questions were posed and written on screen to every designer.

3.3 Research Method

The series documents interviews with 13 designers. Each episode features a qualitative interview with one designer and there are visuals of the work of each designers in every episode. A main theme is then given to each episode capturing the particular designer's unique story. For this paper, only the 10 entrepreneurial designers who applied their design thinking to their own businesses as well as to their designs were selected.

The interviews were edited to become episodes of between 21 and 28 minutes long with questions in all interviews that involved the entrepreneurial-designer's:

- 1) Upbringing, education and professional journey
- 2) Design style and inspiration including mentors
- 3) Design philosophy (probing on how it links to personal life philosophy and problem solving)
- 4) Favorite projects (probing on most challenging projects or projects that were most memorable)
- 5) A typical day in their lives

A website that reported on the series was also found to correlate some of the verbatim quotes from interviews with some of the designers when the designers were asked to give an opinion about the value of the series. These quotes were also incorporated into his paper where it added value (indicted with * in Table 3 and in Table 4).

Using film as a medium for research is not traditionally associated with management sciences, yet it is often used in the Art and Design disciplines. The research method is interviews and the visual material illustrated during interviews was used to confirm what was said (this can be compared to simple observation). The research method and the medium were deemed appropriate for this paper for two main reasons:

- 1) The research topic is interdisciplinary (design and entrepreneurship) with its implications in entrepreneurship education. The medium allowed for interdisciplinary nuances yet drew from methods that are often applied in the management sciences.

² The series was aired from 26 December 2021. This didactic documentary-series was produced by Titi Ogufure.

- 2) A post-pandemic teaching environment calls for hybrid methods of teaching and learning. Using relevant and rich content available in the online public domain for students has proven to be useful over the past two years and enhances student's skills to reflect. This documentary-series was explored as a teaching tool as well as a data set.

3.4 Data analysis and ensuring the trustworthiness of the conclusions

The researcher did not have input into compiling the questions for the interviews and this may be seen as a limitation of the study. The researcher therefore watched the series as a member of public but ended up watching the series three times to evaluate the value of the series for educational purposes and its validity as data for research purposes.

The first time that the series was watched, it was simply for relevance of content and to judge the quality of the cases in relation to the central story line that was already provided by the directors of the show. The second time, the content of interviews with the designers in each programme were analysed (with sub-titles as well) and this is when the 10 cases with entrepreneurial designers were identified. After the second viewing of the series, certain patterns and themes could be identified and literature checks were done to identify the theoretical underpinning of the content that emerged from all the selected episodes. Upon the third viewing, the researcher took more time to do a deeper analysis of each case/episode after a preliminary conceptual framework was identified from the literature to validate and refine this framework.

The data analysis process is qualitative in nature and subjective, however to avoid bias, another researcher from an Arts and Design Faculty was also asked to do a thematic content analysis so that notes could be compared throughout the data analysis process. The peer and literature checks are practices that enhance trustworthiness of data analysis and the conclusions (Henry, 2015). Although each episode was analysed in detail, this paper reports on only two overarching themes relevant in all the selected episodes that may have relevance to entrepreneurial students.

4. Findings and Discussions

The most of the entrepreneurial designers display a strong architecture background or skills adjacent to architecture and another thing that all the designers shared was that they all had international exposure in some part of their training. Most of them had some European exposure and this exposure seems to make them all aware of their own context.

4.1 Theme 1: Applying higher level of expertise to create opportunities

There is an overwhelming sense of expert level of each entrepreneurial-designer that enables them to create new opportunities with new product lines or to solve problems in new domains that extend their primary fields of expertise. The following evidence illustrates that the designers in this study are on master or visionary level. Those on master level show potential to get to visionary level and strive to get there.

Table 3: Levels of Expertise of Entrepreneurial designers (self-compiled)

Episode Business case (Entrepreneurial – designer's name)	Level of expertise of the entrepreneurial- designer (Training)	Specific indicators that illustrate level	Verbatim as evidence to illustrate the level	Opportunities created
Lady carpenter Majeurs Chesterfield (Demi Samande)	Master level (Architecture)	a deeper involvement into the professional field acute sense of context	* <i>"We are finding our voice and stripping away the replicas we created of the West. Africa's growth and authenticity lie in designing with the agency to solve African problems whilst being globally inspiring"</i>	Businesses, guidance to young people on You Tube, manufacturing and training in furniture restoration on an

				international level
Beach house queen CM Designs Atelier (Tosin Oshinowo)	Master level (Architecture)	deeper involvement into the professional field acute sense of context	<p>“I embody my architecture in my lifestyle” “because we are able to control entire process we are able to fully curate the entire experience”</p> <p>“Being a designer, an architect is thinking about the experience. It is not just about creating buildings or rooms.”</p>	New businesses linking to her existing practice and exports furniture. Incorporates fabric that is local in furniture
Conservator Studio-Lani (Lani Adeoye)	Visionary level (Information system design)	<p>Extend the domain in which she works.</p> <p>The world discloser develops new ways things could be, defines the issues, opens new worlds and creates new domains.</p>	<p>“I break the silo’s between art, design and craft...There is a direct relation between design and wellbeing”</p> <p><i>*“I think it’s great to be able to tell our stories and share the diversities of our culture through a contemporary lens. It is important to dispel the myths of a singular language connected to African design”</i></p>	Interior product development and opportunities for artists to collaborate
Mastermind Theo Lawson Architecture (Theo Lawson)	Master – Visionary level (Architecture)	<p>Extend the domain in which he works.</p> <p>deeper involvement into the professional field</p>	My work embodies all the things I like. My realization of my love for history, love for green spaces ”	Incorporates Art in Architecture thus creates opportunities for many artists but also for researchers due to historical content of projects
The Pioneer IO Furniture (Muni Shonibare)	Visionary level	Extend the domain in which she works	“ I am eclectic ”	Design and manufacturing
Radical Architect SO Architects (Seun Oduwole)	Visionary level (Architecture)	<p>Extend the domain in which he works</p> <p>opens new worlds and creates new domains.</p>	<p>“I am intentional, for me it is about responsibility: environmental, social”</p> <p>“When people say ‘you cannot do that, I think, watch me’. That speaks to our philosophy”</p>	Various collaborations with others in construction and technical experts and product developers
The Curator iDesign Art	Master level (Industrial design)	deeper involvement	“... gratitude puts all things into perspective”	Interior Architecture

Interior Architects (Tola Akerele)	Later interior design)	into professional field		Co-founder of Bogobiri house (hotel) Cookbook published as well
(Art)chitect MOE+ Architecture (Papa Omotayo)	Visionary level (Architecture)	opens new worlds and creates new domains	“Our work is transdisciplinary between art and architecture and everything in-between ” “I keep wanting to lock in words: Aesthetic, design process or design language”	Architect and founder of Whitespace Creative Agency for digital creatives and others to experiment
Boss lady James Cubitt Interiors (Intrapreneurial venture) (Jackie Aki)	Master level (Drafts person)	new uneasiness creeps in	There is Strive for excellence but also for Nigeria (beyond self also for quality production and technical ability of local people)	Own interior value chain up to manufacturing training
Quirky creative CC Interiors (Osara Alile)	Master level (Several design courses as well as interior design)	deeper involvement into professional field	“ I sprinkle happiness everywhere I go .Anyone who goes through this space, how do I want them to feel? ”	Product development for example: Greeting card range and other local interior products

**Quotes from: <https://www.wallpaper.com/design/netflix-made-by-design-african-design-documentary>*

From the above evidence it is apparent that all the entrepreneurial designers are beyond an expert level and that they are able to either create opportunity with new product lines by being deeply involved with their fields, having an acute sense of context or extend their context and start dabbling in other fields as well. This designerly ways of grappling with the Wicked Problems they deal with (all have unclear project briefs to fulfill), also manifest in how they are able to create opportunities for others in the business world. In this regard one sees an ability of these designers to systemically integrate their solutions for problems as Buchanan (1992) refers to as problem placement that encompasses construction, symbolism (making meaning) as well as communication. All of these designers (even those who are still moving towards a visionary level), are able to create opportunities for others and are therefore seen as entrepreneurial.

Theme 2: Philosophy that informs how entrepreneurial designers deal with Wicked Problems

Each entrepreneurial-designer has a certain philosophy that they incorporate in their designs and life decisions. Excerpts of these philosophies gives insight into what these entrepreneurial designers design for.

Table 4: The design philosophy and problems addressed of the entrepreneurial designers

Episode name	Typical Problem addressed (summarized via a vignette)	Philosophy to illustrate the problem addressed	Design for...
Lady carpenter	Furniture restoration and manufacture on level of excellence to the extent that Price Charles is a client. Yet she trains others in her country manufacturing and restoration to enhance local economy. Involved in building youth young entrepreneurs	<i>“As we develop confidence with this resolve, innovation within our authenticity is inevitable. I want my work to be a catalyst in showing Africans what is possible. To demonstrate in every piece of furniture, we make sure that we have the talent in Africa to build Africa”</i>	just and good
Beach house queen	Expert in terms of creating an experience for clients with beach – home designs from the house to the interior. The furniture business is to create uniquely modern and culturally fused products to compliment the spaces and enhance experiences. Local jobs are created as a result.	“Architecture should be celebrated as a lifestyle... It is about creating an experience: what aura do you create? What senses does it involve?” <i>“...it is very important for the younger generation to be inspired by imitation, the fact that young Africans can see fellow Africans doing trailblazing work in the design industry is really the representative shift we need”</i>	good and just
Conservator	Art, craft and architecture are not in silos and are used to compliment each other. The community is pulled into each project: the weaving crafters, metal artists, painters, stool makers, hair braiders all contribute to a vision.	“...to be in harmony with self and others. This idea of duality is also in my work: From corporate to creative, heritage and culture to innovation; constantly thinking of marrying the two creates tension. But in the work I do, I try to merge and find harmony between seemingly different worlds”	good
Mastermind	Mostly designs public spaces and fuses a place’s history with green design. He is the designer of Freedom Park for example that used to be a prison and symbolic of pain, yet turned this into a public space that is enjoyed and celebrated with stories and art.	“Architecture uses folklore and traditional beliefs to tell stories, it is not just brick and mortar”	good and just

The Pioneer	Due to a strong background in industrial design, she sees the connection between textile graphics, arts, crafts in interiors. She believes it is the responsibility of designers to encourage cultural nuances and create opportunity.	“I marry my western exposure and African exposure and reframe that. They all work beautifully together”	good
Radical Architect	Designs buildings that are radically different, yet promotes interaction and conversation. He does what has not been done. Sometimes this entails renovation/restoration other times to build something unconventional. But it is always a conversation piece that reminds others what can be done in Africa by Africans.	“We have the task of shaping the cities...people interact here.” “Every project is an intervention, an opportunity to make something...people can respond to, that inspires, that helps the quality of life, that creates backdrops to memories”	good and just
Curator	Afro-modern design interiors were western and African are fused to create experience. Every area is seen as something that must “work well”. This relates to something beyond function and aesthetics but must enhance experience with something different”	“Art is important and part of our design philosophy. Or philosophy is based on natural beauty. I have an attitude of gratitude and it puts all things into perspective”	good
(Art)chitect	For this architect, it is about engaging the public and thinking about visual identity. He works on public spaces but uses art to communicate and enhances simplicity with various mediums. His work is honest and captures what comes naturally to people using the space. Design becomes a language beyond aesthetic that captures the identity of	“Design is a language, an aesthetic, design is truly trying to represent what you want to represent. We push the envelope a bit...try to do things differently”. “Real inspiration is participation”	good and just

	people.		
Boss lady	She started an intrapreneurial interior venture with her architect partner. She creates better spaces for people. Better in terms of experiences. She has a greater purpose of improving Nigerian production as well.	“I visualize a better version of myself and project what it is I want to have achieved, I hold onto that vision and look up to that”	good
Quirky creative	This interior designer creates experiences for all types of clients and teaches her clients what they actually want. She came back to Nigeria from UK to make a difference and train people in her industry.	“I am the pilot of happiness. Everyone deserves to live in a happy place, regardless of income...” This happiness relates to experiences that need to be created for and by people.	good

Quotes from: <https://www.wallpaper.com/design/netflix-made-by-design-african-design-documentary>

From the above table there is an overwhelming sense of designing for “good” and for “just”. The designers are dealing with Wicked Problems and see their profession as an opportunity to create not only artefacts, product and experiences but beyond their context, they create opportunity and have a sense of responsibility to others to innovate what seems to be inspiration or “what can be”. Even those on a master level of expertise are moving towards visionary level and in this regard perhaps the “Radical Architect” says it best: *“Every project is an intervention, an opportunity to make something...people can respond to, that inspires, that helps the quality of life, that creates backdrops to memories”*

This notion of a social responsibility to others be it during the process of design or business start-up, the end result or the way that the voices of others are incorporated whilst grappling with solutions to Wicked Problems seems to enable powerful solutions that fit Buchanan’s (2019) definitions of what is “designing for good” (affirming a proper place of human beings in the world) and “just” (an equitable and ethical relationship among human beings should be acquired).

5. Conclusion and implications

Aesthetics in design is about stimulating senses, creating symbolic meaning and evoking emotion (Desmet & Hekkert, 2007). These aesthetics link the typical criteria that designers need to consider: form follows function (Michl, 1995). However the entrepreneurial designers in the documentary-series allude to something beyond form and function due to their level of expertise as identified by the model of Lawson and Dorst (2013). It is apparent from the findings that awareness of context is important when complex problems are engaged with. Each of the entrepreneurial designers has a design philosophy that enables them to think and construct solutions for people (beyond only their clients). Thinking outside and beyond the frame can perhaps be equated in entrepreneurship to thinking out of the box which Akyıldız and Çelik (2020) link to creativity. Bearing this in mind, this implies from the findings in this study, that creativity is also linked with a strong sense or awareness of one’s own philosophy and this seems to enable the thinking of problems on a meta-theoretical level (for example: What is good? and/or What is just?). This Form, Function and Frame awareness is a visionary approach toward solving Wicked Problems and may be applied in various fields where entrepreneurs have to be innovative.

Constructivist in this study, also seems to go beyond designing or creating the useful and to satisfy needs only. Instead, constructionist from this visionary perspective is done “for good” and “for the just”. This implies that problems are engaged with in a new way and systemically integrates communities, cultures and, human values. The “design for good and just” is an interdisciplinary notion and may also be related to sustainability development goals. This implies that a deeper understanding of the openness of problems and the mere notion of moving problems forward beyond their immediate context, may eventually enable sustainable solutions in the long term that also involves communities as opposed to individuals.

For entrepreneurship education, the philosophy of DT then may imply that students are challenged to engage with Wicked Problems in terms of designing for good or good design that includes the notions of just, useful and satisfying needs. This philosophical angle that can be introduced to students beyond a method towards innovation and may enhance the awareness of context, self and others within and out of that direct context. Moving beyond one’s own context may also enhance one’s ability to view problems from different perspectives, which offers alternative points of engagement. Such alternative points of engagement has the potential to enhance creativity. This is the advantage if the inter- or transdisciplinary learning and can be offered through project-based teaching. It is acknowledged that visionary constructivism as proposed in this paper is a very high level skill and unrealistic to expect entrepreneurial students to master at undergraduate level, yet the “construction blocks” towards such skills need to be noted and project based learning with interdisciplinary scope for the philosophy of DT need to be incorporated on undergraduate level at least. Perhaps entrepreneurial students similar to the designers of change in this data set, are able to strive to take control and narrate futures that is “for the good” and “for the just”.

The limitations of this paper is that it only offers the philosophical views of designers who have architecture or adjacent skills. Although many of the designers in this study do not limit the application of their skills to architecture, further studies can be done to understand the various thinking styles of other types of entrepreneurial designers (including those in fashion, industrial, and graphic design) in an attempt to profile various design thinking styles. In this way the true value of DT can be shared with educators in business fields beyond yielding innovative products and services only. Furthermore, studies on the value of DT in project based learning aimed to address the sustainability goals of the United Nations can be done to understand the complexity of engaging with the Wicked Problems that affect the future in specific contexts like Africa. The philosophical thinking of future entrepreneurs or intrapreneurs may enable visionary constructivism that is needed to overcome the challenges of the future in a way that considers form, function and frame (context).

To end this paper, the sentiments of an entrepreneurial designer on the show is therefore shared as is also relevant when entrepreneurs become philosophical design thinkers, and use their talent to direct a good narrative beyond what others may perceive as boundaries:

“We...need to celebrate our rich cultural heritage and appreciate the global influence it has, and make a conscious and concerted effort to take charge and direct the narrative.”

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An Instrument For Measuring The Relationship Between Corporate Entrepreneurship And The Success Of Automotive Organisations

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Keywords

Automotive, Business Success Model, Corporate Entrepreneurship, Entrepreneurial Orientation, Organisational Antecedents, Organisational Success Factors, Structural Equation Modeling, Sub-Sahara Africa

Abstract

The exploratory study developed an empirical measurement instrument using constructs from organisational antecedents, entrepreneurial orientation, corporate entrepreneurship, and organisational success factors. Organisational antecedents (top management support, autonomy or work discretion, rewards or reinforcement, time availability and organisational boundaries) were used as independent variables, entrepreneurial orientation and corporate entrepreneurship as mediating variables and organisational success factors as dependent variables in the measurement instrument.

The investigation gathered 429 responses from Sub-Sahara Africa, which were vigorously exposed to exploratory factor analysis and confirmatory factor analysis to confirm the construct validity and reliability before conducting structural equation modelling (SEM). SEM was conducted to test the study's hypothesis and produce a framework proposed for this study.

The discoveries of the investigation demonstrated that the measurement instrument was psychometrically firm with acceptable construct validity and reliability. The measurement instrument produced the proposed framework of the study, which produced evidence of the relationship between corporate entrepreneurship and the success of organisations. By and large, findings drawn from the study suggested that top management support, rewards or reinforcement and organisational boundaries were positively related to entrepreneurial orientation, and entrepreneurial orientation was positively related to corporate entrepreneurship. As a result, corporate entrepreneurship activities were also found to be good indicators of the success of organisations. Additionally, new results that were not hypothesised by the study showed that rewards or reinforcement and entrepreneurial orientation were partially directly related to the success factors.

1. Introduction

The contemporary business environment is continuously characterised by turbulent and uncertain environments that are constantly mutating, thereby creating complexities in strategy and operations management (Van Wyk & Adonisi, 2012:65). Several organisations operate in globalised, dynamic and rapidly changing environments branded by aggressive competition, ever-increasing expectations and demands from various stakeholders (Albuhisi & Abdallah, 2018:1360).

Entrepreneurial actions propel organisations to continuously focus on ring-fencing their growth, survival, and global competitiveness (Kuratko, 2011:9). Therefore, such kind of pressure is now demanding organisations to resort to a myriad of strategies to stay in business, such as concentrating on core business, outsourcing, downsizing, restructuring, decentralising and, in general, endeavouring to reinvent themselves (Morris, Kuratko, & Covin, 2011:25; Shimizu, 2012:194).

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Turbulent conditions have mainly been the result of an assortment of external and internal variables of the business environment, such as technological changes, global challenges, pandemics, heightened competitive intensity, internal inflexibility, bureaucratic structures, demographics, customer taste and demands (Ireland & Webb, 2009:473; Shimizu, 2012:194; Donthu & Gustafsson, 2020:284). The changes experienced by organisations have consistently caused dramatic changes in how consumers behave and how businesses should act in line with the changes in consumer behaviours (Donthu & Gustafsson, 2020:284). Organisations need to be continuously innovative and think outside the box, which is now becoming a requirement for business.

2. Problem Statement and Objective

Although corporate entrepreneurship has gradually permeated several organisations, there is no measurement instrument or tool for measuring the relationship between corporate entrepreneurship and the success of organisations. The problem identified in this study was that not only automotive organisations, but several organisations face the challenge of not easily grasping the relationship between corporate entrepreneurship and the success of their organisations.

No integrated study has been conducted thus far to better understand the chemistry between corporate entrepreneurship and organisational success factors (Kungeke & Van der Merwe, 2020:17).

Developing an instrument measuring corporate entrepreneurship and business success can help organisations understand the relationship between corporate entrepreneurship and the success of organisations. This could assist business leaders in determining the elements or variables that can suggest which strategy or direction to pursue (Shimizu, 2012:194).

In this respect, there has been no clear-cut research that focused on linking corporate entrepreneurship to organisational success factors such as financial wealth, customer satisfaction, efficient internal business processes and continuous improvement through learning and growth. Furthermore, amplified by the Coronavirus disease of 2019 (COVID-19), it has become necessary for an organisation to have a clear image of the relationship between corporate entrepreneurship and the success of their organisations.

Therefore, the study's primary objective was to develop an instrument that measures the relationship between corporate entrepreneurship and organisational success.

3. Operationalisation of Variables

3.1 Corporate entrepreneurship

According to Kuratko (2017:2), corporate entrepreneurship is a term used to explain entrepreneurial behaviours within small, medium, and large organisations. It is now considered a major strategy of many organisations.

Research on corporate entrepreneurship has also realised the importance of internal organisational dimensions to promote and support innovative environments (Kuratko *et al.*, 2014:37).

Organisations that have embraced corporate entrepreneurship as part of their strategy are now viewed as firms that are dynamic, flexible, and ready to take on new opportunities that appear on the horizon (Kuratko, 2017:3).

3.2 Organisational antecedents

The five organisational antecedents that are important determinants of an environment favourable to entrepreneurial behaviours are top management support, work discretion or autonomy, rewards or reinforcement, time availability and organisational boundaries (Kuratko *et al.*, 2014:37).

3.2.1 Top management support

Top management support (leadership) is fundamental in an organisation's management and operations and is essential in corporate entrepreneurship (Kuratko *et al.*, 2014:39). The objective of top

management support is to organise staff, roles and functions in a fashion that enhances entrepreneurial actions (Bhardwaj & Momaya, 2011:188).

Research has shown that top management support positively correlates with innovative results (Kuratko *et al.*, 2014:39). The more supportive top management is, the more innovative employees will be. Hence, top management support is one of the organisational antecedents instrumental in promoting corporate entrepreneurship, and the following hypothesis (H₁₋₁) was proposed: Top management support is positively related to entrepreneurial orientation.

3.2.2 Work discretion or autonomy

Work discretion or autonomy is a factor that is directly impacted by top management support. According to Kuratko *et al.* (2014:39), work discretion or autonomy is the degree to which employees perceive that the firm tolerates failure, provides decision-making latitude, the freedom from excessive oversight, and delegates authority and responsibility to lower-level managers and employees. The following hypothesis (H₁₋₂) was proposed: Work discretion or autonomy is positively related to entrepreneurial orientation.

3.2.3 Rewards or reinforcement

Rewards or reinforcement is the degree to which employees perceive how the organisation uses methods that reward based on entrepreneurial activities and success (Kuratko *et al.*, 2014:39). The rewards system is a critical success factor for stimulating entrepreneurial behaviours (Bhardwaj & Momaya, 2011:190).

Examples of entrepreneurial incentives are recognition systems and rewards, bonuses, promotions, salary increases, company benefits, equity, and equivalents (Bhardwaj & Momaya, 2011:190). Employees who feel correctly rewarded and have enough resources to do their jobs are highly committed. The following hypothesis (H₁₋₃) was proposed: Rewards or reinforcement are positively related to entrepreneurial orientation.

3.2.4 Time availability

Time availability is the degree to which employee's perception of workload schedule ensures extra time for employees to pursue creativity and innovation (Kuratko *et al.*, 2014:39).

Top management that provides unstructured or free time to employees can encourage corporate innovators to identify opportunities during their unstructured time (Kuratko *et al.*, 2014:39). The unstructured or free time provided to employees is an essential resource for generating entrepreneurial creativities (Kuratko *et al.*, 2014:39).

The unstructured time given to employees can help employees introduce new ideas to the organisation. Hypothesis H₁₋₄ was proposed: Time availability is positively related to entrepreneurial orientation.

3.2.5 Organisation boundaries

According to Kuratko *et al.* (2014:39), organisational boundaries are the degree to which employees perceive their flexible organisational boundaries that are useful in encouraging entrepreneurial actions because they enhance the flow of information between the external and internal environments of the organisation. Furthermore, the flow of information can be extended to divisions within the organisation and between departments to reduce silo structures (Kuratko *et al.*, 2014:39). Organisational boundaries can enhance entrepreneurial activities in an organisation and the hypothesis H₁₋₅ was proposed:

H₁₋₅: Organisational boundaries are positively related to entrepreneurial orientation.

3.3 Entrepreneurial orientation

Entrepreneurial orientation germinated within the field of entrepreneurship and is strongly considered an aspect of corporate entrepreneurship (Covin & Lumpkin, 2011:855; Kungeke & Van der Merwe, 2016:2; Mungule & Van Vuuren, 2016:3).

Entrepreneurial orientation is regarded as principles that influence business approaches and create exploitative behaviours toward business opportunities to gain and sustain competitive advantage and longevity (Kasim & Altinay, 2016:62).

The five dimensions of entrepreneurial orientation are innovativeness, proactiveness, risk-taking, autonomy and competitive aggressiveness. They work together to improve organisational entrepreneurial behaviour (Kungeke & Van der Merwe, 2016:42).

Thus, hypothesis H₂ proposed that entrepreneurial orientation positively relates to corporate entrepreneurship.

3.4 Organisational success factors

The organisational success factor strategy is a way to classify important information that is needed to be monitored closely and applied exceptionally well by organisational leaders for organisations to be successful (Marais *et al.*, 2017:2).

Organisational success factors in this study were derived from the Balanced Scorecard, a modern business performance measurement tool that can continually evaluate the performance of business processes for both quantitative and qualitative results (Dobrovic *et al.*, 2018:41).

The Balanced Scorecard helps not only to understand the financial soundness but also to evaluate non-financial aspects which are essential for achieving maximum competitiveness of an organisation (Dobrovic *et al.*, 2018:41).

The four perspectives of the Balanced Scorecard, i.e., finance, customer, internal business processes, and learning and growth, were used as success factors determinants (Hamdy, 2018:424).

3.4.1 Finance perspective

The finance perspective is one of the most important measures of the Balanced Scorecard, specifically for firms that are in business to make profits (Niven, 2014:7). It measures the economic effect of priorities chosen by the organisation, decisions made, plans executed, and actions taken by managers (Aswani *et al.*, 2016:1587). The financial perspective is one of the success factors derived from the Balanced Scorecard, and hypothesis H₃₋₁ was proposed: Corporate entrepreneurship will have a causal effect on the financial growth of an organisation.

3.4.2 Customer perspective

The customer perspective is an important aspect of the Balanced Scorecard that captures the ability of an organisation to provide quality goods and service, effective service delivery and customer satisfaction (Hamdy, 2018:425). It is measured through the pre-set organisation objective, i.e., lead time to serve a customer, quality of service or product, performance, and costs (Aswani *et al.*, 2016:1587). The customer perspective is concerned with customer value add, which is achieved through creativity, innovation, and high-quality service (Aswani *et al.*, 2016:1587). Customer perspective is a success factor derived from the Balanced Scorecard, and the hypothesis H₃₋₂ was proposed: Corporate entrepreneurship will have a causal effect on customer perceptions of an organisation.

3.4.3 Internal business process

The internal business process perspective reflects the importance of identifying and analysing the important processes correlated to efficiency and productivity within an organisation's short- and long-term strategic plans (Oliveira *et al.*, 2018:2591). According to Hamdy (2018:426), the internal business process affords firms with resources for achieving customer performance expectations. The internal business process perspective focuses on value chain activities to design, sell, and deliver products and services (Niven, 2014:118).

Hypothesis H₃₋₃, was proposed: Corporate entrepreneurship will have a causal effect on the internal business process.

3.4.4 Learning and growth perspective

The learning and growth perspective is the root and supplier of enablers, intangible in nature to the other perspectives of the Balanced Scorecard (Niven, 2014:6). The learning and growth perspective focus on identifying measures that link to the long-term growth of organisations (Aswani *et al.*, 2016:1587). People are key drivers of any organisation’s strategy implementation. The success of any organisation’s strategy relies on the capacity of its human capital in terms of new skills, competency acquisition and morale (Aswani *et al.*, 2016:1587). Hypothesis H₃₋₄ was proposed: Corporate entrepreneurship will have a causal effect on the learning and growth of employees in an organisation.

4. Conceptual Framework

The conceptual frame was developed on organisational antecedents by Kuratko *et al.* (1990) and organisational success factors developed by Kaplan and Norton (Harvard Business Review, 1992). The two aspects are commonly used in the day-to-day running of organisations, but surprisingly enough, there are no systematic and scientific approaches to apply these principles so that they can both improve entrepreneurial activities and the success of organisations.

Fundamentally, this study hypothesised that a good mixture of organisational antecedents could create entrepreneurial orientation, resulting in corporate entrepreneurship. Eventually, corporate entrepreneurship would yield positive financial results, customer satisfaction and retention, improved internal business processes and learning and growth for employees’ skill development and satisfaction as shown in Figure 1 below. The five organisational antecedents have a covariance relationship (Morris *et al.*, 2011:51). They all can create a favourable entrepreneurial environment which can develop an entrepreneurial orientation environment.

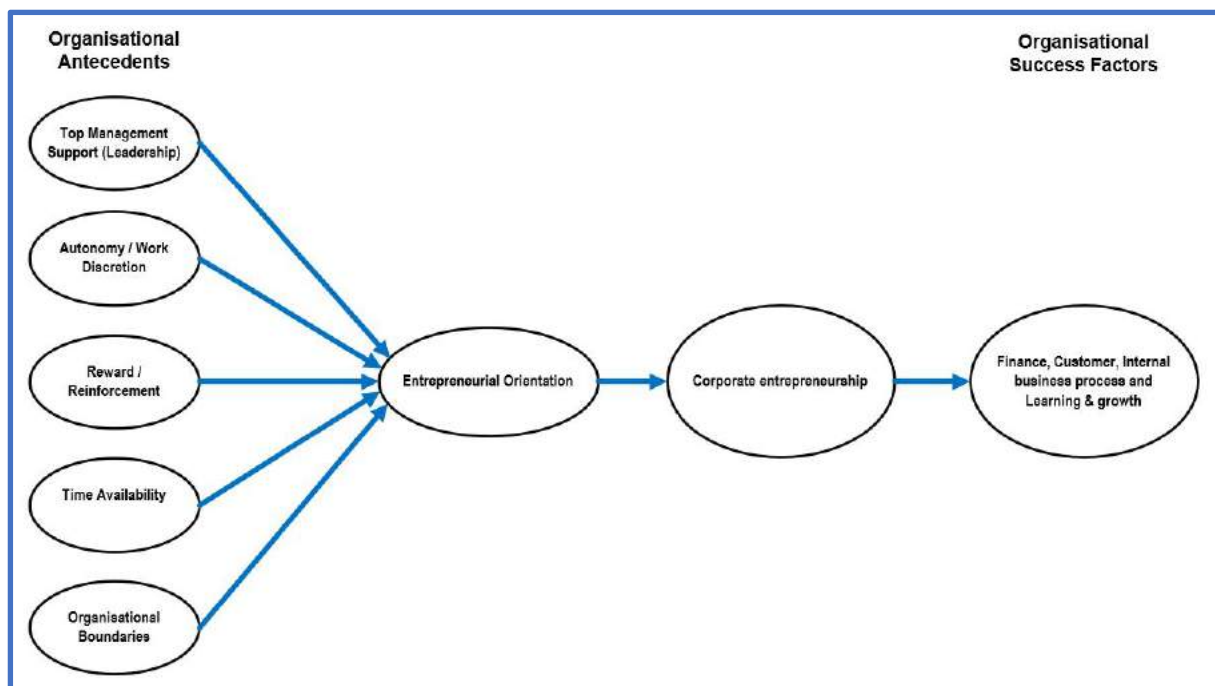


Figure 1: Hypothesised model for measuring organisational success factors

5. Research Methodology

5.1 Measurement instrument development

The study measurement instrument was developed in four parts: the organisational antecedents, entrepreneurial orientation, corporate entrepreneurship, and the organisational success factors, as shown in Figure 1 above. Organisational antecedents’ questions were derived from several previous

scholars who used similar questions in the process of refining the research on the corporate entrepreneurship topic, e.g. (Adonisi, 2003; Brizek, 2003; Hornsby *et al.*, 2013; Kuratko *et al.*, 1990; Kuratko *et al.*, 2014; Mungule, 2015 and Van Wyk & Adonisi, 2012). The questionnaire was largely based on the Corporate Entrepreneurship Assessment Instrument (CEAI) (Kuratko *et al.*, 2014).

Entrepreneurial orientation questions were drawn from numerous scholars who used similar questions in the process of identifying the relationship between entrepreneurial orientation and the performance of organisations, e.g. (Kungeke and Van der Merwe, 2016; Lotz and Van der Merwe, 2013a; Lotz, 2009; Covin and Slevin, 1989). Entrepreneurial orientation dimension items were primarily compiled based on the study of Van der Merwe and Malan (2013), adopted from the work of Lumpkin and Dess (2001:442).

Corporate entrepreneurship questions were drawn from the work of Covin and Miles (1999) and Morris *et al.* (2011). The questions were based on one alternative corporate entrepreneurship, strategic entrepreneurship (Morris *et al.*, 2011:97).

Success factors questions were derived from various scholarly works that researched organisational success factors, the Balanced Scorecard, organisational performance, and new questions developed by the researcher for this study (Kungeke & Van der Merwe, 2020:434). Previous work was derived from Matsuno *et al.* (2002); Van der Merwe and Oosthuizen (2011); Kumar *et al.* (2015); Valmohammadi and Servati (2011); Aswani *et al.* (2016); Singh and Arora (2018); Dobrovic *et al.* (2018) and Albuhihi and Abdallah (2018).

5.2 The study population

The study population was drawn from selected automotive organisations from Sub-Saharan Africa. The sampling frame focused on automotive organisations that have been in existence for 15 years or more (Krishnaswami & Statyaprasad, 2010:51; Taylor, 2018:94). The sample was comprised of employees from Toyota Tsusho Africa (TTAF), Subaru Southern Africa, Toyota Malawi, Toyota Kenya, Toyota Zambia, and Toyota Zimbabwe.

A stratified random technique was used to ensure that the sample obtained was representative of the population from which it was drawn (Taylor, 2018:96). The research was cross-sectional, which surveyed all employees from the selected organisation of all ages, races, and levels of employment (Saunders & Lewis, 2012:123). The estimated sample population was 1434 employees from all participating organisations.

5.3 Data collection

Primary data was collected using a questionnaire developed to nest responses that would address the research questions and objectives. The study was focused on investigating automotive organisations in the Sub-Saharan Africa region.

5.4 Questionnaire

The questionnaire was developed using the concept of a 5-point Likert scale (Taylor, 2018:65). According to Taylor (2018:65), the Likert scale is a special response format used for a research questionnaire to capture responses from respondents at the ordinal level of measurement. The results can be analysed using nonparametric, chi-square tests of association, or correlation coefficients. The Likert scale contained five ordinal values; (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree and (5) strongly agree (Taylor, 2018:66). The questionnaire had 86 questions (78 questions from Section A, B, C and D, eight questions from Section E) (Kungeke & Van der Merwe, 2020:434).

5.5 Data processing and analysis tools

The statistical package for social sciences (SPSS) was used to analyse descriptive data, and analysis of moment structures (AMOS) was used to conduct SEM analysis (IBM, 2017; IBM, 2019). AMOS

helps to easily use SEM to test hypotheses on complex variable relationships and acquire insights into data (IBM, 2019; Khine *et al.*, 2013:4).

AMOS is an SEM software that helps researchers to support their theories by extending multivariate analysis methods such as regression, correlation and analysis of variance (IBM, 2019; Khine *et al.*, 2013:4).

Using AMOS, researchers can construct attitudinal and behavioural models that reflect complex relationships more accurately than standard multivariate statistical tools (IBM, 2019).

Exploratory factor analysis and confirmatory factor analysis were used to assess the construct validity, and the Cronbach Alpha test was used to determine reliability. Validity is the capability of an instrument to measure what it is supposed to measure for a latent construct (Awang, 2015:55). The main objective of confirmatory factor analysis and exploratory factor analysis was to ensure that the measurement instrument is accurate (Khine *et al.*, 2013:85; Hair *et al.*, 2010:709). While reliability ensures that the observed variables are reliable and contain few errors so that the latent variables can be correctly represented (Khine *et al.*, 2013:6)

5.5.1 Exploratory factor analysis

The key focus areas for this study on exploratory factor analysis were Kaiser-Meyer-Olkin (KMO) and Bartlett's test, communalities tests, total variance explanation, the pattern matrix and reliability tests. The KMO and Bartlett's test is the initial step used to perform a factor analysis because it can evaluate the data for factor analysis with a satisfactory sampling adequacy greater than 0.5 for a satisfactory analysis to proceed, although values greater than 0.6 are preferred (Khine *et al.*, 2013:153). The recommended *p*-value that is considered statistically significant must be less than 0.05 (Khine *et al.*, 2013:13). *P*-values of less than 0.001 show that the correlations' patterns are compact in that factor analysis should produce reliable factors (Lotz & Van der Merwe, 2013b:199).

5.5.2 Confirmatory factor analysis

Confirmatory factor analysis measures causality relations among determining factors for a particular study (Khine *et al.*, 2013:152). Therefore, confirmatory factor analysis is used to determine whether the construct structured by the researcher is consistent, suitable and divulges causality relationships (Khine *et al.*, 2013:152). The investigation was utilised to ascertain whether the hypothesised model provided a good fit to the data by indicating if a relationship existed between the observed variables and the latent variables using the minimum sample discrepancy divided by degrees of freedom (CMIN/DF), CFI, RMSEA and *p*-values (Hancock & Mueller, 2010; Blunch, 2008; Mueller, 1996).

The recommended value of CMIN/DF is assumed to be acceptable even for values of 5.0. The interpretation of the CMIN/DF value size depends on the researcher's viewpoint, where ratios as high as 5.0 represent a good model fit (Awang, 2015:57; Mueller, 1996). CFI values above 0.9 indicate an excellent overall fit (Awang, 2015:57; Mueller, 1996). The RMSEA values smaller than 0.08, reported at an average confidence level of 90%, represent a good model fit, while RMSEA values of 0.10 should not be accepted (Awang, 2015:57; Khine *et al.*, 2013:15; Blunch, 2008).

5.5.3 Reliability

The reliability of a measurement instrument is measured using the Cronbach Alpha coefficients, which test the internal consistency of items of the measurement instrument (Khine *et al.*, 2013:85; Lotz & Van der Merwe, 2013b:203). The internal consistency between items of the measurement instrument and its coefficients varies between 0.0 for no reliability and 1.0 for maximum reliability (Lotz & Van der Merwe, 2013b:203). The acceptable reliability must be higher than 0.7 (Khine *et al.*, 2013:102; Bryman & Bell, 2007:164).

6. Results

6.1 Demographic information

The total number of respondents was 429, giving a response rate of 30%. Of the respondents, 31% were female, while 69% were male. General staff had a 54% response rate, supervisors 16%, junior management 13%, middle management 12% and senior management 5%.

6.2 Construct validity

Construct validity of the measurement instrument was assessed using exploratory factor analysis and confirmatory factor analysis. Organisational antecedents and organisational success factors variables did not load 100% on the pattern matrix in exploratory factor analysis and hence were further subjected to confirmatory factor analysis to test the construct validity.

6.2.1 Entrepreneurial orientation variable analysis

The exploratory factor analysis for the entrepreneurial orientation scale showed satisfactory sampling adequacy of KMO of 0.948, indicating that the data was enough to conduct factor analysis, as shown in Table 1 below. The KMO result of 0.948 confirmed that Bartlett's test was also statistically significant, and that factor analysis was applicable because correlations amongst the items were very high (Khine *et al.*, 2013:157). The *p*-value for the KMO and Bartlett's was statistically significant at $p=0.000$, less than 0.001 (Khine *et al.*, 2013:13).

Table 1: KMO and Bartlett's test for entrepreneurial orientation

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.948
Bartlett's Test of Sphericity	Approx. Chi-Square	7877.919
	df	351
	Sig.	0.000

Amongst all the 27 items in entrepreneurial orientation, the communalities test found only 24 items with satisfactory values ranging between 0.618 and 0.383, greater than 0.3 (Khine *et al.*, 2013:153).

The total variance explained a cumulative percentage of the eigenvalue at 47.375%, slightly less than 50% of the information collected for entrepreneurial orientation, as shown in Table 2 below (Khine *et al.*, 2013:71). Thus, the result was considered satisfactory to explain the factor represented in entrepreneurial orientation.

Table 2: Total variance explained for entrepreneurial orientation

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	12.791	47.375	47.375	12.791	47.375

The pattern matrix for the entrepreneurial orientation latent variable was loaded as expected by the literature. Therefore, it was considered enough evidence of construct validity. The pattern matrix for entrepreneurial orientation loaded the observed variables according to how they were categorised in the measurement instrument. All the factor loadings produced values higher than 0.3, as shown in Table 3 below.

Table 3: Entrepreneurial orientation pattern matrix

Pattern Matrix ^a	
Observed variables	Component
C1. I have enough autonomy in my job without continual supervision to do my work.	0.502
C2. Our organisation allows me to be creative and try different methods to do my job.	0.619
C3. Employees at our organization are allowed to make decisions without going through elaborate justification and approval procedures.	0.631
C4. Employees at our organization are encouraged to manage their own work and have flexibility to resolve problems.	0.650
C5. I seldom have to follow the same work methods or steps while performing my major tasks from day to day.	0.387
C6. Our organization regularly introduces new products/services/processes.	0.709
C7. Our organization places a strong emphasis on new and innovative products/services/processes.	0.755
C8. Our organization has increased the number of products/services/processes offered during the past two years.	0.774
C9. Our organization is continually pursuing new opportunities.	0.750
C10. Over the past few years, changes in our products/services/processes have been quite dramatic.	0.701
C11. In our organization there is a strong relationship between the number of new ideas generated and the number of new ideas successfully implemented.	0.709
C12. Our organization places a strong emphasis on continuous improvement (kaizen) in products/services/processes.	0.535
C13. Our organization has a widely held belief that innovation is an absolute necessity for the organization's future.	0.686
C14. Our leaders seek to maximize value from opportunities without constraint to existing models, structures or resources.	0.760
C15. When confronted with uncertain decisions, our organization typically adopts a bold posture in order to maximize the probability of exploiting opportunities.	0.754
C16. In general, our organization has a strong inclination towards high-risk projects.	0.667
C17. Owing to the environment, our organization believes that bold, wide-ranging acts are necessary to achieve the organization's objectives.	0.629
C18. Employees are often encouraged to take calculated risks concerning new ideas.	0.655
C19. The term 'risk-taker' is considered a positive attribute for the employees and management team in our organization.	0.647
C20. Our organization is very often the first to introduce new services/ learning areas/ sport codes/processes.	0.733
C21. Our organization typically initiates actions that competitors respond to.	0.696
C22. Our organization continuously seeks out new services/learning areas/sport codes/processes.	0.773
C23. Our organization continuously monitors market trends and identifies future needs of customers	0.746
C24. In dealing with competitors our organization typically adopts a very competitive "undo-the-competitor" posture.	0.731
C25. Our organization is very aggressive and intensely competitive.	0.786
C26. Our organization effectively assumes an aggressive posture to combat industry trends that may threaten our survival or competition position.	0.755
C27. Our organization knows when it is in danger of acting overly aggressive (this could lead to erosion of our organization's reputation or to retaliation by competitors).	0.684

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

6.2.2 Corporate entrepreneurship variable analysis

The exploratory factor analysis for the corporate entrepreneurship scale showed satisfactory sampling adequacy of KMO of 0.884, indicating that the data was enough to conduct factor analysis, as shown in Table 4 below. The KMO result of 0.884 confirmed that Bartlett's test was also statistically significant and that factor analysis was applicable because correlations amongst the items were very high (Khine *et al.*, 2013:157). The *p*-value for the KMO and Bartlett's was statistically significant at *p*=0.000, less than 0.001 (Khine *et al.*, 2013:13).

Table 4: KMO and Bartlett's test for corporate entrepreneurship

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.884
Bartlett's Test of Sphericity	Approx. Chi-Square	1991.782
	df	15
	Sig.	0.000

The communalities test for all the six items in the corporate entrepreneurship factor produced satisfactory values that ranged between 0.787 and 0.664, greater than 0.3 (Khine *et al.*, 2013:153).

The total variance explained a cumulative percentage of eigenvalues at 73.886%, which was more than half of the information collected in the corporate entrepreneurship factor, as shown in Table 5 below (Khine *et al.*, 2013:71). The result for the total variance explained for corporate entrepreneurship was satisfactory to proceed with the analysis.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.433	73.886	73.886	4.433	73.886	73.886

The pattern matrix for corporate entrepreneurship latent variable loaded according to the literature. Therefore, it was considered evidence of construct validity to conduct structural equation modelling. The pattern matrix for corporate entrepreneurship loaded the observed variables according to how they were categorised in the measurement instrument. All the factor loadings produced values higher than 0.3, as shown in Table 6 below.

Table 6: Corporate entrepreneurship pattern matrix

Pattern Matrix ^a	
Observed variable	Component
B1. Our organisation regularly and continuously introduces new products, services and enters new markets.	0.815
B2. Our organisation seeks to sustain or improve its competitive standing by altering its internal processes, structures and capabilities.	0.850
B3. Our organization seeks to redefine its relationship with its markets or industry competitors by fundamentally altering how it competes.	0.887
B4. Our organisation proactively creates a new product market arena that others have not recognised or actively sought to exploit.	0.867
B5. Our organisation applies entrepreneurial thinking to the design or redesign of its core business model (s) in order to improve operational efficiencies.	0.868
B6. Our organization applies entrepreneurial thinking to the design or redesign of its core business model(s) in order to improve operational efficiencies. or otherwise differentiate itself from i...	0.869

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

6.2.3 Organisational antecedents' analysis

Confirmatory factor analysis for organisational antecedents produced a CMIN/DF value of 5.199, CFI of 0.788 and RMSEA of 0.099. The CMIN/DF and RMSEA values were considered acceptable to represent a good model fit, while CFI value was less than 0.9 at 0.788, which was not indicative of an overall good model fit (Awang, 2015:57; Mueller, 1996). However, since the two indices, CMIN/DF and RMSEA were acceptable, an acceptable construct validity was assumed with all items loading statistically significantly. The full results of the organisational antecedents' model fit are shown below in Table 7.

Table 7: Organisational antecedents' model fit summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	91	1632.456	314	.000	5.199
Saturated model	405	.000	0		
Independence model	27	6591.540	378	.000	17.438
Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.752	.702	.790	.745	.788
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000
Model	RMSEA	LO 90	HI 90	PCLOSE	
Default model	.099	.094	.104	.000	
Independence model	.196	.192	.200	.000	

All the *p*-values for the organisational antecedents' items loaded were statistically significant on the factors at *p*=0000 less than 0.001 (Khine *et al.*, 2013:13).

6.2.4 Organisational success factor variable analysis

The confirmatory factor analysis for organisational success factors produced a CMIN/DF value of 4.365, CFI of 0.917 and RMSEA of 0.089. All three reported indices for the confirmatory factor analysis were considered acceptable to represent the model fit. CMIN/DF value of 4.365 was within the acceptable estimate of smaller than 5.0, CFI value of 0.917 was greater than 0.9, and RMSEA value of 0.089 was less than 0.10 (Awang, 2015:57; Blunch, 2008; Khine *et al.*, 2013:15; Mueller, 1996). The results indicated that an acceptable construct validity existed, and all items loaded were statistically significant, as shown below in Table 8.

Table 8: Organisational success factors model fit summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	60	563.055	129	.000	4.365
Saturated model	189	.000	0		
Independence model	18	5413.852	171	.000	31.660
Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.896	.862	.918	.890	.917
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000
Model	RMSEA	LO 90	HI 90	PCLOSE	
Default model	.089	.081	.096	.000	
Independence model	.268	.262	.274	.000	

All the *p*-values for the organisational success factors items loaded statistically significant on the factors at *p*=0000 less than 0.001 (Khine *et al.*, 2013:13).

6.2.5 Reliability of the measuring instruments

The reliability for entrepreneurial orientations' 27 items was higher than 0.7 (Bryman & Bell, 2007:164; Khine *et al.*, 2013:102; Lotz & Van der Merwe, 2013b:203). The reliability of entrepreneurial orientation was at 0.953, as shown in Table 9 below (Gerrish & Lathlean, 2015:418).

Table 9: Cronbach Alpha for entrepreneurial orientation

Reliability Statistics for Entrepreneurial Orientation				
No.	Latent Variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
1	Entrepreneurial Orientation	0.953	0.954	27

The reliability for corporate entrepreneurship six items was higher than 0.7 (Bryman & Bell, 2007:164; Khine *et al.*, 2013:102; Lotz & Van der Merwe, 2013b:203). The reliability for corporate entrepreneurship was 0.928, as shown in Table 7.10 below (Gerrish & Lathlean, 2015:418).

Table 10: Cronbach Alpha for corporate entrepreneurship

Reliability Statistics for Corporate entrepreneurship				
No.	Latent Variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
1	Corporate Entrepreneurship	0.928	0.929	6

The reliability of the organisation antecedents' values was all acceptably higher than 0.7 (Bryman & Bell, 2007:164; Khine *et al.*, 2013:102; Lotz & Van der Merwe, 2013b:203). Therefore, the reliability of the five subscales of organisational antecedents was all acceptable, ranging from 0.878 to 0.719. Top management support had the highest reliability of 0.878, while organisational boundaries had the lowest value of 0.719, as shown in Table 11 below (Gerrish & Lathlean, 2015:418).

Table 11: Cronbach Alpha for organisational antecedents

Reliability Statistics for Organisation Antecedents				
No.	Latent Variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
1	Top Management Support	0.878	0.879	8
2	Autonomy / Work discretion	0.811	0.815	4
3	Reward / Reinforcement	0.863	0.864	5
4	Time Availability	0.764	0.762	5
5	Organisational Boundaries	0.719	0.724	5

The reliability test for success factors values was higher than 0.7 (Bryman & Bell, 2007:164; Khine *et al.*, 2013:102; Lotz & Van der Merwe, 2013b:203). The reliability of the four subscales of success factors was acceptable, ranging from 0.904 to 0.817. Financial produced the highest reliability value of 0.904, while internal business process produced the lowest value of 0.817, as shown in Table 12 below (Gerrish & Lathlean, 2015:418).

Table 12: Cronbach Alpha for success factors

Reliability Statistics for Success Factors				
No.	Latent Variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
1	Financial	0.904	0.905	4
2	Customer	0.896	0.899	5
3	Internal Business Process	0.817	0.819	5
4	Learning and Growth	0.852	0.858	4

6.2.6 Mean and standard deviation

According to Levine *et al.* (2014:136), the mean is a typical or central value that serves as a balance point in a data set. When the mean is higher than the mid-point, it indicates that the results are more favourable to the viewpoint, and if the mean is lower than the mid-point, it indicates that the results were less favourable to the viewpoint (Levine *et al.*, 2014:136). A mean value higher than 3.0 in this study was considered a favourable response, whereas a mean value lower than 3.0 was considered an unfavourable response.

While standard deviation is the measure of variation and is used to measure the average scatter around the mean (Levine *et al.*, 2014:142). Standard deviation determines how larger values fluctuate around the mean and how smaller values fluctuate below the mean (Levine *et al.*, 2014:142). In this study, smaller values of standard deviation showed that responses had similar views and larger values showed that responses had varied views e.g. standard deviation values less than 1.0 showed that responses had similar views and values greater than 1.0 showed that responses had varied views (Levine *et al.*, 2014:142).

Table 13 below shows a summary of the average mean and a standard deviation of all the latent variables used in the hypothesis. The top management latent variable received an average of 428 responses with a favourable mean value of 3.4 and a favourable standard deviation of 0.97. Autonomy or work discretion latent variable received an average of 427 responses with a favourable mean value of 3.52 and a favourable standard deviation value of 0.932. Rewards or reinforcement latent variable received an average of 426 responses with a favourable mean value of 3.58 and a favourable standard deviation value of 0.894. The time availability latent variable received an average of 426 responses with a favourable mean value of 3.43 and a favourable standard deviation of 0.916. Organisational boundaries latent variable received 424 responses with a favourable mean value of 3.61 and a favourable standard deviation value of 0.903. All organisation antecedent latent variables showed a more favourable mean response, greater than 3.0 and a favourable standard deviation value of less than 1.0.

The entrepreneurial orientation latent variable received 426 responses with a favourable mean value of 3.61 and a favourable standard deviation of 0.841.

The corporate entrepreneurship latent variable received 425 responses with a favourable mean value of 3.78 and a favourable standard deviation value of 0.904.

The financial latent variable received 427 responses with a favourable mean value of 3.86 and a favourable standard deviation of 0.881. The customer latent variable received 426 responses with a favourable mean value of 3.94 and a favourable standard deviation of 0.844. The internal business process received 425 responses with a favourable mean value of 3.89 and a favourable standard deviation of 0.847. The learning and growth latent variable received 425 responses with a favourable mean value of 3.76 and unfavourable standard deviation of 1.003.

All the success factors variables had mean values that were favourable, most of them with a standard deviation value that showed similar views except for the learning and growth latent variable with a standard deviation value greater than 1.0.

In a nutshell, all the mean values of the 11 latent variables were greater than 3.0, and 10 latent variables standard deviation values were below 1.0. The learning and growth latent variable was the only variable with a standard deviation value greater than 1.0, as shown below in Table 13. On the surface, considering the results in Table 13 below, the outcome favours the initial hypothesis, which states that when the internal environment of an organisation is conducive, it facilitates the existence of entrepreneurial orientation, which in turn creates a corporate entrepreneurial environment, which ultimately results in the success of organisations.

Table 13: Summary of average mean and standard deviation

Variable	Average Number of Respondents	Minimum	Maximum	Mean	Std. Deviation
Top management support	428	1	5	3.4	0.97
Autonomy / Work Discretion	427	1	5	3.52	0.932
Rewards / Reinforcement	426	1	5	3.58	0.894
Time Availability	426	1	5	3.43	0.916
Organisational Boundaries	424	1	5	3.61	0.903
Entrepreneurial Orientation	426	1	5	3.61	0.841
Corporate Entrepreneurship	425	1	5	3.78	0.904
Financial	427	1	5	3.86	0.881
Customer	426	1	5	3.94	0.844
Internal Business Process	425	1	5	3.89	0.847
Learning and Growth	425	1	5	3.76	1.003

6.2.7 SEM Model summary results

The model produced three mediation effects in the relationship, starting from organisational antecedents to the entrepreneurial orientation factor, as shown in Table 14 below. A positive relationship was apparent between the top management support factor, rewards or reinforcement factor, organisational boundaries factor, and entrepreneurial orientation factor. The relationship between autonomy or work discretion factor and time availability and entrepreneurial orientation was weak, resulting in no mediation effect and therefore was deleted from the model. The regression lines for autonomy, time availability, and entrepreneurial orientation produced p-values of 0.219 and 0.513, respectively, greater than 0.05.

The relationship between the two mediating variables, entrepreneurial orientation and corporate entrepreneurship, with the success factors, was strong, indicating a mediation effect. However, the relationship between entrepreneurial orientation to success factors produced a partial mediation effect of 53.58%. The relationship between organisational antecedents and success factors showed complete mediation in top management support factors and organisational boundaries. No unique effect in autonomy or work discretion factor and the time availability factor was produced. The relationship from rewards or reinforcement factor to success factor produced a partial mediation at 29%, as shown in Table 7.14 below.

Table 14: SEM model summary results

SEM Model					
Factors		Estimate	P-value	Relationship	
C_Entrepreneurial_Orient	← Management_Support	0.253	0.001	Mediation	
C_Entrepreneurial_Orient	← Autonomy	0.136	0.219	No mediation	
C_Entrepreneurial_Orient	← Reward	0.197	0.049	Mediation	
C_Entrepreneurial_Orient	← Time_availability	-0.047	0.513	No mediation	
C_Entrepreneurial_Orient	← Organisational_boundaries	0.345	***	Mediation	
B_Corp_Entrepreneur	← C_Entrepreneurial_Orient	0.895	***	Mediation	
Success	← B_Corp_Entrepreneur	0.317	***	Mediation	
Success	← C_Entrepreneurial_Orient	0.246	***	Partial mediation 53.58%	
Success	← Management_Support	0.133	0.111	Complete mediation	
Success	← Autonomy	0.011	0.924	No unique effect	
Success	← Reward	0.258	0.015	Partial mediation 29%	
Success	← Time_availability	0.015	0.845	No unique effect	
Success	← Organisational_boundaries	-0.024	0.759	Complete mediation	

7. Conclusion

The proposed framework developed after conducting SEM analysis produced nine variables out of the initial 11: three independent variables, two mediating variables and four dependent variables. The independent variables were organisational antecedent factors; top management support, rewards or reinforcement and organisational boundaries (Kuratko *et al.*, 2014:37). The mediating variables were entrepreneurial orientation and corporate entrepreneurship (De Jong, Parker, Wennekers & Wu, 2011:4). The dependent variables were success factors; finance, customer, internal business process and learning and growth (Kaplan, 2010:4; Singh & Arora, 2018:874). Additionally, the framework exposed that rewards or reinforcement and entrepreneurial orientation were partially related to the success of organisations.

After a detailed analysis using SEM, the proposed framework was renamed to Business Success Model (BSM). The BSM in Figure 2 below, suggests that a well-balanced combination of top management support, rewards or reinforcement and organisational boundaries can create entrepreneurial orientation which would, in turn, produce corporate entrepreneurship. Corporate entrepreneurship supported by entrepreneurial orientation and rewards or reinforcement can be responsible for producing the success of organisations. Furthermore, rewards or reinforcement and entrepreneurial orientation can produce organisational success.

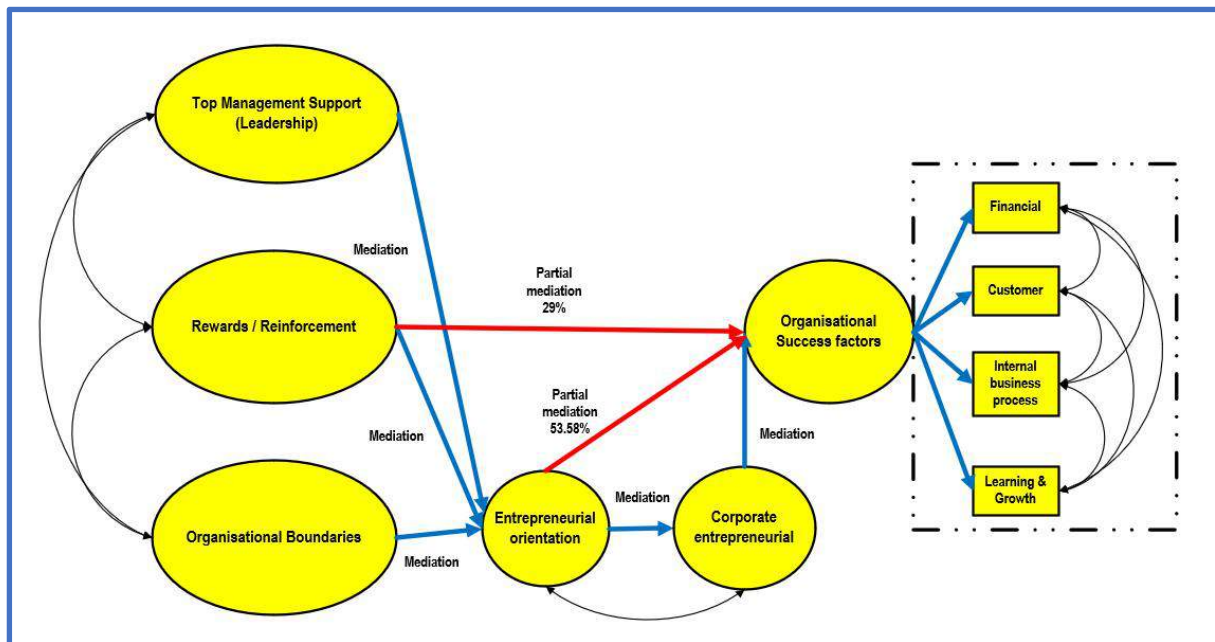


Figure 2: Business Success Model

8. Recommendations And Managerial Implications

The study identifies the key variables required by a business to create organisational success. Top management support, reward or reinforcement and organisational boundaries were identified as key to organisational success. Business leaders are recommended to create a conducive environment to enhance organisational success. Top management is recommended to develop business visions, missions, and strategies to provide direction to employees and provide channels to employees for ideas and suggestions. This can enable top management to tap into the collective expertise and creativity of the entire organisation. Furthermore, top management should reduce red tape in decision-making processes through unbundling layers that slow communication.

Reward or reinforcement stood out to be a key factor for success. Directly by itself, it can impact success. Organisations are recommended to develop reward systems that are clear and fair to

employees. Additionally, reward systems should be linked to projects or innovations, and successful projects should be rewarded fairly.

Organisations should ensure smooth and transparent communication between departments, introduce flexible standard operating procedures, clearly specify employees' job descriptions, and expose employees to internal and external factors that affect the organisation.

Organisations should ensure that employees have complete autonomy in their jobs, promote innovation and continuous improvement, provide room for failure to encourage risk-taking, and promote forward thinking that introduces new business models and strategic renewal. They should use the results to challenge competitors through domain redefinition and organisational rejuvenation.

It is also recommended that market share, budgets and financial targets are tracked annually and comparisons between years are conducted. Customers are habitually surveyed, the voice of the customers is acted upon swiftly, and product quality and customer promised times are met to satisfy and retain customers.

Standard operating procedures should be designed flexibly and always aligned with customers' needs and wants. Internal processes that encourage smooth communication between departments and customer relations employees should also be promoted.

Introduce internal satisfaction surveys for employees. Identify skilled and experienced employees and appoint them to become mentors for junior staff, introduce succession plans and ensure that all employees are trained.

9. Limitation of Study

The investigation identified a few constraints that could be utilised as the initial step for future research on corporate entrepreneurship. The spread of research locations resulted in budget and time constraints. Non-speaking English countries such as Angola, Mozambique and the Democratic Republic of Congo were excluded from the study. The study viewed countries going through varying political, economic, technological, and social challenges without considering these differences. Furthermore, cultural factors were not considered in the measurement instrument.

10. Further Research Suggestions

The study proposed a new framework that evaluated the relationship between corporate entrepreneurship and organisational success. The framework must be rigorously validated through future research to prove its model fitness.

The study conducted was a cross-sectional study. A longitudinal study with an extended geographical demarcation is suggested to further fine-tune the proposed framework to further strengthen the proposed framework.

Sub-Saharan Africa is the untapped region for corporate entrepreneurship studies. The recommendation is that more resources be channelled towards the region to increase the number of research projects to further improve knowledge of corporate entrepreneurship in the region.

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Integrating Talent Management In Small-Medium Enterprises For Sustainability: A Qualitative Study

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Keywords

Keywords: Talent management, Sustainability, Small and medium enterprises (SMEs)

Abstract

Purpose: This paper explores the integration of talent management for sustainability, in small-medium enterprises.

Design/methodology/approach –Using a constructivist perspective, 10 SMEs were studied from South Africa, by interviewing the owners. It is imperative to interpret the above practices from the practitioners' viewpoint, hence qualitative research was deemed relevant for this study. Data was transcribed, coded and thematic analysis carried out.

Findings – The findings show a substantial impact of all the components of talent management (attracting, selecting, developing, and retaining talents) for sustainability. The talent management practice improves SMEs' sustainability in their business.

Practical implications –Talent management should be integrated into SMEs for sustainability.

1. Introduction

Given how challenging the global economic environment is, companies must be strategic and pragmatic in order to remain competitive (Savanevicien & Vilciauskait 2017:245). They achieve this in part by making the most of their highly skilled people resources on a global scale (Carbery, 2015). Regardless of local economic and labor market circumstances, there has been a resurgence of interest in this topic worldwide. Businesses of all sizes now value the value of good personnel management. Many businesses believe that talent management is essential for gaining a competitive advantage in today's climate of hyper-change in small and medium enterprises. The framework for this study is to identify the integration of talent management practices such as attracting talent, developing talent, motivating talent, retaining talent, and system integrating talent practices. In the modern-day, the small-medium enterprise has played a dynamic role in economic turnaround such as the primary source of employment and poverty reduction both in unindustrialised countries and industrialised countries (Abugre, & Anlesinya, 2019:438).

Naidoo, (2021:75) emphasizes that nearly 40% of the population is unemployed. Therefore, the need for SMEs is significant in addressing the unemployment challenges that bring about poverty and inequality. For sustainable wealth creation, it is important to recognise talent management practice that retains the best individuals for the job (Štrukelj, Nikolić, Zlatanović & Sternad, 2020:499). The problem of high unemployment may be reduced if one considers the enormous contribution played by SMEs toward employment creation. The operation of small businesses in South Africa has been evaluated to be 5.6 million, creating 11.6 million overall employment openings (Ramukumba,

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2014:23). This implies that a total of six million jobs have been created not taking into account the small business owners themselves (Mira, Choong & Thim, 2019:778).

Talent management is defined as a company's dedication to attracting, employing, retaining, and cultivating the most qualified and extraordinary people available in the labour market. It's a business strategy that firms believe will help them retain their finest and brightest employees. In a competitive market, the stated business strategy, like employee involvement or employee appreciation, will ensure the attraction of top talent. Talent management is a business strategy that aligns the workforce with the organisation's goals and values. It includes aligning the right person with the proper role and tools (Anlesinya, Dartey-Baah, & Amponsah-Tawiah, 2019:150).

Talent management is a management strategy that organisations install to retain their top employees and training/developing them to meet the changing dynamics of the organisation is a much more significant concern (Beaumont, Farnale, & Hartel, 2016:500). However, the sustainability of talent management helps businesses to achieve their desired outcomes. Talent management helps to develop employees' skills according to the company's needs. For an effective talent management process, the following components are crucial which will help in accomplishing corporate goals and values which include attracting, selecting, developing, and retaining talents. Talent management for sustainability helps in assessing an organization's capability to maintain its goals (McDonnell, Collings, Mellahi & Schuler, 2017: 87). Individual competencies that will help the firm deliver strategy are created and maintained through talent management.

The contribution of this study to the context of SMEs, talent management is viewed as a concept suited for all employees but focuses mostly on people with high potential and in pivotal roles in order to attract talents, grow their optimal capabilities, and retain them. The research also contributes to small business leaders/owners' ability to improve the ability to develop effective talent management strategies,

2 Problem Investigated

In South Africa, SMEs have numerous problems in developing and maintaining a solid talent pipeline, many of which result in failure. Businesses must not only adapt to changing demographics and labor choices, but also establish new competencies and reinvigorate their organizations, all while investing in new technology, globalizing operations, and competing against new competitors. To be successful globally, SMEs operating in several markets must do more to attract, select, develop, and retain the finest workers. Many studies and investigations were carried out with possible solutions to improving SMEs (Lopes, 2016:210; Tafti, Tafti, Mahmoudsalehi, Mahmoudsalehi, Amiri, & Amiri, 2017:18). Furthermore, talent management practices stand as a possible solution for SMEs' sustainability. The study at hand, therefore, aims to explore the possible ways through which to integrate and apply talent management practices to address the challenges facing SMEs in South Africa. A new framework for talent management has to begin with clear objectives. One of the objectives is integrating talent management practices for the sustainability of SMEs and secondly the skills and competencies SMEs need in order to be sustainable and lastly, ways of retaining the right talent in SMEs.

3 Research Aims

To explore integrating talent management practices into SMEs to enhance their sustainability

4 Research Questions

- The primary research question is
How can SMEs achieve sustainability through integrative talent management practices?

The secondary research questions are as follows:

- How do SME owners/leaders interpret talent management practices for sustainability?

- How best can SME's attract, develop, and retain talent for increased sustainability of their businesses?

5 Literature Review

This section offers a review of the talent management framework. The review addresses the school of thought within the human resources function. Ozuem, Lancaster, and Sharma (2016:50) highlighted that a lack of critical talent existed in the workplace and therefore emphasized that organisations must use effective talent management practices if they wanted to be successful. Such recommendations led to the emergence and development of numerous talent management strategies to win the 'talent practice'. Mohammed, Baig, and Gururajan (2018:16), state four important areas of talent management practice such as winning value proposition, talent mindset, robust resource strategy, and tactics to build the pool of talent. This helps in building and developing practice for effective talent practice. In the 2000s, some authors (Cui, Khan, & Tarba, 2017:10; Khilji, Tarique, & Schuler, 2015:240; Sparrow & Makram, 2015:260) agreed on the uncertainties of change in SMEs that will integrate talent management practices. Gallardo-Gallardo and Thunnissen (2016:35) listed technological changes, economic challenges, and political instabilities as key influencing business operations. A number of organisations promote talent management. Urbancová and Vnoučková (2015:120) argued that the identification and management of talent should be a critical agenda for co-operating organisations. Thus, many organisations struggle to align their talent management under one consistent strategy. It may be a considerable challenge to make this happen. Sustainability plays a role in SMEs to have a good package and to succeed in their businesses, which is not only for the short-term economy but for long-term and financial value (Rudhumbu & Maphosa (2015:27). However, the only way to connect to sustainability in SMEs is through genuine outcomes, but in larger companies, the implementation of the sustainability report is well supported and developed (Dartey-Baah, & Amponsah-Tawiah, 2019:149). In fact, only a few SMEs accept the talent management practice for sustainability in SMEs.

5.1 A framework for Talent Management

Talent management is defined as the methodically organised, strategic process of getting the right talent onboard and helping them grow to their optimal capabilities while keeping organisational objectives in mind (Waters-Sobkowiak, Kowalski & Smits, 2018:12). The process thus involves identifying talent gaps and vacant positions, sourcing for and onboarding the suitable candidates, growing them within the system and developing needed skills, training for expertise with a future focus, and effectively engaging, retaining, and motivating them to achieve long-term business goals. The definition brings to light the overarching nature of talent management. However, it permeates all aspects pertaining to human resources at work while ensuring that the organization attains its objectives. Thus, the process of getting the right people on board and enabling them to enable the business at large.

Thorough integration of talent management with other business processes necessitates combining business strategy, human resource strategy, and organisational culture, as well as delivering significant results (Meyers, 2016:12). The integration's outcomes can help in resolving short-term talent concerns, providing platforms for delivering talent management processes, and aligning talent management programs with talent goals. The alignment approach featured business and talent strategies for successfully aligning core business practice, strategic deliverables and competencies, and a talent mindset. The performance of talent management may be judged when it is aligned with other procedures in the company strategy. Talent management is the implementation of a set of integrated systems designed to improve labor force efficiency by evolving the processes of attracting, developing, and retaining talented individuals in order to ensure that their essential aptitudes and skills are used to meet the company's current and future needs (Gateau, & Simon, 2016:23). To improve performance effectiveness, (Meyers & van Woerkom, 2017:670) the talent management approach integrates four key success elements. The recruitment and selection of talent to the business, as well as the assessment of competencies and abilities in talent evaluation, are all success aspects that combine with human resource programs, systems, and procedures. Mory, Wirtz, and Göttel (2016:182) revealed that employee motivation and loyalty are important factors in achieving a long-term

competitive advantage within an organisation and that they may help a company achieve its goals. O'Connor and Crowley-Henry (2019:910), state that motivation and engagement are frequently given as a strategy to improve individual performance. In addition, McDonnell, Collings, Mellahi, and Schuler (2017:87), indicate that the majority of the evaluated talent management methods and activities are commonly applied to the concept of talent management. Employee retention, training and development, performance management, remuneration, and senior management participation (Leonard, 2010). In order to effectively lead the firm forward into the new normal, HR professionals must attempt to improve their business knowledge. All HR activities targeted at attracting, developing, motivating, and retaining high-performing individuals are included because talent management is centered on people, it assists the organizations in maximizing their value as an HR tool, which involves many stages.

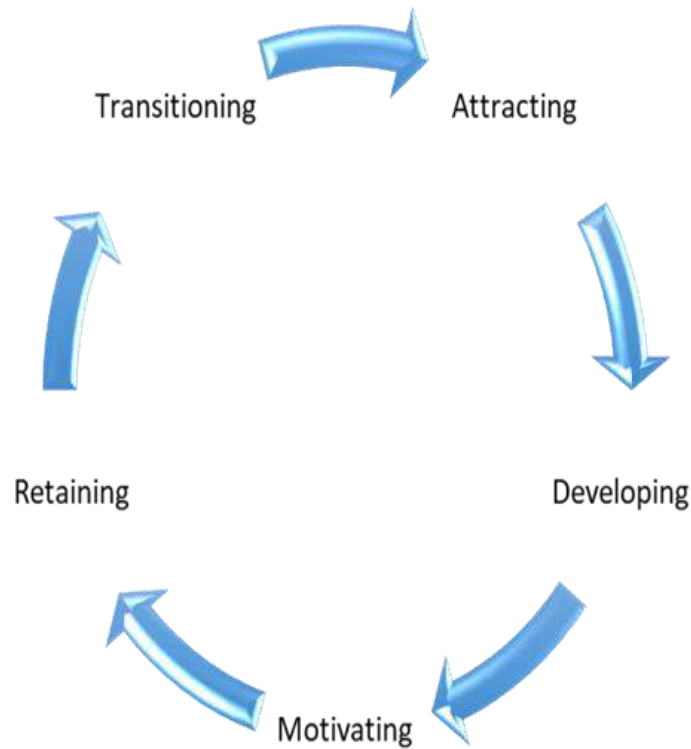


Figure 1: Talent Management Framework

An integrated talent management approach can assist leaders to identify the types of talent available in a global organization, connecting all practices talent to the central strategy, and understanding the types of investments made/can be made to fulfil current and future business objectives.

5.1.1 Attracting Talent

Talent management provides a clear picture for SMEs to approach staff development and management planning. Therefore, businesses are not deliberate in this area; they will fail to develop employee loyalty, which will have a negative impact on the business in the future. It has been suggested that corporations hire based on individual attributes and characteristics that are difficult to teach because specific tasks are more accessible and less expensive to coach when an individual has the necessary talents (Neri & Wilkins, 2019:54).

5.1.2 Developing Talent

The importance of training and development in the implementation of a successful sustainability program cannot be overstated (Tajuddin, Ali, & Kamaruddin, 2015:80). Human resource managers can have an immediate impact on any planned changes in an organization through training initiatives

(D'Annunzio-Green & Teare, 2018:125). Allowing employees to obtain practical experience in adopting new job processes is also crucial in order for them to gain expertise and dedication to long-term efforts (Tajuddin, Ali, & Kamaruddin, 2015:80). Training and development must continue to focus on specific job requirements as well as the development of interpersonal skills in order to be effective (Anlesinya, Dartey-Baah, & Amponsah-Tawiah, 2019:152). Ford (2017:46) agreed that training and development programs should support information directly relevant to an employee's work activity to fill in the gaps in the job description and demonstrate to executives the training programs' return on investment. Furthermore, for an organization to survive and thrive, the primary focus should be on how a brilliant individual may grow to provide long-term value in learning programs that are aligned with company strategy. Job rotation, performance feedback, job expansion, job enrichment, job shadowing, and promotion from within are sustainable development practices. Involve team members in all elements of the personnel selection, training, and development process (Gallardo-Gallardo, Moliner, & Gallo, 2017:335).

5.1.3 Motivating Talent

Makram, Sparrow, and Greasley (2017:260), motivation is a combination of three fundamental factors that make up an individual's stimulus profile: a want to maintain cordial relationships with others, a desire to achieve, and a desire for power. Reward systems encompass more than just monetary rewards. Reward options include schedule flexibility (Jooss, Burbach, & Ruël, 2019:24), profit sharing, benefits and incentives (Cardenas-Navia, & Fitzgerald, 2019:214), and recognition (King, 2016:95), paid time off and vacations, premium parking, and gift cards. Motivational programs require a lot of attention. If performance goals are set excessively high, employees may believe they are impossible to accomplish and will not try to meet them (Hsieh, Chen, & Liu, 2019:113). On the other hand, employees may not take the procedure seriously if the criteria for awarding bonuses are too low (Jooss, Burbach, & Ruël, 2019:25). Incentives and prizes are commonly thought to be the most powerful motivators for aligning organizational goals with employee goals (King, 2017:299).

5.1.4 Retaining Talent

Employees from younger generations are more likely to have a learning goal orientation and are less likely to have a solid connection to their company. Organizational commitment has substantial impact retaining on talent as a mediator between learning orientations and intent to stay. Creating distinctive growth chances for managerial workers is likely to promote organizational engagement, especially among younger generations (McCracken, Currie & Harrison, 2016). "To attract and retain talent in organizations simply is to give leadership development and nurture both learning goal orientation and organizational commitment" (King, 2015:279).

5.1.5 Transitioning Talent

Effective talent management focuses on the organization's collective transformation and progresses through individual personnel development (Chung & D'Annunzio-Green, 2018). This entails making each employee feel like they're a part of something bigger. Retirement benefits, exit interviews, and efficient succession planning may appear unrelated career stages, yet they are all transition instruments that allow the shared journey to occur (Hsieh, Chen, & Liu, 2019:108).

5.2 Talent management and SME sustainability

Concerning the enhancement of performance as a result of talent management activities, it is also believed that businesses that fail to recruit, retain, and use competent, talented, and high performers are more likely to employ relatively unskilled employees. Such staffing levels are likely to negatively influence on an organization's survival, growth, development, and competitiveness (Ali, Egbetokun & Memon, 2018:2). Similarly, Ali et al., (2018:2) argued that poor strategic hiring has a high risk of setting the company back years in competitive advantage. It is easy to conclude that talent management is critical for an organization's survival, growth, and competitiveness based on this concept. This argument supports the notion that human capital is the bedrock of corporate success (Philips, 2014:18). Talent management places great importance on employee performance, which defines their organisational classification. According to the talent management agenda, when people in leadership or management roles perform poorly, the enterprise's overall productivity suffers.

Church, Rotolo, Ginther, and Levine, (2015: 17) also discovered that below-average performers aim low, lowering everyone's performance scale in the organization. Furthermore, below-average performers are more inclined to enlist the help of their underperforming coworkers. Talent management strategies were devised and strategically applied to solve performance difficulties. Furthermore, businesses are more likely to achieve top performance levels when they make an effort to recognize, develop, and utilize the unique abilities of their employees to attain corporate goals (Bratton, 2018). In essence, businesses invest in talent management to increase efficiency, be more inventive, and, in the end, improve customer happiness, all of which contribute to the company's survival, growth, and competitiveness. Given the importance of talent management to the study and the fact that businesses use it for various reasons, the values of talent management as outlined by management scholars were used in the research. This was done to include SMEs in the study based on the importance of talent management.

6 Research Methodology

6.1 Research Design

Qualitative research is used when a researcher has little knowledge of a topic or phenomenon and wants to learn more about it (Cridland, Phillipson, Brennan-Horley & Swaffer, 2016:7). Qualitative research will be acceptable for the research to be undertaken because the researchers have minimal information about the occurrence, the study was done within Interpretivism. The researchers' goals are to use socially constructed meanings to analyze and make sense of talent management for sustainability in small-medium enterprises (SMEs) in South Africa. Qualitative research was chosen as the best method for conducting this study. Qualitative research is a collection of interpretive techniques in which all practices are considered equal, and no single approach is chosen over another (Mayer, 2015:56). "Qualitative research is used to investigate an event in the context of the environment in which it naturally occurs, and it is supported by social meaning from the individuals who were exposed to the occurrence" (Ngulube, 2015:135).

6.2 Sampling, Data collection, and Data analysis methods

6.2.1 Sampling

Purposive sampling techniques were used to select the participants (Creswell & Plano Clark, 2007). In qualitative research, samples are frequently chosen rather than drawn at random. To find participants who wished to and could engage in the current study, a purposive sample was used.

6.2.2 Population

The population for this study was small-medium firms in Johannesburg, South Africa. Small business owners from different parts of Johannesburg were chosen to add to the data's richness.

6.2.3 Sampling Method

Cluster probability sampling was used by the researcher to identify the sampled businesses. This strategy worked well since it enabled us to geographically cover the entire country and perform in-person interviews with the sample. Only participants who are conveniently accessible or available at any given time are chosen for the sample using convenience sampling (Latham, 2008).

6.3.4 Sample Size Determination

The sample size for a phenomenology study might range from 5 to 20 people (Sigvaldadóttir & Taylor, 2016). When selecting the sample size for the study, researchers used the data saturation technique. When the collected data does not lead to new information but rather a replication of what has been gained earlier, the researcher will know they have collected enough data (Sigvaldadóttir & Taylor, 2016). SME owners who own businesses that have been in operation for at least five years and are based in Johannesburg, South Africa, and to be staffed by between 0-50 employees, and must implement talent management policies with their businesses, all these requirements must be in order to be selected for participation in the study. After interviewing ten SME owners, the study was deemed complete, due to data saturation.

6.2.5 Data Collection

The data were gathered using semi-structured face-to-face interviews. Each participant received and signed an informed consent form prior to participating in the interviews. The meetings took place at a mutually agreeable time, date, and venue. The interviews were all held in public venues that were convenient for the participants. The interview settings supported participants' confidentiality and safety. In qualitative research, Van den Broek, Boselie, and Paauwe, (2018:140) defines interviewing as a data-gathering approach for obtaining in-depth thoughts and first-hand information from respondents' viewpoints.

6.2.6 Dimensions of trustworthiness

It is critical to look at how qualitative researchers decide whether the research study's conclusions are credible, transferable, confirmable, and trustworthy because they do not employ methods with set standards for validity and reliability. Being reliable is essential to implementing these four principles. How confident a qualitative researcher is in the study's findings is measured by their credibility (Korstjens & Moser, 2018). This demonstrates how reliable and accurate the study's findings are. To ensure the validity of the research findings, the researcher employed triangulation.

The key to transferability is how a qualitative researcher shows how the study's results can be applied to different contexts (Noble & Smith, 2015). The researcher gave a thorough explanation in order to guarantee transferability. The study report should contain a substantial summary because it is comprehensive and provides a wealth of background and methodology information. The researcher outlined every stage of the research procedure in the report, from data collection to interpretation and conclusion.

Conformability is the extent to which the results of an investigation can be checked or supported by other researchers (Baxter & Eyles, 1997). To validate the data and account for all the research decisions and actions, including how the data was acquired, documented, and evaluated, the researcher carefully assessed the inquiry techniques and findings. To assure confirmability, this was done. The researcher was aware of his background and constantly considered it in order to minimize bias while collecting data. The continuity of outcomes through time is referred to as dependability. Participants in the study were SME owners/founders. To ensure that SMEs have valid data that could be collected, resulting in results that could be believed, the same interview procedure was used throughout the whole study.

6.2.6. Data Analysis Techniques

The data analysis techniques employed in this study include explorative analysis. The study used explorative analysis to summarise all the responses from the participants using manual coding.

6.3 Coding

The data was transcribed and read after the interview to extract the participants' expressions, feelings, and opinions in form of inductive coding. This is a beginning point for demonstrating the format of an interview. Upon establishing the outline, the comparisons are grouped into reactions, such as grouping into different categories of personality traits to establish the subject of individual elements that produce the individual or organizational talent management approach. This sort of code, known as open coding, is suited for this type of circumstance. Themes, coding, and classification. This technique concludes as follows:

Table 1: SME owner sustainable talent management practices

Engaging talent management for sustainability in SMEs (Individual)		
Individual Factors	Needs of Sustainability in SMEs	Factors related to the nature of sustainable talent management
1. Experience 2. Personal commitment	1. Relationship with employees 2. Sustainable growth 3. Sustainable development	1. Sustainable Talent\ 2. Attract, develop, retain and motivate talent 3. Role of talent management

7 Result findings

7.1 Individual Factors

Individual factors disclose the genuine essence of the individual during the interview process, defining their conduct. This illustrates that each participant may decide on talent management methods for their businesses based on their views and feelings. Below are the two most critical keys.

Table 2: Individual factors

First Themes Category	Individual Factors
Talent Management practice related to SMEs in South Africa	1. Experience in talent management 2. Personal commitment

7.2 Experience in Talent Management

The majority of the participants have similar perspectives on in-depth knowledge and expertise with talent management, and their responses to the research questions were "are you familiar with the term Talent management?" And could you give me a brief description of it in your own words?" The first respondent said the following:

Participant 1 comment "I am well aware with that term Talent management," "Yes"

Participant 1 comment about talent management;

"Talent management is to guarantee that organizations have the amount and quality of people in place to achieve their present and future business needs,".

Talent management is a generic perspective on talent that focuses on either high-performing and high-potential people or talent in general, and it can also be a talent pool or flows of employees into a role in an organization."

Participant 2 comments about management: "uhmmmm, a bit. Yeah I am familiar with it".

"In my own words? It's the way I help people out of my business. Ya that's how I can say, how I can define it." "Yes. Oh, ok, talent management facilitates the development and career progression of highly talented and skilled individuals."

Participant 4: "uhhh, Talent management can be it is basically a set of combined activities such as attracting, developing, motivating, engaging and keeping talented or highly competent employees."

Participant 5: "Talent management it ensures organizations to have the quantity and quality of people in place to meet their current and future business priorities".

The finding of this study showed that experience plays a vital role in SME owners because the researcher found that business managers had few experiences before starting their businesses. The response concurs with literature review, business managers need to have experience of running the business.

7.3 Personal Commitment

Personal commitment refers to the participant's thoughts that develop because of being obligated due to their personal beliefs and ways of thinking. In the statement below, participant number one illustrates this.

“.....SMEs can achieve their sustainability through talent management practices, this is one of the best ways is to incorporate talent management to the company mission and vision.” This shows that the participant felt that the only way to have sustainable talent management in their organization is by incorporating talent management into the company mission statement. Participant 3 also shows signs of their personal commitment and beliefs in the statement below when asked if they felt other companies should engage in sustainable talent management.

“Yes. Talent management is said to be the integration of different skills or activities and moreover to me is called is an in-born talent.”

The report for this study states that educational credentials and also to incorporate talent management are required to successfully compete in the organization. Moreover, he pointed out that only one talent management practices are sustainable in the organization by incorporate talent management into the mission statement of the company.

7.4 Factors related to Sustainability in SMEs

The practice of being involved in talent management, which has been identified as a vital aspect in SMEs' sustainability, has also been proven to have a major impact on decision-making. Relationships with employees, and long-term viability. This moniker gave the leadership, sustainable growth, and sustainable development. The following people's responses provide additional proof for these claims. The foundation of SMEs' sustainability factors are depicted in the table below.

Table 7.4: Factors related to the nature of sustainable talent management

Third Themes Category	Issues related to the nature of sustainable talent management
The factors that is related to the nature of sustainable talent management	<ol style="list-style-type: none"> 1. Sustainable talent management 2. Attract, develop, retain, and motive talent 3. The role of talent management practice

Participant 9 was the only participant that expressed his views, on how integrated talent management practice can be sustainable. The participant described the level of sustainable talent management as being another way businesses can bring their ideas and support, establishing and maintaining a comparative advantage talent management practices to be more sustainable. This is shown in the below statement

“Yea, therefore, by systematically managing the employees with their different competencies and integrating this with team dynamics, it is very possible to attain sustainability”. Other participants from 1, 2, 3, 4, 5, 6, 7, and 8 gave the same comment regarding what strategies can be associated more with competitive and sustainable talent management practices in SMEs; Attract, develop, retain, and motive talent.

These are some of their comments:

Participant 1: “hummmmm, the only way the business can move forward is by hiring and selecting skilled and talent candidates for the jobs, so that talent can be developed by offering workshops and seminar”.

Participant 2: “Obviously you see, any corporate business owner’s days is expected to implement talent management practices into their business to ensure that their company has a good brand image this will entice future employees to want to be associated with this company. So that the Company

can also ensure that they train employees so that they can gain new knowledge and advance in their career, and also make the work flexible to ensure creativity from the employee”.

Participant 3: “um, it all starts with hiring the right people or the right job. This is a human resource issue. Finding and selecting the best people who can not only perform but enrich the organization through managing the talent and development”.

Participant 4: “well, that is a right question you ask me, Laugh, the first and most important thing is to cater the generation of employees, that is the generation x and Y’s. They grew up with technology and as a result, the use of social media and other virtual platforms will help attract employees. As for development, it is important to have programs in place that help bridge the gap between the corporate world and university life. Effective retention again is dependent on the newer generation of employees in the talent pool, whose values are different from those of elder generations”.

Participant 6: “Obviously, not only does the program provide new job opportunities, but it also provides career connections offers a host of career development tools such as self-assessments, tools to develop resumes, and articles on various job seeking strategies within the organization. Skilled people will not remain in a job if they see no future in their position. To eliminate the feeling of being in a dead-end job, every position should have an individual development plan”.

Participant 7: “Obviously you see, any corporate business owners is expected to implement talent management practices into their business so that it can ensure their company to have a good brand image, by so during enticing future employees will want to be associated with this company”.

Participant 8: “Yes, organizations will improve by developing the ability of all the employees by attracting, developing, motivating, and retaining talent. By so doing there will be an increase in productivity and creating a positive work environment to be recognized, by rewarding the right behavior candidate for the job”.

Participant 9: “um, it all starts with hiring the right people or the right job. This is a human resource issue. Finding and selecting the best people who can not only perform but enrich the organization through managing the talent and development.”

The outcomes demonstrated that effective leadership was essential to the survival of their businesses. However, executives and owners must balance internal dynamics and link human resources to their plans in order to improve organizational performance. It's crucial to implement the desired leadership style such as participative and transformational approaches, but owners and executives believed that to achieve desired results, like inspiring, empowering, and motivating employees; transforming the workplace encourages pleasant interactions between employees and clients for the success of the company.

7.5 The Role of Talent Management Practice

All participants believed that the role of talent management practice in SMEs can be so important in exploring in today’s business environment. Moreover, in developing into the businesses for tomorrow, business owners should develop the HR capability and use the technical know-how of management skills which is more required. So, large organizations have the mindset of having talent at the top of their agenda to achieve their goal. More likely to have higher productivity, and profitability and increase their market value. Here are the comment from each participant.

Participant 1: “ agreed that the role of talent management practice in SMEs is essential for the success of small business firms, by so doing it will create more value to the business and as well as to the employees”.

Participant 2: “stated Yes, the only way that talent management can be of help in the small business in South Africa is by initiatives and cultivate the strategies where more roles are based on the organizational goal,”

Participant 3: “ addressed that um, talent management practice can contribute in the areas of sales skills, marketing, time management, and basic business skills pays a high return, by responding to skills shortages with short-term fixes which is not sufficient, but instead should be addressed in ways that support strategic plans of the business and contribute to long-term business success”.

Participant 4: “Leadership succession planning in talent management will also be a help to the role of talent management as to the businesses to diversify talent by investing early on the high potential talent employees. Mentoring is also an important best practice because it provides the mentor for the opportunity to look at professional growth and development”.

Participant 5: “Yes, evolving talent management offerings, clearly defining career paths, integrating talent management programs across the organization and measuring talent-related outcome”.

Participant 6: “Yes, the role of talent management it can contribute to the SMEs in South Africa by hiring the skilled talent individual, development and motivating them to the standard of achieving the purpose the goal of the company”.

The study finds that in order to ensure the survival of their companies, business owners place a high value on organizational culture and the characteristics of a learning organization. The roles significantly impacted their firms' plans for sustainable personnel management and competitive advantage. These SMEs' owners have developed cultural values that should help them better adapt their strategies for serving new clients, give them the ability to seize and create new opportunities, improve employee skills, value knowledge and its sources, and foster an environment that is innovative and empowering.

8. Discussion of the Study

The findings demonstrated that small business owners and leaders viewed the phenomenon as a real-world challenge that required them to be committed, driven, creative, and decisive in addition to having a clear understanding of the company's objectives. The owners and executives thought talent management, sustainability leadership, and organizational effectiveness culture/structure, other influences, and the notion of a learning organization all had a significant impact on the viability of their companies in South Africa. The main problems are the absence of talented and experienced workers in a company, the difficult working conditions, the underappreciation of management performance, and the dearth of qualified individuals, which severely limits the ability to provide services.

Despite the fact that many business owners always struggle with talent management, doing so is essential to helping them achieve their objectives. As small business executives and owners searched for and seized business opportunities and contributed to the industry's problem-solving, they fostered an environment that will foster their expansion. How do SMEs owners and leaders interpret talent management techniques for sustainability in South Africa? Was the overarching research question created to direct the current study. How do SMEs owners and leaders interpret talent management techniques for sustainability in South Africa? was the overarching research question created to direct the current study. The results showed that small business owners and leaders saw the phenomena as a practical and demanding experience in which they had to be devoted, motivated, inventive, and resolute as well as having a clear understanding of the business's goals.

9. Recommendations

In view of the findings, the following recommendations are made to improve the sustainability of SMEs in South Africa:

- SMEs founders or owners should put in place and implement mentoring programs, and strategize ways to identify, coach, and prepare potential individuals for the futuristic sustainability of SMEs. SMEs founders must keep an open channel of communication, eliminate the barriers to communication and create efficient, participative, and transparent communication with their employees on futuristic continuity plans.
- SMEs founders should establish training programs by establishing program goals, choosing the right training software, and creating useful, personalized, and engaging past founders learning experiences, and seminars, in order to develop the technical, managerial skills, and competency of the employees to prepare him for future succession.
- SMEs in South Africa must embrace the concept of talent management on a regular basis by revisiting their talent identification processes, talent development initiatives, talent retention programs, talent utilization, and reward management systems.

10. Managerial Implications

The managerial implication of the study, failing to comprehend the identified talent management themes and pillars, can hinder successful implementation. Because talent management is not simply an HR necessity but also a business requirement, senior managers must actively participate in the talent management process by making recruitment, succession planning, leadership development, and key employee retention targets. Managers must also be willing to dedicate significant time to these duties, such as participating in departmental recruitment interviews and assisting other talent management stakeholders.

Many authors asserted that the development of talent management strategies for sustainability is influenced by shareholder pressure, which compels businesses to reform. In reality, however, many managers are not aware of the tactics and procedures that could promote sustainability. To successfully implement sustainability, HR professionals must gain a better understanding of environmental concerns and how they relate to talent management practices in an organization. Employees must learn to change their actions and attitudes through emotional appeals to their ideas, desires, and identities. A number of theories and concepts are connected to the framework of talent management strategies for sustainability in SMEs including hiring, employee engagement, training, development, reward system, and communication

11. Suggestions for Further Studies

This study defined talent management as attracting, developing, selecting, retaining, motivating, and transiting talent, hard-to-fill positions talent development, higher position talent development, talent use, and reward management. As a result of this multi-item talent management composition, it is reasonable to assume that other dimensions and related attributes critical to the talent management agenda in businesses were not determined or incorporated in this people management study. The researchers also believe that additional research is needed to evaluate human resource management systems in SMEs concerning talent management initiatives and practices.

12. Conclusion

Implementing an effective talent management strategy may help ensure that the right people are in the right place at the right time and that the company is prepared for the future. Businesses that employ talent management as a robust approach for long-term growth can look forward to a bright future. Talent management is very critical in the sustainability of SMEs. Furthermore, the study assumes a result without talent SMEs will fail. SMEs founders should be at the forefront in providing the necessary support and stimulus for talent management. They should engage their organization and employees in open discussions about talent management and provide training programs to ensure that their potential employees are equipped with the necessary skills, competencies, and knowledge.

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Examining the Influence of Dynamic Capabilities and Personal Entrepreneurial Competencies on Small and Medium Enterprises Cost Efficiency

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Keywords

Strategy; decision making; cost efficiency; managerial competencies; small and medium enterprises.

Abstract

Purpose: There is a growing concern regarding the capacity of small and medium enterprises to remain competitive, owing to the inability to manage the cost side. As such, cost efficiency has become a central strategic factor for small and medium enterprises success. The present study aims to provide small and medium-sized enterprises with a guide on using dynamic capabilities to attain operational efficiency.

Design/methodology/approach: This study used Structural Equation Modelling conducted with the use of AMOS 26.0 to establish the direction and strength of the relationship between variables. This technique is a multivariate statistical analysis that integrates two statistical methods: factor analysis and path analysis. Data was collected using a five-point Likert scale questionnaire targeting small and medium enterprises; 254 were self-administered.

Findings: These results imply that South African SMEs must assess their competencies and dynamic capabilities to maximize cost efficiency. The results support other empirical studies, such as the one conducted in which capabilities and competencies differ from the organisations' performance.

Research limitations/implications: Notwithstanding the academic and practical contributions, the study has limitations. The current research was carried out with geographical and sector limitations. As such, there may be a limitation in the generalisability of the results obtained in this study. In addition, the methodology applied in the current study has its limitations. Other methodologies that can be applied are more robust in determining causality.

Practical implications: Generally, this study's findings offer managerial direction for determining superior cost efficiency. This study's conclusions are useful to managers considering cost efficiency as an engaging strategy. Small and medium firms must improve their sense of appreciation of dynamic capabilities, regardless of what resources they possess

Originality/value: The findings provide empirical support for the theory of entrepreneurship, which proposes that entrepreneurial competencies must be developed for SMEs to increase their chances of reaching the model's appropriation stage – entrepreneurial success. The finding also adds value to the SME operational performance literature related to operational strategy dimensions of product quality, operational flexibility, delivery time and cost-efficiency

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1. Introduction

Most Sub-Saharan African countries are characterised by unrest, political instability, and deadly pandemics, mainly deterring potential foreign investors (Adenle, Manning & Azadi, 2017). South Africa, like other countries, has had a fair share of instabilities and uncertainties, which have affected the inflow of investors and slowed economic growth (Abdelbary & Benhin, 2019). As stated by Magubane (2002:95) “South Africa was dubbed among the "hottest" emerging markets, and attracted lots of foreign investors post the 1994 political change... [it] is losing its appeal as an attractive destination for FDI”. This has much economic responsibility in the hands of locally funded small and medium enterprises (SMEs). SMEs have been applauded for being a “manifestation of a people-driven economy” and for occupying a strategic position in driving national economies (Ismail, Meutia & Ummi, 2019). Besides playing a pivotal role in economic growth, employment creation, and contributing to the gross domestic product (GDP), SMEs now act as the cause of disruption in many sectors. In South Africa, SMEs have positively impacted citizens' socio-economic welfare, which has been widely covered in existing studies (Hamann et al., 2017; Smit & Watkins, 2012; Urban & Naidoo, 2012). Statistics show that SMEs have contributed seventy to eighty percent to the country’s employment output (Balogun, Nazeem & Agumba, 2016; Mathu & Tlale, 2017; Nieuwenhuizen, 2019). The South African government recognises small businesses' role in addressing this crisis, which is partly the reason for introducing programs such as the New Growth Path (NGP) to mitigate against entrepreneurial ecosystem challenges. However, there is a growing concern over the capacity of SMEs to remain competitive, owing to the inability to manage their costs. In line with the dictates of Porter (1983), for SMEs to attain competitive positions and survive in the current turbulent business environment, there is a need to improve on critical strategies such as cost reduction. As such, cost efficiency has become a central strategic factor for SMEs' success.

2. Problem Investigated

Globally, SMEs are confronted with a unique situation where transformation is unavoidable, even though it requires them to focus on cost efficiency to be more sustainable. This has called for a change in the operational strategies employed by these businesses as traditional ones continue to lose relevance (Msomi, Ngibe & Nyide, 2019). To effectively contribute to national development, SMEs need to survive and thrive in turbulent business environments (Edoun & Fotso, 2019). To effectively navigate these environments, SMEs will need to establish and grow their business capabilities in line with the demands of their sectors. Personal entrepreneurial competencies are at the centre of current research concerning their capacity to help firms attain competitive advantage (Nieuwenhuizen & Oosthuizen, 2017). In addition to entrepreneurial competencies, some studies have also investigated the role of business factors such as absorptive capacity (Escribano, Fosfuri & Tribó, 2009), and adaptive capacity (Nguyen et al., 2014) in enhancing SME performance. Literature suggests that some of the major causes of failure by organisations to attain greater levels of profitability include failure to manage organisational resources. Yet, hardly any empirical studies have investigated the relationship between personal entrepreneurial competencies, organisational dynamic capabilities and SME cost efficiency. Most studies aligned to the current study preferably used the RBV in place of the dynamic capabilities. The present study aims to provide small and medium-sized enterprises with a guide on using dynamic capabilities to attain operational efficiency.

3. Research Objectives

The following empirical objective guided the conduct of this research:

- 3.1. To examine the influence of personal entrepreneurial competencies on SMEs’ cost efficiency.
- 3.2. To assess the extent to which absorptive capacity influences cost efficiency among SMEs.
- 3.3. To evaluate the influence of adaptive capacity on SMEs' cost efficiency.

4. Hypotheses

The following hypotheses were formulated for the study:

- H₀: There is no relationship between personal entrepreneurial competencies and dynamic capabilities, and cost efficiency

- H₁: There is a positive and significant relationship between personal entrepreneurship competency and cost efficiency.
- H₂: There is a positive and significant relationship between absorptive capacity and cost efficiency.
- H₃: There is a positive and significant relationship between adaptive capacity and cost efficiency.

5. Literature Review

5.1. Theoretical Framework

The current study is grounded on the dynamic capabilities theory (DCT) of firm competitiveness, which follows the resource-based view (RBV). The RBV argues that “all assets, capabilities, organisational processes, firm attributes, information, knowledge, etc.” (Barney 1991) establish a firm’s competitive position. Modern-day business contexts call for extensive value creation through the calculated use of intangible resources than tangible ones (Russell, 2017). A dynamic capability relates to that organisational ability to efficiently and effectively exploit its resources and simultaneously explore opportunities, thus making it “ambidextrous” (Sollosy, 2013). As an extension, however, DCT believes that to navigate the changing business environment, a business needs to be able to rearrange its internal resources, strategic capabilities, and competencies, to sustain competitiveness (Teece et al., 1997). Teece et al. (1997: 516) define dynamic capabilities as “the firm’s ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments”. The focus on adjusting capabilities and competencies differentiates the DCT from RBV (Laaksonen, O., & Peltoniemi, M. (2018).). Central arguments around the DCT are that wealth creation by business enterprise firms operating in environments of rapid technological change rests on the distinctive processes shaped by how it manages its capabilities and competencies (Teece et al., 1997). In conducting its business, an enterprise will acquire knowledge that it has to manage and exploit for its competitive advantage. The current study is thus a stress test on the DCV of competitiveness by examining how strategic capabilities in managing resources will affect cost efficiency among manufacturing SMEs.

5.2. Conceptual Framework

The study's conceptual framework presented in Figure 1 consists of three predictor variables: absorptive capacity, adaptive capacity, and personal entrepreneurial competence, and one outcome variable, cost efficiency. This conceptual model also guided the development of the hypothesis pertinent to this study.

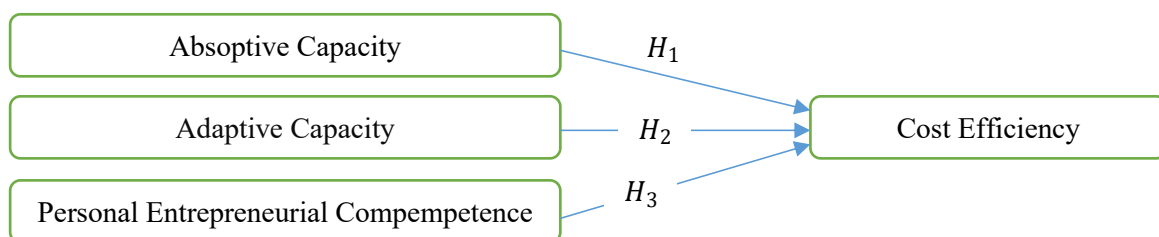


Figure 1: Conceptual Model

5.3. Small Business in the South African Context

In South Africa, the definition of a small business covers the full spectrum of business enterprises to the exclusion of large enterprises and corporations. Although there are several of defining an SME in South Africa, definitions are commonly guided by the number of employees and turnover bands. The National Small Business Act of 1996, as revised in 2003, defines a small business as “a separate distinct entity including cooperative enterprises and non-governmental organisations managed by one owner or more, including branches or subsidiaries if any is predominately carried out in any sector or subsector of the economy mentioned in the schedule of size standards” (National Small Business Act, 1996:2). Nieman and Nieuwenhuizen (2009) believe that small businesses are generally a separate and distinct business that are not of a holdings company and are usually owner-managed. According to the same Act, the quantitative definition states that a business can be classified as an SME based on

the total number of full-time paid employees, total annual turnover, and total gross asset value (excluding fixed assets). The Act further classifies small businesses along the industry sector and its subsectors; size of class such as small, medium, or micro; number of employees; annual turnover; and asset value. The current study focuses on small businesses, specifically those with an independent informal organizational structure.

5.4. Cost Efficiency

The business value propositions will not give a business a competitive edge if they are not done at reasonable costs. Lowering costs ensures that businesses add value and make a profit in the process. Businesses are in the practice of creating, improving, or making things to add value. Adding value is done via the transformation process and has to be done in the most cost-efficient way (Nieuwenhuizen, 2020). Cost efficiency is essential for businesses, as it costs money to deliver quality products or services, and a balance needs to be achieved (Ismail, Meutia & Umami, 2019). Low costs are also a concern for customers, and businesses need to develop their capability to offer services or manufacture products at a low price. Low costs mean that the product can, to some extent, close the gap between customer expectations and, simultaneously, allow a company to make a profit. Cost-effectiveness allows this to happen, as it optimises resources, focusing on lowering costs. An SME, as previously discussed, can adopt cost leadership as a strategy, in addition to the differentiation and focus strategies, to engage the market, as proposed by Tinitis and Fey (2022). Due to SMEs' challenges in the current hypercompetitive environment, companies experience increased demand to control production costs to achieve a competitive advantage (Dunford, Dunford, Barbu & Liu, 2016). Competitive advantage can be achieved by efficiently using resources, whether resource-based or intangible strategic capabilities. Grutter (2010) proposes that businesses focus on low prices as a value-driver strategy. Sarkar (2017) believes that efficiency can be divided into cost- and time-based efficiency. Cost-based efficiency is measured in terms of the costs relating to quality, production changes and manufacturing. In contrast, time-based efficiency relates to delivery speed, manufacturing lead time, and inventory turnover (Sarkar, 2017). The study's focus was on cost efficiency, the ability to produce products or services at the lowest price possible, and investigated how SMEs manage the cost of production, including overhead costs, unit costs, and costs compared to their

5.5. Dynamic Capabilities

As resources alone cannot give a business a competitive advantage, a dynamic approach is needed to be responsive to the challenges of the contemporary business environment. As provided for in the DCT, having a dynamic capability is the ability to build and protect one's competitive advantage in changing business environments (Krzakiewicz & Cyfert, 2017).

5.5.1. Absorptive Capacity

Absorptive capacity defines how organisations adapt to today's ever-changing environment and how they apply previously acquired knowledge to their advantage (Morabito, 2013). Zahra and George (2002:186) define absorptive capacity as a "set of organizational routines and processes" including acquisition (to identify and obtain external knowledge), assimilation (to interpret and understand the information obtained), transformation (to integrate and combine existent knowledge with the newly acquired), and exploitation (the application of new knowledge for commercial ends)". It is a concept closely related to knowledge management and also relates to the ability of a business to respond to the competitive environment, which is crucial for SMEs to perform well and gain a competitive advantage (Gebauer, Worch & Truffer, 2012; Teece, Pisano & Shuen, 1997). According to Teece et al. (1997:552), businesses must avoid the complacency trap and always be responsive and adaptive to the environment to remain competitive. To adapt, dynamic capabilities such as absorptive capacity aid SMEs in adaptation and responsiveness. The study adopted a measurement tool for absorptive capacity from Tavani, Sharifi and Ismail (2014).

5.5.2. Adaptive Capacity

Nowotarski and Paslawski (2015) posited that for an organisation to adapt, it needs to be flexible enough to respond to internal and external dynamic changes. The organisation's adaptive capacity

focuses on how the organisation understands its core competencies and how those directly affect its ability to respond to these challenges (Bateman and Snell, 2013:321). Birkinshaw and Gibson (2004) delineated adaptive capacity as a business's ability to respond to environmental changes and take advantage of the environment's opportunities. Wang and Ahmed (2007) stated that adaptive capacity aligns strategic resources to external challenges. Birkinshaw and Gibson (2004) proposed that adaptability should also be a priority before aligning to the environment for long-term organizational business success. Researchers such as Nguyen, Beeton and Halog (2014) have also reiterated a lack of empirical research on adaptability's role in SME performance, especially in developing countries such as South Africa. Thus, the present study will investigate how adaptive capacity, a dynamic capability, mediates the relationship between personal entrepreneurial competencies and SME operational performance.

5.6. Personal Entrepreneurial Competency

Entrepreneurial competencies differ between entrepreneurs and small business owners (Wagener et al., 2010). Krueger and Brazeal (1994) assert that an opportunity must present itself before there can be entrepreneurship, and the presence of someone with entrepreneurial competencies to take advantage of it is required. Recognising and taking advantage of a chance needs a good development of entrepreneurial competencies. An entrepreneur must be alert to opportunities, as well as resources available to "enable them to recognise gaps" and organise resources to take advantage of them (Zainol & Al Mamun, 2018:6). Several reasons exist that may influence the probability of SME success or failure, including the influence of personal entrepreneurial competencies. Other reasons could include business management-related factors such as environmental factors, cash flow management, and working capital, strategy and succession planning, and knowledge management (Edoun, Mbohwa & Bhila, 2019:2820; Egbu, Hari & Renukappa, 2005:258). These "business factors", namely, dynamic and strategic capabilities, also contribute to business success.

6. Research Methodology

6.1. Research Design

According to Sekaran and Bougie (2016), a research design is a blueprint for the assembly, measurement, and analysis of data based on the study's research question. The research design follows the researcher's formulating of the research question, framed after an extensive literature review. This study followed the quantitative approach using the cross-sectional survey method since it sought to investigate the relationships between different constructs by assessing targeted respondents' views (Creswell, 2013). Likewise, the survey method enables a faster and more convenient once-off collection of data, as well as adequate statistical-oriented analysis of gathered information. It also leads to a better generalization of results across larger scopes of studies (Nardi, 2015). In essence, the research design incorporates all the research elements clearly and straightforwardly. The study will adopt a hypothetico-deductive method as a research method to answer the research question. The hypothetico-deductive approach was developed from an epistemological paradigm. Sekaran and Bougie (2013) state that the hypothetico-deductive approach is a scientific, step-by-step, logical, and rigorous method available to a researcher when trying to find a solution to a problem. The hypothetico-deductive approach was developed from an epistemological paradigm. The epistemological approach of the research will be a deductive, positivist approach.

6.2. Research Sample

The study will focus on SMEs operating in South Africa, and the data will be collected from various available databases, including the Royal Bafokeng Nation Entrepreneurship Development Centre database, the UJ Centre for Entrepreneurship (UJCfE) databases, and the Gauteng Enterprise Propeller (GEP) database. The databases are regularly updated and have a multisector scope, covering retail, manufacturing, construction, tourism, agriculture, and transport. The Royal Bafokeng Nation Entrepreneurship Development Centre in the North West province has a database of 1,631 SMEs covering various businesses from different sectors. The University of Johannesburg's Centre for Entrepreneurship (UJCfE) has 399 SMEs from multiple industries in its database, including entrepreneurs in their programmes funded by the Raymond Ackerman Academy (RAA) and Small Business Enrichment Programme (SBEP). The GEP database has 4,968 SMEs, with 953 being

cooperatives. These databases are maintained by organisations that have an interest in the development of SMEs in South Africa. All the SMEs in the databases constitute a sampling frame, and they are active, can be traced, and the databases are kept current via regular updating. About 1250 indicated their willingness to participate in the study and were each allocated a number ranging from 1 to 1250. The numbers were written on separate pieces of paper in a box in sequential order from 1 to 1250. Afterward, the box was shuffled to ensure the impartiality and randomness of the selection process. Afterward, 700 papers were selected indiscriminately from the box representing the selected SMEs and supplier organizations considered in the study. Data was collected face to face slightly before the 2019 Covid-19 induced lockdowns and restrictions on movement. The returned, fully completed responses for the study came to 280; after data cleaning, the sample size was reduced to 254 participants.

7. Results and Findings

When data analysis was done, it intended to establish the demographic data relating to the research participants. The demographic data were primarily focused on the characteristics of the business entities under scrutiny, from which data relating to research constructs was collected. Information relating to such variables as the business sector, number of years running the currently active business, annual business turnover in sales, and the number of employees was collected and analysed. This information is critical, especially in the research context, as it verified that the intended target population was reached. The results are presented in **Table 1** below.

Table 1: Background and demographic information of sample (N = 254).

Items	Frequency	Percent
Manufacturing	51	20.1
Service	131	51.7
Wholesale/Retailer	25	9.8
Construction	29	11.4
Transport	12	4.7
Other	5	2
Less than 1 year	2	0.8
Between 1 and 2 years	84	33.1
Between 2 and 3 years	83	32.7
Between 4 and 5 years	27	10.7
More than 5 years	57	22.8
R100K–R200K	88	34.7
R201K–R500K	40	15.7
R501K–R999K	53	20.9
R1 million–R5 million	47	18.9
> R5 million	25	9.8

From the results presented in Table 1, it can be observed the majority of the SMEs that participated in the research were in the service sector (51.7%). This was followed by the manufacturing sector, constituting 20.1% of the total participants. Limited participants were obtained from other sectors (2%) and the transport sector, which had 4.7%. Regarding the number of years in business, most participating institutions were between 1 and 2 years of operation. This is in line with the scholarly view that most SMEs do not live beyond two years of operation. The least number of respondents was obtained in the category of less than one year, with 2 participants (0.8%). The income category highly represented was the R100,000 to R200,000 interval, which had 88 participants (34.7%), followed by the R501,000 to R999,000 category with 53 participants (20.9%).

4.1. Measurement Scales' reliability and validity

Prior to the hypothesis testing, confirmatory factor analysis (CFA) was conducted to examine the instrument for construct validity, reliability, and overall model fit. The instrument's reliability was measured regarding the items' Cronbach Alpha and estimated factor loadings (FL). The Composite Reliability (CR), and the Average Variance Entreated (AVE) of each construct were used to measure validity (Forenell & Larker 1981; Anderson & Gerbing 1988). The results of the CFA conducted are presented in Table 2 below.

Table 2: Descriptive statistics and confirmatory factor analysis (N = 105).

Constructs and factors	Mean	S.D.	Factor Loading	CR	AVE
Absorptive Capacity (ABC) (Cronbach's alpha = .792)				0.801	0.501
The general knowledge level of my employees is high	2.10	0.848	.453		
The general educational level of my employees is high	2.42	0.975	.501		
The overall job competence of my employees is high	2.03	0.784	.747		
The knowledge of my employees is adequate to respond to market changes	2.15	0.825	.761		
The knowledge of my employees is adequate when dealing with new technologies	2.26	0.935	.561		
Adaptive Capacity (ADC) (Cronbach's alpha = .740)				0.750	0.502
Our business always is responsive to the changes in the market business encounters	1.83	0.728	.602		
Our business is responsive to the cash flow challenges the market changes	1.89	0.740	.743		
Our business is responsive to the changes in the market by allocating the necessary resources to be responsive to the change	2.03	0.899	.770		
Personal Entrepreneurial Competencies (Cronbach's alpha = .704)				.719	0.591
I am confident that I could deal efficiently with unexpected events in my job	1.66	0.687	.565		
No matter what comes my way, I am usually able to handle it	1.73	0.739	.595		
I consider creativity as one of my stronger points	1.60	0.691	.535		
I am open to new and special ideas	2.05	1.140	.453		
Cost Efficiency (COE) (Cronbach's alpha = .756)				.765	0.557
Our business produces products with low costs	2.17	0.937	.588		
Our business incurs low overhead costs in the production process.	2.24	0.984	.521		
Our cost per unit is relatively lower than that of competitors	2.26	0.977	.851		
Our offer price is as low as or lower than our competitors	2.24	1.027	.699		

In SEM-based studies, the lowest acceptable factor loading is 0.500 (Borroso et al. 2010), of Composite Reliability (CR) of each construct is 0.5 (Hair et al. 2011), and AVE is 0.5 (Urbach & Ahlemann 2011). Regarding Cronbach's alpha, the general rule is that for reliability to be conferred, the alpha values for a construct should be above 0.700. The results show that all the α scores were above the threshold. From the results presented above, all the assessments yielded above benchmark scores. All the factor loadings for the variable items were above 0.5, meaning they all successfully loaded to their respective constructs. The Cronbach alpha values were also above the benchmark and the AVE and CR values. This provided confirmation of the validity and reliability of the instrument obtained.

Table 3: Discriminant validity of the model's constructs on Fornell-Larcker.

Construct	AVE	ABC	ADC	PEC	COE
ABC	0.501	.708			
ADC	0.502	.541	.709		
PEC	0.591	.458	.665	.769	
COE	0.557	.485	.563	.651	.746

NOTE: The elements of the diagonal (bold) are the square root of the variance shared between the constructs and their measures (AVE). The values below the diagonal are the correlations between the constructs.

For discriminant validity to be guaranteed, the square root of the AVE for all items should be greater than the constructs' intercorrelations. As presented in Table 3 the square roots for the AVE were all greater than the inter-construct correlations. As such, reliability and validity were achieved. Confirmatory factor analysis (CFA) was used to further examine the goodness of fit of the model and the model fit the data well ($p < .001$; $\chi^2/df = 2.256$; CFI = .966; IFI = .919; TLI = .941; NFI = .926; RFI = .924; AGFI = .922; and RMSEA = .570). Thus, the CFA assessment indicated the structural models and is suited for hypothesis testing

4.2 Hypothetical test

This study used Structural Equation Modelling (SEM) in AMOS 20.0 to examine the mediating and moderating effects. SEM is a multivariate statistical analysis, and multiple variables in this study can be analysed simultaneously (Tho, 2018). The results of the path analysis are presented in Table 4 below

Table 4: Hypothesis Testing

Hypothesis	Direct Effect	t-Value	p-Value	Decision
ABC→COE	.631	4.562	.000	Supported
ADC→COE	.211	1.158	.000	Supported
PEC→COE	.356	2.168	.000	Supported

The results provided in Table 4 indicate that all three hypotheses were supported at $p < 0.05$. H_1 proposed a positive and significant relationship between personal entrepreneurship competency and cost efficiency. The results show a coefficient of 0.631 and a t-value of 4.562 at a 5% significance level. This shows that the relationship was supported. In the same vein, H_2 stated a positive and significant relationship between absorptive capacity and cost efficiency. The analysis yielded a positive 0.211 coefficient which is in line with the proposition. Lastly, H_3 stated a positive and significant relationship between adaptive capacity and cost efficiency. The results showed a positive and significant 0.356 coefficient, supporting the hypothesis. Absorptive capacity had the most significant impact of the three predictor variables, followed by personal entrepreneurial competencies and adaptive capacity.

8. Managerial Implications

The overall success of any study balances on the ability of its findings to yield practical managerial recommendations. The current study has significant implications for the manager and the entire entrepreneurship discipline. The results also contribute to the literature that supports the importance of dynamic capabilities, especially in mitigating environmental challenges faced by SMEs. The contributions made are both theoretical and practical, as discussed below. This study aimed to assess the relationship between personal entrepreneurial competencies and cost efficiency, grounded on dynamic and strategic capabilities. The results confirmed a statistically significant relationship between personal entrepreneurial competencies and SME operational performance, mediated by absorptive capacity, adaptive capacity and strategic stance. The study contributes to the body of knowledge on operational management, specifically how the proposed operational measures link to SME owners' entrepreneurial competencies. The findings add to the theoretical understanding of the

importance of personal entrepreneurial competencies to SMEs to grow and to which SMEs generally should pay attention. The current study presents meaningful relationships of constructs that precede cost efficiency by investigating the impact of personal entrepreneurial competencies, dynamic and strategic capabilities on operational performance.. Its practical implications have been partly addressed while discussing its hypothesis and objective, although other implications deserve special mention in this section. This study's findings generally offer managerial direction for determining superior operational performance by employing personal entrepreneurial competencies mediated by organisational capabilities. It confirmed the existence of a strong and positive correlation between entrepreneurial competencies and operational performance. SME owners and managers must acknowledge organisational capabilities as an antecedent of superior operational performance. The results contribute to theory in different disciplines, but specifically to the practice of management and entrepreneurship. Owners of SMEs must prioritise personal entrepreneurial competencies, dynamic capabilities, and strategic capabilities as these improve operational performance and will hopefully transform superior performance into competitiveness. These findings demonstrate the emphasis that should be placed on personal entrepreneurial competencies about cost efficiency. When faced with a situation requiring strategic decision-making, firms must not ignore the significance of personal entrepreneurial competencies in selecting the right strategy.

9. Conclusion

The current study was grounded on the personal entrepreneurial competencies, dynamic and strategic capabilities theories, which are linked to SMEs sustaining performance in the environment. Thus, the study contributed to these by investigating and recommending ways SMEs can enhance their operational performance through competencies and capabilities. The findings merit both theories, which are essential for firms to evaluate their resourcefulness, prioritise capabilities development, and adopt strategies to ensure superior performance. Therefore, this study contributes significantly to the underlying variables relating to the entrepreneurial competencies and dynamic capabilities theories that negate the need for resources to compete. Resources traditionally tended to be tangible, and SMEs in the current environment must focus on intangible assets such as competency development and capabilities to sustain themselves in their various industries. Also, as dynamic capabilities theory is an extension of Therefore, this study's conclusions are valid for managers who consider operational performance as an engaging strategy because they are presented with an empirically workable strategy to achieve longevity in performance. Also, members of small and medium firms must improve their sense of appreciation of personal competencies, regardless of what resources they possess. The results back the precepts of personal entrepreneurial competencies, as described in the theoretical grounding.

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Small Business Requirements Of University Business Incubator Services During The Business Life Cycle Phases

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Keywords

SMMEs; small business; business incubator; university business incubator; services; South Africa

Abstract

Small, medium and micro enterprises in South Africa experience multiple challenges, largely affecting their business operations and survivability. Business incubators are increasingly being developed to assist these small businesses in overcoming the challenges and offer areas of support so that these small businesses can be established in a nurtured environment to ensure that they will be sustainable and achieve high levels of growth. For business incubators to be successful, they must offer their services according to the needs of the small businesses as a one-size-fits-all approach would be unsuitable. As such, this study aimed to determine at which phase of the business life cycle the owners/managers of small businesses required the support services offered by university business incubators. The data was collected following a quantitative research approach, whereby judgement sampling was utilised to select 125 small businesses within the Vaal Triangle region. The findings indicate that not all small businesses require the same services throughout their development phases and that some services overlap between the phases. Therefore, it is important that business incubators regularly assess the needs of small businesses to ensure that the correct product offering is presented.

1. Introduction

Small, Medium and Micro Enterprises (SMMEs) are well-known drivers of economic development and sustainability as they alleviate poverty through job creation, stimulate innovation and entrepreneurship and increase competitive economic growth, which is essential for fostering and sustaining global economies (Ellitan, 2021:1004; Fatoki, 2018:1). South Africa, a developing economy, is characterised by an increasingly high unemployment rate of 34,5 percent, which is especially affecting the youth cohort in the country as they are unable to find employment opportunities (Stats SA, 2022). Furthermore, the South African economy has elevated levels of poverty, income inequality and a low economic growth rate (Fatoki, 2018:1). At a national level, the government is promoting the establishment and growth of SMMEs as a mechanism that can reduce the high unemployment rate, stimulate economic growth and development, innovation and competition. Ultimately, the government aims to have SMMEs generate 90 percent of employment opportunities by 2030 (Bhorat *et al.*, 2018:2).

According to Mukwarami *et al.* (2020:491), an estimated 2,2 million formal and informal SMMEs are currently operating within South Africa. Astoundingly, more than 70 percent of SMMEs in South Africa fail to survive and continue in their organisational operations within five to seven years of their existence (Bushe, 2019:1; Ladzani *et al.*, 2011:1461). In addition, it has been noted that 40 percent of new businesses fail within the first year of operation, 60 percent fail within the second year, and 90 percent of SMMEs cease to operate within ten years of their existence (Mukwarami *et al.*, 2020:491). Agbenyegah and Mahohoma (2020:65) highlight that small businesses will only be able to actively participate and survive in a competitive market if their level of performance is acceptable and

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maintained throughout their operations. However, SMMEs in South Africa operate under challenging economic conditions that create an unstable business environment (Fatoki, 2018:2). As such, SMMEs are confronted with multiple issues that ultimately affect their performance and sustainability over the long term (Mlotshwa & Msimango-Galawe, 2020:1).

It is important to understand the challenges SMMEs in developing economies face as developed economies do not experience such high business failure rates (Agbenyegah & Mahohoma, 2020:65). Small businesses are confronted with a hostile legal environment, difficulty reaching international markets, finance and credit, scarcity of organisational skills and access to information, equipment and technology, unsuitable business locations, high levels of crime and inadequate support services (Ladzani, 2012:43; Mlotshwa & Msimango-Galawe, 2020:2; Mukwarami *et al.*, 2020:494). Asah and Louw (2021:2) state that several aspects affect the limitations SMMEs experience relating to finance and credit. These aspects comprise inadequate capital or complications in obtaining credit, inaccurate capital estimations and a lack of knowledge about bookkeeping, high start-up costs, elevated operating expenses, and insufficient profits. Mukwarami *et al.* (2020:494) exclaim that capital is the backbone of a business, and without sufficient access to capital, SMME development and growth will be hindered. However, capital is not only limited to financial support but also intellectual capital, such as business management skills, which is crucial during the start-up phase of small businesses. Van Scheers (2018:168) emphasises that small business owners lack the basic management skills to effectively operate a business, which includes financial, marketing and human resource skills. Furthermore, the managerial skills shortage negatively influences these businesses' success and feasibility, highlighting their need for support services and assistance.

Worldwide, business incubators are recognised as mechanisms that provide support to small businesses so that these businesses can flourish and, in turn, improve the economic development and growth of an economy by increasing employment opportunities (Schutte, 2019:1). In South Africa, business incubators are established to concentrate on improving the success of small businesses, reduce unemployment and generally assist with the challenges encountered by small businesses (Lose, 2021:2). Business incubators offer support to entrepreneurs by providing a nurturing and supportive environment to assist them with the establishment of their businesses (Allie-Edries & Mupela, 2019:72; Leitão *et al.*, 2022:1). According to Hewitt and Janse van Rensburg (2020:1), the goal of business incubation is to offer services to small businesses that will assist them in conquering the challenges that are experienced. Alpenidze and Pauceanu (2019:1) highlight that incubation programmes are specifically tailored towards start-up businesses as it is known that the majority of challenges are encountered during the early stages of the business lifecycle when the business is most vulnerable to failure. However, business incubators are not only developed to support start-up businesses but also support existing SMMEs currently operating in the market (Rens *et al.*, 2021:224; Masutha & Rogerson, 2015:233), irrespective of the development stage in the business lifecycle (Schutte, 2019:3).

It is generally known that an incubation programme consists of three stages. The first stage is the pre-incubation stage. The incubator assists the entrepreneur in developing the business concept and transforming it into a viable business before they become part of the programme. Hereafter, the incubation process follows, and the entrepreneur is offered an array of services that can be utilised to ensure that business success is achieved. The last stage, the aftercare or post-incubation stage, occurs when the business is ready to graduate from the incubator and survive in the competitive market to achieve higher growth levels (Allie-Edries & Mupela, 2019:76; Masutha & Rogerson, 2015:225). Business incubators provide services to small businesses because these businesses struggle to gain access to the services. These services commonly include computer and technology services, accounting and financial services, legal services and office space, amongst other services regarded as being essential to operating a business (Meyer *et al.*, 2016; Alpenidze & Pauceanu, 2019:1). Business incubators offer physical facilities, such as office space, conference rooms, telephone, internet and networking equipment (Allie-Edries & Mupela, 2019:78; Masutha & Rogerson, 2015:225), general business services that includes secretarial services, access to printers and inventory management (Schutte & Barbeau, 2022:4). Moreover, general management and networking services are provided

by business incubators, which includes for example, advice on business plan development, human resource management, advertising and research and development (Masutha & Rogerson, 2015:225; Schutte & Barbeau, 2022:4). Alpenidze and Pauceanu (2019:5) highlight that networking services are essential for businesses as it creates linkages for the successful internal and external operations, such as marketing and legal representation. Business incubators offer financial services, which are of extreme importance for small businesses as the owners most often lack the potential to gain access to funding on their own (Rens *et al.*, 2021:219).

Various business incubators are developed with differentiating purposes and scopes (Allie-Edries & Mupela, 2019:74; Rens *et al.*, 2021:226). Business incubators located within a university, referred to as university business incubators (UBIs), present numerous advantages for entrepreneurs as the university can provide additional linkages to the industry, society and government (Hassan, 2020:2). Foo and Turner (2019:288) state that UBIs aim to transform academic research and innovation into practice, together with enhancing the entrepreneurial activities amongst students and graduates. In addition to the general services offered by business incubators, Hassan (2020:6) highlights that entrepreneurs will have the added services of having access to the university's laboratories and computer systems as well as the advice offered by well-skilled human capital presenting expertise in specific subject fields.

2. Problem Investigated

While the number of established business incubators has recently increased, there is a strong need for them to achieve a level of success. If business incubators fail to be successful, they will not adequately be able to provide the level of services needed to ensure the sustainability and survival of the small businesses incubated (Schutte & Barbeau, 2022:2). Muriithi *et al.* (2018:201) concur, indicating that the success and functioning of business incubators cannot be neglected as there is an approximate 90 percent failure rate amongst incubated businesses. According to Alpenidze and Pauceanu (2019:5), business incubator success can be enhanced if the management of incubators focuses on providing programmes that meet the specific needs of the incubated businesses. Rens *et al.* (2021:232) add that there is a minimal focus given to the vision and objectives of incubated businesses. As a result, the incubators' vision and objectives contradict those of the incubated businesses. As such, Hewitt and Janse van Rensburg (2020:4) highlight that a business incubator should focus on diagnosing the incubated businesses' specific need requirements within the incubation process, where a one-size-fits-all approach is not suitable.

Numerous research has been focused on business incubators internationally and in South Africa (Al-Mubarak & Busler, 2010; Hewitt & Janse van Rensburg, 2020; Leitão *et al.*, 2022; Lose, 2021; Ndabeni, 2008) and UBIs (Flavel & Kalendra, 2008; Foo & Turner, 2019; Lee & Osteryoung, 2004; Todorovic & Suntornpithug, 2008). More specifically, on the incubator best practice (Al-Mubarak *et al.*, 2013; Bergek & Norrman, 2008), incubator services (Abduh *et al.*, 2007; Bruneel *et al.*, 2012; Flavel & Kalendra, 2008), and the critical success factors of incubators (Alpenidze and Pauceanu, 2019; Buys & Mbewana, 2007; Mian, 1997; Verma, 2004). However, minimal research has been focused on determining small business owners/managers' perceived requirements of UBI services over the business life cycle phases.

Considering the above, the objective of this study was to determine which UBI services are required at the various business life cycle phases, namely pre-start-up, start-up, growth and maturity. By determining the precise requirements of small business owners/managers, the management of UBIs can tailor their offerings to ensure that they meet the needs of their incubated businesses, potentially leading to the success and survival of small businesses. Furthermore, this will also provide marketing opportunities for the UBI management as small businesses will be attracted to the offering if it is aligned with their requirements. Thus, contributing to the successful operations of the UBI.

3. Literature Review

Phan *et al.* (2014:788) highlight that a business life cycle describes the developmental phases a business goes through during its years of operations. Petch (2016) adds that in simple terms, every

business transitions and experiences growth and development, which alternatively creates changes in the business's aims, objectives, priorities and strategies. There has been debate on the number of phases a business passes through in its life cycle. According to Krivtsova *et al.* (2020:342), business life cycles are known to have between two and ten phases. The classic business life cycle consists of four phases namely, start-up, growth, maturity and decline (Dempsey, 2018; Krivtsova, 2020:342). However, more commonly, five phases are present in the business life cycle, namely pre-start-up (seed and development; research and development), start-up (launch), growth (establishment), maturity (expansion) and decline (maturity and exit; stability) (Petch, 2016; Pretorius, 2004:294; Timmons & Spinelli, 2009:309). According to Scott and Bruce (1987:45), a business goes through five stages: inception, survival, growth, expansion and maturity, with each phase having its own characteristics. For the purpose of this study, the business life cycle phases will be noted as pre-start-up, start-up, growth, maturity and decline phases.

The pre-start-up phase of the business life cycle is the phase in which the business is considered, and the entrepreneur envisions the idea from a conceptual point of view to obtain funding (Petch, 2016; Pretorius, 2004:294). Timmons and Spinelli (2009:310) state that during this phase, entitled the research and development or nascent phase, the viability of the business idea is examined, and the entrepreneur conducts thorough research to ensure that the idea is feasible. Moreover, the research conducted within this phase is also utilised to determine if any potential challenges might hinder the intended idea from becoming an actual business (Taylor, 2022). Petch (2016) adds that it is important for entrepreneurs to gather as much possible advice and opinions from networks, which may include family, friends, colleagues, business associates or even specialists within the industry, to determine the viability of the business idea. Bridge *et al.* (2003:192) and Petch (2016) indicate that this phase begins when the planning of the business is initiated and is terminated once the business is put into operation. This phase's characteristics are highlighted by recognising the entrepreneurs' business ideas and thoroughly analysing the potential business.

The start-up phase in the business life cycle is one of the most important phases, as this is when the business is put into operation. Phan *et al.* (2014:789) highlight that during this phase, the entrepreneur will primarily be concerned with the marketing and distribution concepts of the business. Bridge *et al.* (2003:200) and Krivtsova *et al.* (2020:342) emphasise that during the start-up phase, the entrepreneur will need to secure capital and finances, support, consumers, suppliers, employees, business premises, information and advice, management skills and infrastructure. Pretorius (2004:294) cautions that entrepreneurs take high risks and experience levels of uncertainty during this phase. Petch (2016) concurs, indicating that this phase is often viewed as the riskiest phase in the business life cycle, and errors made during this phase will impact the business for a long time during its operations.

During the growth phase of the business life cycle, the business is likely to experience an increase in profits (Tendai, 2013:90) and customers (Petch, 2016). Phan *et al.* (2014:789) state that the entrepreneur will consider expanding their business operations by considering the extension of their product and/or service lines, innovation and diversification. The characteristics of the growth phase include an increase in demand, which leads to an increase in sales and larger profit margins (Pretorius, 2004:294; Taylor, 2022). However, this phase is also characterised by an inflow of competition into the market (Petch, 2016; Scott & Bruce, 1987:50).

Once the business has passed through the growth phase, the maturity phase is reached, denoted by stringent competition levels. It is during this phase that the entrepreneurs reconsider their pricing structures and adjust their pricing strategies to match the competition in the market, which often results in a decline in profits (Wang *et al.*, 2013:999). Timmons and Spinelli (2009:310) and Dempsey (2018) state that entrepreneurs aim to achieve stable profitability during this phase. Kuratko and Hodgetts (2007:611) and Krivtsova *et al.* (2020:342) highlight that entrepreneurs are confronted with two options during this phase, the first option is that the entrepreneur can increase the levels of innovation within the business and reach increased levels of profitability, or alternatively, the other option would be that the business will lead to a decline phase, whereby it may cease its operations. Moreover, Dempsey (2018) states that there is potential within this phase for reinvestment to ensure

growth and sustainability, whereby according to Scott and Bruce (1987:51), it may also be that small businesses transition into larger businesses.

The last phase of the business life cycle, the decline phase, is reached once the entrepreneur experiences a substantial decrease in sales that lowers their profit margins. Prevention of this occurrence is challenging as entrepreneurs often miss the onset of this phase and only realise once they are already operating within the phase (Pretorius, 2004:295), or they operate within this phase without knowing (Dempsey, 2018). As such, the decline phase of the business life cycle was not utilised for the purposes of this study.

4. Research Methodology

The target population utilised for this study was defined as any individual that owned or managed a small business in the Vaal Triangle region. This region is situated in the Gauteng and Free State provinces of South Africa and includes the area between the main town of Vanderbijlpark, Vereeniging and Sasolburg. This area was specifically chosen because it has a UBI that services local businesses. To establish the sample frame, businesses within this region were sourced from the Vaal Triangle Info Business Directory (Vaal Triangle Info, 2015). Centred on the number of full-time paid employees, the National Small Business Act (102 of 1996) states that small businesses employ a maximum of 50 employees (South Africa, 1996). Therefore, for the purposes of this study, small businesses are defined as having 50 or fewer full-time employees employed by their business. Based on these criteria, non-probability judgement sampling was used to select 125 small businesses within the Vaal Triangle region.

Based on the literature about UBI services offered, a scale was developed for the structured self-administered questionnaire utilised in this study. The structured self-administered questionnaire included a cover letter requesting participation and indicating the study's purpose, followed by a section assigned to collecting the respondents' demographical and business information required to profile the sample. Two screening questions were included in the demographical and business information section, the first question was to ascertain that the respondent was an owner/manager of a small business, and the other screening question requested the participant to provide the number of employees employed by the business to ensure that the business conformed to the criteria of being a small business. Another section of the questionnaire was included in order to determine the small business owners'/managers' specific UBI service requirements over the phases of their business life cycle. This section included six constructs: physical facilities, general business services, management services, networking and professional services, financial consulting services and university services. The owners/managers of the small businesses were requested to indicate on a scale, ranging from the pre-start-up, start-up, growth and maturity phases, at which phase of their business life cycle they required the services of a UBI. In addition, a 'not applicable' option was included on the scale so that the owners/managers could select the option if they felt that the UBI service was not required at any phase of their business life cycle, or alternatively if they had not reached the specific phase in their business life cycle.

The self-administered structured questionnaire was subjected to ethical clearance. Generally, businesses represent a 'difficult-to-access' population (Berné Manero *et al.*, 2020:121). As such, the researcher followed an unsolicited calling approach to have the questionnaires completed by the owners/managers of the small businesses. The researcher personally visited the small business, explained the study's purpose, and requested participation from the owner/manager. Once the owner/manager of the small business granted permission, the researcher hand-delivered the questionnaire and agreed upon a date for collection, whereby a two-week completion period was granted in most situations. The Statistical Package for Social Sciences (SPSS), version 22, was used to capture and analyse the data.

5. Results and Findings

A response rate of 86 percent was achieved as 108 of the 125 questionnaires were returned and included in the study. Based on the screening questions, the sample only included the

owners/managers of small businesses and businesses that employed 50 or fewer employees. Moreover, 37 percent of the sample was made up of start-up businesses that have been in operation for less than five years, and 63 percent of the sample consisted of established businesses that have been in operation for more than six years. Table 1 represents the demographic information of the sample participants.

Table 1: Sample description

		Frequency (percentage)
Business categories	Auto	21 (19.4)
	Estate agents and property management	21 (19.4)
	Health care and beauty	22 (20.4)
	Hospitality and accommodation	20 (18.5)
	Professional	24 (22.2)
Gender	Male	41 (38)
	Female	67 (62)
Position in organisation	Owner	54 (50)
	Manager	54 (50)
Organisations' age	Younger than 5 years	40 (37)
	Over 6 years old	68 (63)
Number of employees	0 – 19 employees	96 (88.9)
	20 – 50 employees	12 (11.1)

Source: Own compilation

Figure 1 presents the small business owners/managers' results pertaining to their perceived requirements of UBI services during the business life cycle phases. The small business owner/manager was requested to indicate at what phase/s of their business life cycle the UBI service was required for their sustainability. They could select the 'not applicable' option if they did not require the UBI service at any phase during their business life cycle. Moreover, one respondent did not complete the questions about the requirement of UBI services during the business life cycle phases.

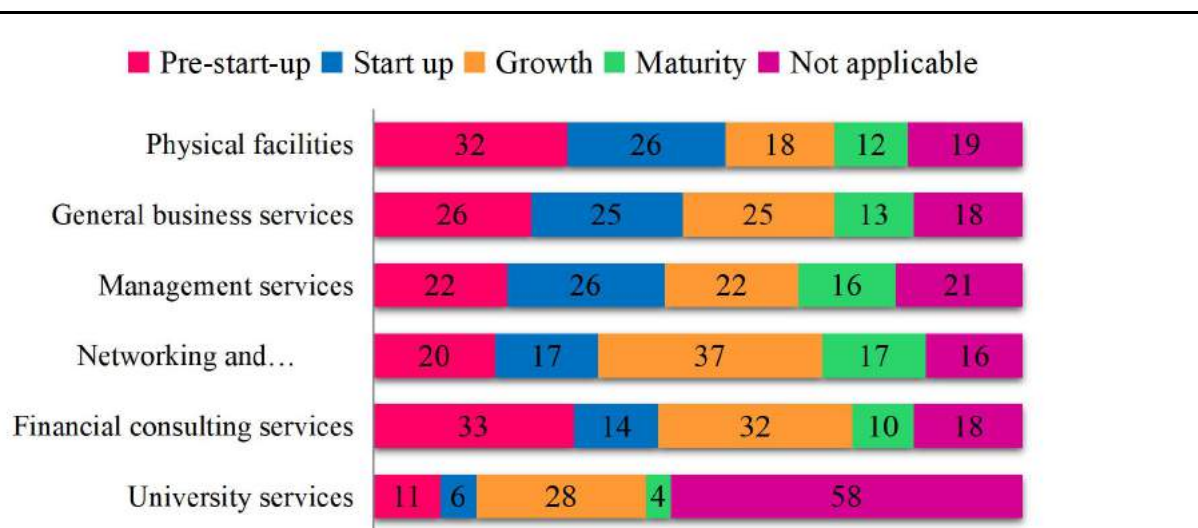


Figure 1: Owners/managers' perceived requirements of UBI services during the business life cycle phases
Source: Own compilation

When considering the business life cycle phases, the results indicate that physical facilities (32 responses) and financial consulting services (33 responses) provided by UBIs are mostly required by small businesses during the pre-start-up phase of business development. Bhorat *et al.* (2018:59) found

that access to finances was one of the major constraints influencing the growth of SMMEs in South Africa. Without sufficient access to finance, small business owners/managers will be unable to consider or start their business operations. Moreover, during the pre-start-up phase, the owner/manager will be required to conduct thorough research into the business idea's viability (Timmons & Spinelli, 2009:310). In order to effectively conduct research, the owner/manager will require the physical facilities of internet and networking equipment, access to a computer and even a telephone. In the study conducted by Bhorat *et al.* (2018:58), it was also found that infrastructure was one of the main constraints hindering the growth of SMMEs in South Africa. As such, the owners/managers of small businesses in South Africa will benefit from the UBI services offered during the pre-start-up phase as they would be able to make use of the services that they previously might not have had access to, enabling them to ensure that the foundations of their business idea is flawless before they begin with the actual business operations.

The owners/managers of small businesses perceived physical facilities (26 responses), general business services (25 responses) and management services (26 responses) as being the most important UBI services required for the start-up phase of their businesses. This is in accordance with the characteristics of the start-up phase of the business life cycle that states that the entrepreneur will need to secure capital and finances, support, consumers, suppliers, employees, business premises, information and advice, management skills and infrastructure (Bridge *et al.*, 2003:200). Moreover, in South Africa, it has been identified that small business owners lack managerial skills, such as financial, marketing, and human skills necessary to operate a business (van Scheers, 2018:168; van Scheers & Radipere, 2008:6). Therefore, the owners/managers of small businesses within South Africa would benefit from the general business services and management services offered by UBIs during the start-up phase as they would be able to gain the knowledge and training required to successfully open and operate their small businesses.

Networking and professional services (37 responses) and financial consulting services (32 responses) offered by UBIs were mostly required by the small business owners/managers during their growth phase. The growth phase of the business life cycle is characterised by an increase in sales, leading to an increase in profitability (Pretorius, 2004:294). As such, small business owners/managers might need assistance with managing their finances and securing investments during this stage, which fall within the financial consulting services and professional services offered by UBIs.

For the maturity phase of the business life cycle, the small business owners/managers did not require UBI services as much as was noted with the previous three phases in the business life cycle. Compared to the sample description, a total of 68 small businesses were over the age of six years. However, as Petch (2016) highlighted, businesses will experience life cycle phases at different stages. Some businesses might not progress through all the phases or even follow the phases in the intended order. Therefore, this indicates that the small businesses included in the sample of this study might not have been in the maturity phase of the business life cycle, suggesting that they could not adequately indicate their requirements for the UBI services offered. From the results, the highest responses were received for networking and professional services (17 responses) and management services (16 responses) offered by UBIs. As noted by the literature on the maturity phase of the business life cycle, the owners/managers are confronted with increasing competition and declining profits. They might even need to consider rejuvenating their operations to ensure survivability. As such, the owners/managers would greatly benefit from established networks, professional and management knowledge, and guidance on their operations during this phase of their business development.

The respondents were given the option to select 'not applicable' for any UBI services they did not require over their business life cycle. From the results, 58 respondents indicated that university services offered by UBIs did not apply to their small businesses, followed by 21 responses for management services. An explanation for this could be that the concept of UBIs is new or unknown to the owners/managers of small businesses. As such, they indicated that the university services were not required as they may not be familiar with the services offered.

6. Managerial Implications

This study aimed to determine at which phase of the business life cycle the owners/managers of small businesses required the support services offered by UBIs within South Africa. The findings suggest a difference in the services required amongst the small business's life cycle phases, as perceived by their owners/managers. As such, the UBIs management could incorporate these findings into their UBI programmes as it will be beneficial to the stakeholders and current and potential incubated businesses if the services are offered at the phase that they are most required. Conversely, by altering the UBI programmes to match the needs of the incubated businesses specifically, greater success could potentially be experienced, which largely affects the success of the UBI itself.

For the pre-start-up phase, the findings revealed that physical facilities and financial consulting services were mostly required by the owners/managers of small businesses. The UBIs can strengthen their physical facilities and financial consulting services offered during the pre-start-up phase of small businesses by ensuring that these services are adequately available to the owners/managers. Moreover, the management of UBIs can also tailor the financial consulting services offered in order to meet the needs of the pre-start-up phase, which might include assistance with gaining access to capital or applying for a business loan. At the same time, more advanced financial consulting services, such as providing advice and guidance on investment possibilities, can be incorporated during the growth phase of the business life cycle. UBIs management should also ensure their physical facilities are up to standard so that they can be provided to the owners/managers of small businesses when they most need it. In other words, the UBI's internet and networking equipment and technology must be up to standard so that it does not cause any frustration to the owners/managers when needed.

The findings suggest that the owners/managers of small businesses require physical facilities, general business services and management services at their start-up phase of development. The UBIs management needs to ensure that these services are available when they are most needed. As such, the UBIs can alter their programmes to ensure that the physical facilities and general business services are mostly available during the start-up phases of the business life cycle. Moreover, management services need to be available during the start-up phase of development, so the UBIs management could consider offering training programmes to enhance the management skills and knowledge of the owners/managers, or the UBIs management should ensure that they have the sufficient capacity to offer the management support needed. For example, the UBI can offer a multi-week training programme on effectively developing and writing a business plan. Alternatively, the UBIs programme can have business consultants to assist the owners/managers with developing their business plans.

The results further indicated that the owners/managers mostly required networking, professional, and financial consulting services during the growth phase. As with the recommendation at the pre-start-up phase, the UBIs management needs to secure financial consulting services relevant to the business life cycle phase. For example, the owners/managers would need investment advice during their growth phase as they experience increased profitability. The UBI's management should tailor the services provided to the needs of the owners/managers as they would be dependent on the UBI to ensure that the proper support is available to provide guidance. Moreover, the UBIs management should ensure a strong network is available to the owners/managers during the growth phase. The network should consist of internal connections made with the university's management, staff and stakeholders, as well as external connections to the state, trade and industry sectors.

The findings on the maturity phase suggest that the owners/managers did not necessarily require the UBI service offerings or had not yet reached the maturity phase of their business life cycle. As such, the UBIs management should continue offering the services at this phase, but to a lesser extent than what is being offered at the other business life cycle phases. In this regard, the UBIs management will focus its scarce resources on the phases in the business life cycle where it is mostly required by the owners/managers of small businesses.

In general, the UBIs could also consider tailoring and marketing their offerings following the phases of the business life cycle. As such, potential clients will be attracted to the UBIs offering if their

businesses are at the current phase of development and encountering challenges that can be combatted through incubation and acceleration programmes. This will generate an increase in clientele for the UBI and increase their success rate as the services provided are tailored specifically to their target market's needs. In addition, UBIs should ensure that their clients and potential clients are aware of their services available.

7. Conclusion

SMMEs in South Africa are experiencing multiple challenges, specifically a lack of resources, business and management skills, access to finance, infrastructure, crime, and supply of basic resources, amongst many others. Business incubators are increasingly being developed to assist these small businesses in overcoming the challenges and offer areas of support so that these small businesses can be established in a nurtured environment up to a point where they can survive the competitive market on their own and achieve high levels of growth. SMMEs are recognised for creating employment opportunities and increasing an economy's economic growth and development. With the assistance of business incubators, SMMEs can be sustainable, and the benefits thereof will enhance the South African economy.

It is clear that not all business phases require the same services and that some overlap. The change in external environments and external shocks, such as the recent COVID-19 pandemic, affect SMMEs, and UBIs should regularly assess the needs of these businesses in order to ensure the correct product offering is presented. The services UBIs can offer can be valuable to local SMMEs, especially those in the nascent and early stages. However, many businesses may not be aware of the services or may feel the service offering is not tailored to their needs. The study highlighted important findings about the different business phases and related UBI services. However, it is not without its limitations. The data were presented descriptively. In this case, we felt this was the best way to present the current data as the aim was exploratory in nature, and we wanted to determine what phase of the business life cycle the owners/managers required the UBI services. In addition, the sample was limited to only a specific region in South Africa; however, this was due to the existence of a UBI in the area. Future studies may include determining if any statistically significant differences between the businesses from the various life cycle phases are present regarding the need for UBI services. A qualitative study will also be done by conducting structured interviews with selected small business owners to determine their needs, challenges and success stories concerning UBIs. In addition, the findings can be compared to other regions or areas that are also services by a UBI.

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The Integration Of Environmental Sustainability In The Firm's Entrepreneurial Orientation Decisions Of Companies In Developing Countries

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Keywords

entrepreneurial orientation; sustainability; environmental; integration; developing countries;

Abstract

Existing economic activity and business practices are contributing to environmental crises especially in developing economies. Despite the growing research interest in entrepreneurial orientation (EO) and environmental sustainability (ES), there is a lack of comprehensive studies that link EO to ES in developing countries. This study explores environmental sustainability in the firm's EO decisions. To meet this aim a systematic literature review of selected articles has been conducted. An integrated framework and dimensions of EO and ES at an individual, firm and national level are presented as findings. This study brings substantial benefits to the development of research on the joint subject of EO and ES by integrating concepts such as entrepreneurship, the environment, and sustainability. Managers in developing countries should incorporate environmental issues into entrepreneurial decision-making. Future researchers should undertake detailed empirical studies on the subject matter of EO and ES since the new construct requires further study for clarification.

1. Introduction

Rapid globalization and industrialization have caused adverse impacts on the environment such as global warming, air pollution, water pollution, and chemical and toxic explosion (Habib et al., 2020). Attempts to address these issues were done through legislation, the promotion of ethical business practices, and currently linking entrepreneurship to the notion of sustainability (Criado-Gomis et al., 2017). The present economic activity has contributed to a serious environmental crisis. Business sustainability is also focused on pursuing economic and social development without damaging the environment (Yusoff et al, 2019). Along with the sustainability, environmental considerations are increasingly contributing to a strategic foundation for decision-making within businesses (Golsefid-Alavi et al., 2021). As, businesses are responsible for many environmental challenges, it can present opportunities for entrepreneurial ventures, towards the development of green entrepreneurship and a business model that takes into consideration profit and environmental protection (Fatoki, 2019).

Recognition of research opportunities about the green entrepreneurial orientation concept can largely contribute to the theoretical development and empirical studies in entrepreneurship and environmental science (Golsefid-Alavi et al., 2021). On the other side, despite the growing interest in environmental entrepreneurship and Entrepreneurial orientation- (EO), not much is known about these concepts (Golsefid-Alavi et al., 2021), particularly on their integration. Accordingly, the scientific nexus of entrepreneurship and the environment disciplines has led to some research work on green entrepreneurship (eg., Fatoki, 2019), sustainable entrepreneurship, sustainable entrepreneurial orientation (SEO) (eg., Kraus et al., 2018), and environmental sustainability orientation (ESO) (eg., Eijdenberg et al., 2018).

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Given the above, the contribution of this study includes; first, despite the growing research interest in EO and ES, there is a lack of comprehensive studies that link EO to ES in developing countries. That is, previous theories in environmental economics and institutional economics did not provide a comprehensive theory that links EO to ES (Sher et al., 2019). For instance, the role of government in the uptake of green entrepreneurship in agriculture in developing country contexts has not been analyzed (Sher et al., 2019). Besides, Golsefid-Alavi et al., (2021) conducted a review of the literature on the nexus of entrepreneurship and the environment is presented and found that none of the existing studies had focused on the concept of green entrepreneurial orientation (GEO) and the factors affecting this concept, which makes the study very relevant. Therefore, this study integrates EO and ES at an individual firm and national level.

Second, it is believed that the effective way to reduce the negative impact of economic development on the environment is the mutual responsibility of large and small firms (Nawi et al., 2020). However, small resource-constrained businesses in developing countries need to be more innovative and creative in developing or integrating environmentally sustainable practices without undermining the economic objectives of their business (Roxas et al., 2017). There is also a lack of empirical studies that compares and contrasts the practices of small and larger firms simultaneously. More specifically, even though authors such as Eijdenberg et al., (2018) conducted their studies on small enterprises, the reasons why small businesses become environmentally sustainable remain poorly understood because the vast majority of business research on environmental sustainability to date tends to draw from the experience of large firms from advanced industrialized countries (Roxas et al., 2017). This necessitates a study that considers both small and larger firms simultaneously as well as all types of institutions since the issue of environmental sustainability is a concern for all types of organizations, societies, and governments. This study is unique in integrating these different aspects.

Third, a major portion of such studies has been contributed by researchers who have been strongly biased toward sustainability and the environment rather than entrepreneurship (Golsefid-Alavi et al., 2021). This study brings substantial benefits to the development of research on the joint subject of EO and ES. Particularly, it integrates concepts such as entrepreneurship, the environment, and sustainability. Thus, the study provides inputs for public policy in developing countries.

2. Problem Investigated

A noteworthy hallmark of many large corporations in the 21st century has been the adoption of environmental sustainability policies to demonstrate care for the environment (Amankwah-Amoah, 2019). Developed countries and international organizations tend to place a greater emphasis on the term “green” and market opportunities, while the developing countries are more focused on the term “entrepreneurship” and the market demands (Farinelli et al., 2011; Golsefid-Alavi et al., 2021). However, to improve circumstances, African least developed countries (LDCs) have increasingly become the subject of sustainability research (Eijdenberg et al., 2018). Besides, greater insights into how EO can lead businesses in developing countries to become more environmentally sustainable should be valuable for managers and should inform the design of public policy in developing countries (Roxas et al., 2017).

Relating to this, a few studies have found a negative correlation between a firm’s ecological engagement and its financial performance, while others have found a positive correlation (Eijdenberg et al., 2018). Besides, there is an overwhelming emphasis on the activities of firms in developed countries on entrepreneurial orientation and environmental sustainability since firms in emerging economies often lack legitimacy and operate under different underdeveloped institutional environments (Roxas et al., 2017; Amankwah-Amoah et al., 2019). That is, empirical evidence and the notions of ESOs and sustainability, in general, come mainly from western societies (Eijdenberg et al., 2018). The shift of manufacturing activities from advanced industrialized economies to developing countries becomes a grave concern given the generally poor environmental standards in many developing countries (Roxas et al., 2017).

Besides, the above gaps, there is no sufficient studies that links EO and ES which leads to the absence of comprehensive and integrated theory in the subject matter. A major portion of this studies also focused on the environmental sustainability side and no sufficient consideration is given to the entrepreneurial side. The previous studies have been conducted in either corporate firms or small firms, however, there is lack of studies that compare both firms in a single research. Therefore, this study tends to fill these gaps by investigating the integration of environmental sustainability in the firm's entrepreneurial orientation decisions in developing countries.

3. Research Objectives

The objective of this study is to investigate the integration of environmental sustainability and entrepreneurial orientation decisions by giving emphasis on developing countries. In line with this objective, the specific objectives are; (1) to analyse the trends of the publications in the subject matter, (2) to develop a dimensions for a new construct of entrepreneurial orientation for environmental sustainability, (3) determining the antecedents and outcomes of entrepreneurial orientation for environmental sustainability.

4. Research Methodology

This section provides the approaches used in conducting a systematic literature review on the nexus between EO and ES including the procedures and techniques for obtaining and synthesizing the data.

4.1. Study approaches and design

We have conducted the systematic review based on the criteria of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines and a diagram that helps to illustrate the records identified using the search engines. To ensure transparency, rigor, and objectives of the study, we adopted the method suggested by Tranfield, Denyer, and Smart (2003). Following this method, we started by identifying the review questions and setting conceptual boundaries.

4.2. Review scope and search strategy

The review scope was determined by experts and reviewers from different fields such as management and environmental science by discussing the relevance of the review. The review scope was established by identifying themes based on the suggestion from experts and reviewers' experience. Next, we established the conceptual boundaries by determining key terms. The third step was the determination of the review scope, which is established by specifying the inclusion and exclusion criteria. That is, in terms of limiting the articles to be included in the review, only peer-reviewed journal articles were considered. Further, we have focused on the articles that study the relationship between EO and ES.

The stages followed in the search strategies include, first, checking the availability of systematic reviews in the subject matter of the nexus between EO and ES to avoid duplication of papers. Then, the independent experts assessed the suitability of peer-reviewed scholarly works and found it relevant to provide comprehensive scholarly work on this critical issue. This was followed by establishing the keywords and searching on the Google Scholar (GS) in full primarily since the study is multidimensional. Two reviewers who are experts in the field compiled a list of articles and independently screened the title and abstracts identified. The reasons for exclusion and inclusion criteria were documented and provided on the flow chart of study selection based on Preferred Reporting Items for Systematic Reviews. Those articles deemed relevant based on title and abstract proceeded to full-text analysis. If a discrepancy existed between the two independent reviewers/authors, it was resolved by discussing it with the third author. That is, the third independent reviewer appraised the quality and suitability of the selected articles. Later, each stage followed in the selection process was outlined in a PRISMA flow chart. Besides, the process has been evaluated against the 27-item PRISMA checklist.

Based on the conceptualization of the variables, we have identified the keywords such as entrepreneurial orientation and environmental sustainability. The independent reviewers participated in determining the keywords and synonyms words. First, the term EO and ES is searched

independently and next the keywords are associated to create a combined search. The search was conducted using the entries such as “entrepreneurial orientation” OR “entrepreneurial intention” AND “environmental sustainability” OR “green environment” AND “developing country” OR “developing economy”, combining them with the terms ‘green’ and ‘sustainability’. Besides, we performed a secondary search through the references list and citations. References of the articles identified in were examined order not to miss relevant publications.

4.3. Study identification, screening, and selection process

Following the search results, both inclusion and exclusion criteria were used to select the appropriate articles from the database. Based on the inclusion criteria, only peer-reviewed articles written in the English language were considered. Since only a few articles from, before 2010, were found, the review limited itself to articles published after 2010. The review team felt that a 15-year data was sufficient to uncover the early root of studies around entrepreneurial orientation and environmental sustainability. Other sources such as books, book chapters, conference papers, and articles in non-reputable journals were not considered. Later, by excluding conceptual and review articles, we considered only empirical studies. Then, a three-stage screening process was undertaken. These included manually excluding duplicates, manually screening titles and abstracts, and assessing eligibility based on full text. Finally, the full-text articles were evaluated based on the presentation of validated knowledge, quality and rigor, theory robustness, practical implications, appropriateness of methodology, data, and contribution to knowledge as espoused by Phillips et al., (2015).

4.4. Data synthesis and analysis

A synthesis was made to obtain necessary findings related to the EO and ES to build a comprehensive big picture by focusing on the relevant and necessary ideas. We used the narrative synthesis to combine the findings from the selected articles and to thematically establish the relationship. The themes and sub-themes are constantly revised and compared to avoid potential conceptualization conflicts. Besides, a ‘cross-study syntheses was made by comparing and contrasting all the studies based on the key themes (Zahoor & Al-Tabbaa, 2020). Based on the previous studies, a theoretical framework was developed from syntheses of previous models, theories, and dimensions. Four major domains/dimensions were established.

For analysis, a qualitative research method is used to analyse and discuss the theoretical aspects related by comparing and contrasting the logic and arguments of different scholars to provide conclusions based on the synthesized arguments. To do this, we created a summary table in Microsoft Office Excel 2016 and listed out information used for analysis. Some of the information extracted from the selected paper and included in the created excel table are the name of the author, name of journal, area of study, field of study, study unit, approaches of the study, major variables under study, objectives of the study, and key findings. Later, we employed a thematic analysis to provide an overview of the subject matter and determine the established relationship between the themes. The review theme specified the themes of the subject matter based on prior experience. Later, the identified theme was developed into a framework for analysis.

To ensure quality, there are articles dropped because no sufficient background was provided, the methodology was not discussed, and/or analysis lacked details. The quality concern was minimized by including only peer-reviewed articles.

5. Results and Findings

The following section provides the major findings from the existing literature and is used to build dimensions and show the antecedents and consequences of the variable “entrepreneurial orientation for environmental sustainability” (EOfES).

5.1. Descriptive results

The following figures show the descriptive results of the sixteen selected articles. That is, publishing journals, level of analysis, countries of study and field of study.

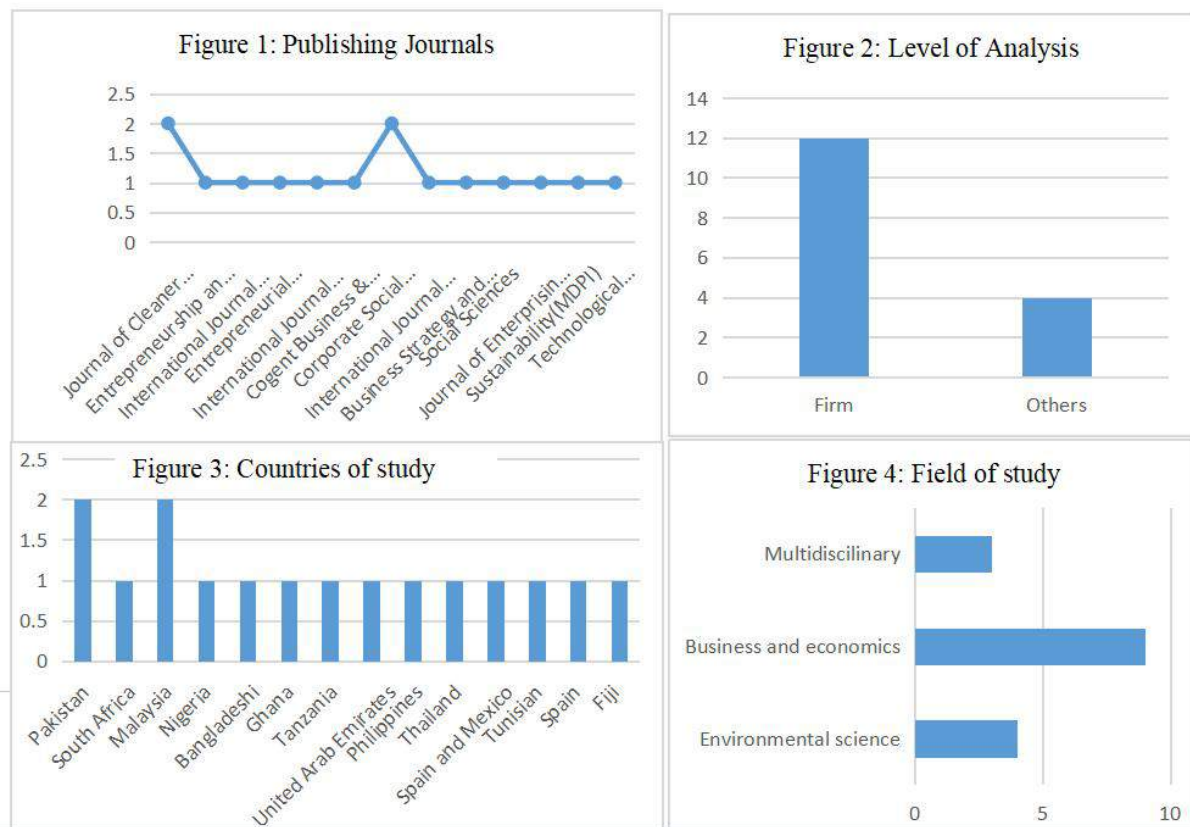


Figure 1 revealed that among the sixteen selected articles Journal of Cleaner Production and Corporate Social Responsibility and Environmental Management published two articles each. The remaining journals have published one article each.

Figure 2 revealed the unit of analysis in which the study is conducted. The figure shows that fourteen of the studies were conducted at the firm level. This indicates that the subject of EOofES is directly related to the responsibilities of the enterprises since most of the studies are conducted at the firm level. Four other articles were conducted at the industry level, on farmers, informal vendors, and at the country level. Figure 3 revealed a country-wise analysis, which indicates two studies from Pakistan and Malaysia. Finally, figure 4 shows that most of the studies are related to the discipline of Business and Economics followed by Environmental Science.

5.2. EO & ES Dimensionality

Various studies deliberate the concepts and practices of environmental sustainability orientation (ESO) (e.g., Kirkwood and Walton, 2014; Eijdenberg et al., 2018) and sustainable entrepreneurial orientation (SEO) (e.g., Kraus et al., 2018). However, there is a necessity to consider the specific issue of ES in entrepreneurial decisions. Accordingly, EOofES is categorized as a new construct that integrates the ES decision to EO. In this regard, previous research revealed the EO dimensions are importantly applied to the ES.

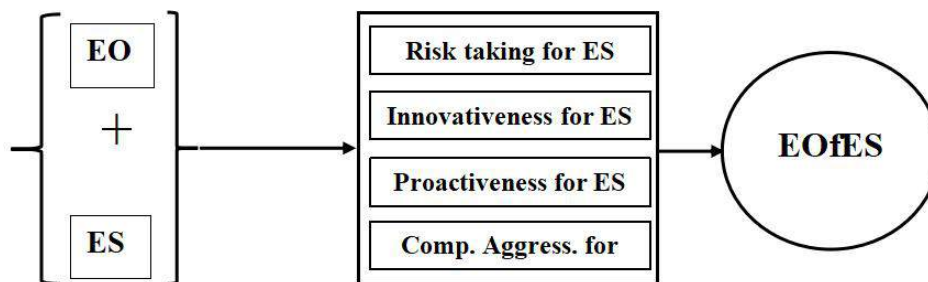


Figure 5: Dimensions of entrepreneurial orientation for environmental sustainability

Entrepreneurship and the natural environment were thought to be incompatible by economists, however, lately, management researchers have found out that the two concepts can play an important role in modern economic development (Fatoki, 2019). This leads to the formation of a new construct EO for environmental sustainability (EOfES). This is because, the association between strategic orientations as intangible and valuable resources that give rise to a firm's economic and environmental sustainability is explained under the premises of Resource Based View (RBV)(Nawi et al., 2020). This is through establishing and linking the strategic and entrepreneurial orientations to sustainable success considering the environment. This concept is not limited to enterprises (eg., Roxas et al., 2017), but also to individuals (eg., Eijdenberg et al., 2018) and governments (eg., Amankwah-Amoah et al., 2019). For instance, Kangogo et al., (2020) incorporate farmer EO as a factor influencing farmer investment decisions on climate change adaptation strategies. This opens further discussion on this new construct of EOfES. That is, organizations (both government and non-government) should link their business decisions to the concerns of the natural environment, while the individuals need to develop a positive attitude toward environmental concerns. This will be done through interlinked decisions integrating the natural resource aspects in the organization's system and activities in line with entrepreneurial pursuits. This includes awareness creation among the individual participants to get a better commitment.

Particularly, the different dimensions of EO such as proactiveness (Roxas et al., 2017), innovativeness, risk-taking, and competitive aggressiveness are directly linked to environmental sustainability. This necessitates the strategic linkage of the EO dimension to ES by creating a positive entrepreneurial mindset towards eco-friendly productions and environmental conservations. This is supported by the ecological modernization theory that considers both entrepreneurship and environmental issues. Also, the natural RBV extended from the RBV considers the issues related to both entrepreneurship and the natural resources. There are several concepts related to entrepreneurship and environments, including SEO, sustainable entrepreneurship, sustainability orientation (SO), and ESO. However, in all the above perspectives sustainability is not limited to the environment, but also includes the social aspects as a part of the triple bottom line. Therefore, integrating the EO to a particular aspect of ES has paramount importance to determine the specific contributions. Accordingly, engagement in entrepreneurial activities needs consideration of environmental problems in particular. That is, the individuals' and firms' strategic decisions should broaden the scope of their goals toward the natural resource preservations.

5.3. Antecedents and outcomes of EO for ES

The construct EOfES strategically links the various variables related to both EO & ES. These include the linkages with variables, such as; stakeholder (Nawi et al., 2020; Roxas et al., 2017), financial (Roxas et al., 2017; Eijdenberg et al., 2018), business plan or strategy (Amankwah-Amoah, 2019; Roxas et al., 2017), entrepreneurial mindset (Criado-Gomis et al., 2017; Eijdenberg et al., 2018), dynamic capabilities, the structural character of environmental issues, industrial activity, economic growth (Criado-Gomis et al., 2017), recycling materials (Eijdenberg et al., 2018), culture, firm performance, awareness creation, public policy, decision making and business operations (Roxas et al., 2017), social responsibility (Fatoki, 2019), business models (Fatoki, 2019), regulations and laws (Amankwah-Amoah et al., 2019), competitive culture (Kraus et al., 2018), triple bottom line (Eijdenberg et al., 2018; Criado-Gomis et al., 2017).

Based on the few studies that have been conducted in the context of developing countries, enterprise owners need to be motivated to have certain ESOs (Eijdenberg et al., 2018). Particularly, the practices of EOfES require firms and individuals to engage in strategy development that integrates the activities of business modeling, financial budgeting, firm operations, organizations' internal structuring, and business decisions that consider the environmental problems through building dynamic capability. This includes reconfiguration of the overall organizational systems and practices in line with environmental protection and conservation. Besides, there is a necessity to build a strong culture, an entrepreneurial mindset, and ethics toward environmental protection through creating awareness of

EOfES. The overall integration of these operations gives firms competitive advantages. Further, it is linked to the stakeholders, public policies, social responsibilities, and economic growth.

The antecedents and outcomes from the new construct of EOofES are taken from the practices of individual environmental entrepreneurs, organizations, the general public, and governments at different levels. At the individual level, possessing and skilfully employing ESOs is one of the routes for subsistence entrepreneurs to better (personal) circumstances (Eijdenberg et al., 2018). This means that individual entrepreneurs should play a substantial role as environmental protectors since individual human beings are the main cause of environmental problems. They have to take part in alerting the general public about environmental concerns and participate in environmental protection activities within their communities. They should be at the forefront of promoting environment-related government policies and legislation.

At the organizational level, studies conducted in developing countries indicate that both government and non-government organizations are engaged in environmental conservation. The modern organization in developing countries should include practices of ES in their entrepreneurship-related strategic decisions. For instance, through the lens of institutional theory, the entrepreneurial orientation is introduced as an important driver of the green management of companies in emerging economies (Golsefid-Alavi et al., 2021). Golsefid-Alavi et al., (2021) revealed that the integration of environmental issues into strategic plans is important since companies with high levels of ESO tend to carry out a wide range of activities to reduce the negative impact of their businesses on the environment. Research on EO literature in a sustainability context found that firm-level entrepreneurial orientation increases the probability that such a firm develops pollution prevention capabilities (Grobeck et al., 2012). Roxas et al., (2017, p??) also added that “the deliberate actions of small businesses who are passionate about the environment have been identified as the main catalysts for embarking on environmental sustainability initiatives”. Given this fact, at the firm level, the integration of environmental aspects to the firm’s entrepreneurial decision and philosophy has paramount importance in the protection of the natural environment. This means competitiveness, as well as profitability, would have been integrated into environmental sustainability through producing environmentally-friendly outputs. There is a need, therefore, to include environmental issues in the company’s purpose, business models, regulations, operations, and other strategic decisions. However, in the developing country context, CSR is heavily influenced by the institutional environment, such as investors, the media, and international regulatory bodies (Eijdenberg et al., 2018). This necessitates the integration of different parties in the protection of the environment in line with the business practices.

Government intervention and support is another crucial element that strengthens the practices of EOofES at all levels. Government support, such as granting subsidies for providing environment-friendly services and immaterial mechanisms such as activating interactions between environmental entrepreneurs and other key players is needed (Golsefid-Alavi et al., (2021). Given the high environmental deterioration, governments are developing policies and procedures that motivate positive conservation of the environment. This includes activities related to supporting environmentally-friendly ecological sustainability-related activities, promoting green economic practices, ensuring social responsibilities, and setting environmental sustainability-related policies. Furthermore, the government and its agencies have to play a crucial role in creating awareness among the society and changing people’s mindset toward the environment.

Previous studies conducted in developing countries indicate that at a certain level of economic growth, an increase in per capita income can lead to reductions in environmental pollution (Iqbal et al., 2020), while others found a positive relationship between green entrepreneurial orientation (GEO) and financial, environmental and social performance (Fatoki, 2019) as well as GEO and market orientation, GSCM, and all the dimensions of the triple bottom line (Habib et al., 2020; Gomis et al., 2017). According to Ahmed et al., (2020) ecological innovation, EO, and entrepreneurial self-efficacy enhance energy efficiency and environmental performance. Similarly, Khalid, et al., (2020) indicates that an environmental strategy, entrepreneurial innovation, and EO are the key contributors to energy

efficiency and environmental performance. Particularly, EO can improve sustainable development (SD) engagement (Ayuso, 2017) and provides better environmental sustainability that will bring superior performance (Roxas et al., 2017). Besides, Onwe,., Ogbo., & Ameh, (2020) and Adomako ., (2020) found a hostile environment motivates firms to adopt EO, which ultimately improves their performance. However, Eijdenberg et al., (2020) revealed that performance was minimally affected by ESOs. Moreover, intrinsic and extrinsic religiosity improves environmental sustainability attitudes (Singh et al., 2021).

From the above arguments related to antecedents of EOfES, one can summarize that the adoption of green entrepreneurial orientation, entrepreneurial innovation, and an environmental strategy will convey improved efficiency and performance in terms of financial, SCM, market, environment, as well as social aspects. On the other side, the environmental problems will be increased with the growth of the economy, increasing per capita income, and the presence of environmental hostility. More specifically, the existence of a turbulent environment such as climate change, natural resource degradation, toxic explosion, and environmental pollution, initiated by individuals and firms to engage in entrepreneurial activities takes these concerns into account. This leads to the emergency of EOfES concept which will be practiced by companies. This new integrated concept has been associated various determining factors and leads to the emergency of many outcomes.

In summary, these factors can be categorized into individual, organizational, societal, and governmental levels. Among the reviewed studies, most are conducted at the organizational level and focused on firms' EO towards the environmentally-friendly activities. The practices here include; ensuring CSR, recycling wastes, promoting environmental innovation capabilities, producing environmentally friendly products, engagement in sustainability orientation, making environmental issue a part of competitive advantage and performance, and reducing environment polluting activities. In this regard, there are determinants of EOfES including; firms capability, firms orientation towards market, customer and innovation, green investment, adoption of clean technology, managerial cognition, GSCM, organizational culture, customers and competitors reactions, and strategic motivations. On the other hand, the possible outcomes are good performance, superior competitive advantage, improved efficiency, product and process innovation, sustainable growth, green supply chain development, and exploited opportunities.

At the individual level, the determinants of EOfES are individual's religiosity, attitudes, and environmental consciousness, while at the government and societal level, there are macro level activities such as environmental awareness creation, environmental friendly product purchase commitment, creating environmental conscious society, developing pro-environmental policies and regulations, which will happen through the joint actions with different stakeholders such as industries, NGOs, the general public, and researchers. Given these inputs the outcomes are, improved environmental performance and social responsibility, improved culture towards the environment, and conserved natural environments.

6. Future Research Implications

Regarding future research, first, there are only a few empirical studies on this topic, identified in developing countries. Therefore, the future researchers should undertake detailed empirical studies on the subject matter of EOfES since the new construct requires further study for clarification. Second, even though the term technology is included in the search along with other topics, we are unable to find the study that integrates EO and ES with technology. Therefore, the future researchers should conduct study on EOfES by integrating with technological aspects. Third, there is also a need to link the EOfES to concepts such as corporate social responsibility, market orientation, innovativeness, and firm's performance. Finally, future researchers could further advance the topic by widely applying content and bibliometric analyses.

7. Conclusion

The EOfES categorized as a new construct that integrates the ES decision and the EO. In this regard, previous researches revealed the EO dimensions are importantly applied to the ES. Individuals' and

firms' strategic decisions should broaden the scope of their goals towards the natural resource preservations. The overall integration of these operations will likely give firms competitive advantages and better performance. Further, the approach has linked to the stakeholders, public policies, social responsibilities, and economic growth. Thus, greater insights into how EO can lead businesses in developing countries to become more environmentally sustainable should be valuable for managers and should inform the design of public policy in developing countries (Roxas et al., 2017). Since environmental issues are of a greater concern, managers should try to incorporate them in their entrepreneurial decision making. Governments in developing countries should also provide incentives for environmentally friendly companies.

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Appendix

Author & year	Objectives	Study Variables	Findings
Iqbal et al., 2020	Linking environmental responsive entrepreneurship with sustainable development through empirical evidences from developing country.	Sustainable entrepreneurship and environmental pollution:	At a certain level of economic growth, a 1% increase in per capita income can lead to reductions in environmental pollution by 2.88%, 4.54%, and 2.48%.
Fatoki, 2019	To investigate the impact of green entrepreneurial orientation (GEO) on the sustainable performance (SP) of firms in the context of the hospitality sector.	Environmental performance (EP); Financial performance (FP); Social performance (SP); green entrepreneurial orientation (GEO)	The results indicated a significant positive relationship between green entrepreneurial orientation (GEO) and financial, environmental and social performance.
Ahmed et al., 2020	To analyze the ecological aspects of them by identifying the relationship of ecological innovation, ES and entrepreneurial self-efficacy in affecting a firm's energy efficiency and environmental performance	Ecological Innovation, EO, Entrepreneurial Self-Efficacy, Environmental Performance, & Energy Efficiency	The findings ensure that the ecological innovation, EO, and entrepreneurial self-efficacy are the key contributors to enhance the energy efficiency and environmental performance of SMEs in Malaysia.
Onwe, C., Ogbo, A., & Ameh, A. (2020).	Investigating effect of environmental hostility towards the relationship between EO and the performance of small firms in Nigeria to determine the.	Entrepreneurial orientation, firm performance, & environmental hostility	There is no significant relationship between EO and firm performance, however, a hostile environment motivates firms to adopt EO, and ultimately improve their performance.
Khalid, et al., 2020	Investigating the link between entrepreneurial attributes, strategic capabilities, & environmental nexus in Malaysian manufacturing firms.	Environmental Strategies, Entrepreneurial Innovation, EO, Firm Environmental Performance, and Energy Efficiency	The environmental strategy, entrepreneurial innovation, and EO are the key contributors to enhance the energy efficiency and environmental performance of multinational firms in Malaysia.
Habib et al., 2020	Examining the impact of GEO and market orientation on the implementation of green supply chain management practices and subsequent sustainable firm performance. Further, it identifies the mediating factor between GEO and sustainable firm performance.	GEO, market orientation, green supply chain management, sustainable firm performance	GEO has a significant positive influence on market orientation and GSCM practices, which ultimately positively effects on all the three dimensions (economic, environmental, and social) of sustainable firm performance. Also, GSCM practices partially mediate the relationship between GEO and firm
Sher et al., 2019	The study aimed to investigate barriers in the adoption of green entrepreneurial farming in Pakistan.	Training & development, EO, Market orientation, Customer orientation, Innovation orientation, & Green supporting supplies related barriers.	20 critical barriers are grouped into six major categories and the most dominant barrier among six groupings was training and development-related barriers and the marginal role of government in the provision of such endeavours.
Adomako S, Nguyen NP, (2020)	Drawing on the resource dependency theory, it examines the impact of interfirm collaboration on CSR expenditure. It also examine EO as a moderator of the relationship	Interfirm collaboration, CSR, Expenditure, EO, Market turbulence	Results from our empirical analyses reveal that interfirm collaboration positively impacts CSR expenditure and this relationship is strengthened when entrepreneurial orientation is greater in turbulent environments

Eijdenberg et al., 2020	Investigating the extent to which performance and environmental sustainability orientations (ESOs) are developed, as well as their association, in a typical impoverished community: the informal economy of LDC.	ESO, performance, Age, Gender, level of education	A significant distinction can be made between basic and advanced performance. There is significantly higher levels of awareness of ESO practices that are intangible and are not fully within their control than the personal tangible ESO practices. However, performance was minimally affected by ESOs.
Zahoor, N. & Lew, YK. (forthcoming),	This study examines the influence of strategic orientations and dynamic capability on the sustainable international performance of (SMEs).	EO & alliance orientation (AO) facilitates dynamic capability and, in turn, the sustainable international performance of SMEs	The study finds the significant effects of the interaction between EO & AO on dynamic capability. Dynamic capability mediates the interactive effect of EO & AO on international performance.
Roxas et al., 2017	The main objective of this study is to investigate the effects of EO on ESO and the consequent effects on the performance of small businesses in a developing country context.	EO, ESO, and Performance,	An entrepreneurial strategic orientation enables to develop a more proactive stance toward environmental sustainability practices which lead to superior firm performance.
(Smes, 2021)	The role of the automotive parts industry is crucial in minimizing environmental degradation and promoting sustainable development.	GEO; green innovation; economic performance; environmental performance; social performance	Green innovations have the strongest influence on economic and environmental performances.
Ayuso, 2017)	To shed light on the relationship between entrepreneurial behaviour and commitment to sustainable development (SD)	SD; CSR; EO; internationalisation;	EO is positively associated with SD engagement, particularly regarding the environment, human resources, and community involvement.
Tounés et al., 2020)	To study environmental intention of owner-managers through a multidimensional concept rarely mobilized in the environmental field, namely, EO	environmental intention; entrepreneurial orientation; textile-clothing industry	Textile-clothing industry, which is the source of significant amounts of water and air pollution and is among the priority industries designated by the Tunisian state as part of an environmental improvement program in 2014
Gomis et al., 2017)	Proposes SEO as a multidimensional construct that offers researchers the possibility of empirically testing their theoretical proposals in the sustainable entrepreneurship field	Sustainable entrepreneurship; strategic orientation; SD; dynamic capabilities; multiple orientation; organizational predisposition	SEO's nature is conceived at a firm-based entrepreneurship level and is based on an integrated triple bottom line sustainability
Singh et al., 2021)	Study aims to explore the environmental sustainability intentions of family-owned businesses in Fiji	Family-owned business Theory of planned behavior Religiosity Environment sustainability	The empirical results showed that intrinsic and extrinsic religiosity positively influence the attitude of family-owned businesses toward environmental sustainability

Where To Do Business In South Africa

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Keywords

Business location, local economy, Chambers of Commerce, Index, Geographical Economics, Principal Component Analysis

Abstract

Doing business in South Africa is challenging in many ways and recently the deterioration of infrastructure and services provision at the local level have come to influence business location decisions. This paper sets out to build an index that describes the factors that determine the competitive advantages of local economies. This idea is inspired by UNCTAD's Foreign Direct Investment (FDI) Potential Index for countries, but linked to the theories of Geographical Economics and applied at municipal level in South Africa. Principle Component Analysis is used to combine measures of the size and sophistication of the local economy, the local business and government institutions, and the broad macro forces that influence it all. We call the result the *Where to do business (WTDB) index*.

1. Introduction

Economic activity does not take place on the featureless plains of macroeconomic models. It is unevenly distributed across South Africa and the world. Producers and consumers choose to locate in specific places. In South Africa, a big part of the discourse about local economies is currently about the deterioration of infrastructure and public services provision across South Africa. That is an important part, but only a part of the factors that determine the choice where to do business.

1.1. Problem Statement

This paper sets out to build an index of where to do business in South Africa. It builds on insights from the Geographical Economics literature that describes the factors that determine the competitive advantages of places. Local institutions matter as well, and the paper adds a specific focus on the role of local business networks.

1.2. Method

The empirical method for constructing the index is principal component analysis. The *Where to do business index* is calculated at the local municipality level and the data are sourced from HIS Markit's REX database. For all the observations the latest available year is 2021.

1.3. Outline

The structure of the paper is as follows. Section two gives a brief overview of the Geographical Economics literature that provides the basis for the empirical work that follows. Section 3 explores the role of organised business in local level institutions and how Chambers of Commerce can contribute to the competitiveness of a local economy. Section 4 presents a description of the data and factor analysis used to construct the *Where to do business index*. Section 5 concludes.

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2. Review of the classic Geographical Economics literature

Geographically, economic activity tends to be unequally distributed and concentrated. Similarly, economic growth rates vary significantly between localities. To examine this, one should distinguish between concentration, specialisation, and agglomeration of economic activity.

Specialisation examines a region or locality's economic structure. As Brakman *et al.* (2001:131) put it, it is the question of whether or not a location's share in the production of cars or apparel is relatively large to the share of other locations in the production of cars or apparel. In contrast, concentration and agglomeration refer to the question of how economic activity as a whole (a specific industry or the whole manufacturing sector) is distributed across space. In this the distinction is a matter of degree. Concentration considers a few well-defined sectors and agglomeration considers the location across space of a much larger part of economic activity, for example the manufacturing sector as a whole (Brakman *et al.*, 2001:129). Thus, explaining the spatial distribution of economic activity, and the determinants of the growth of economic activities across different localities, is about explaining agglomeration.

When the Geographical Economics literature argues that geography matters for agglomeration and growth, it is not only so-called first-nature geography that is important. The analysis goes beyond climate, disease, burden, or distance. Explanations of the ways that economic agglomerations are formed appeal to nature (the unevenness in the distribution of resources), to non-market institutions (such as externalities that give rise to endogenous spatial inhomogeneities), as well as to imperfect competition (Fujita & Thisse, 2002:45).

Porter (1998) linked the ideas of first-nature geography, external economies, distance, and market size with an emphasis on competitiveness leading to growth. He argued that globalisation has changed the importance of the location of production in space. National and international markets for factors are more efficient and competition is less factor intensive. Modern, flexible technologies are often less scale-intensive and are coupled with outsourcing and close relationships with suppliers. There is earlier access to huge foreign markets. This has diminished the importance of factor endowments and the size of local markets. Porter (1998) argued that location now affects competitive advantage through its influence on productivity and productivity growth. This occurs within the context of clusters.

A cluster is a critical mass of producers in a particular location – the result of the process of localisation. Porter (1998) discussed several ways in which location affects the business environment, competition, and growth. These are, to a large extent, the reasons for localisation that Krugman later advanced (1991, 1995, 1998). The first influence is that of the factor conditions of a location. These range from basic inputs such as physical infrastructure, to information. In clusters, the proximity of producers leads to spillovers that improve factor conditions. This improves the flow of information and the success of innovation. This is also true for related and supporting industries. They provide specialised inputs and information, and facilitate complementarities amongst firms. Materials, components, machinery, and services are supplied more efficiently and at lower cost when producers are concentrated in a particular locality. Location plays a role in firm strategy and rivalry. Rivalry that involves imitation and differentiation improves competition and leads to growth. When firms are clustered together, the rivalry is more intense. In the final instance, the demand conditions in a locality may influence the business environment, competition, and growth. Sophisticated and demanding customers at home press firms to improve and differentiate. A cluster may provide such a group of customers.

Thus, Porter (1998) saw the enduring competitive advantages in a global economy as localised. Advantages arise from concentrations that follow from highly specialised skills and knowledge, institutions, rivals and sophisticated customers in a particular region or locality. Proximity allows special access and relationships, better information and other advantages in productivity and productivity growth. Agglomeration is seen as the primary long-run source of economic growth and prosperity.

Empirical studies of the determinants of spatial economic growth may be grouped into three strands (Brakman *et al.*, 2001:128). The first is that of regional and sub-national growth studies that test the determinants of spatial economic growth. This approach is often related to the market-potential approach. The second strand is studies that focus on cities as centres of economic activity. The main questions here relate to city size distribution and optimal city size. The third strand involves the testing of the predictions of the core model of Geographical Economics. From the different tests of the determinants of the spatial variation of per capita income, wages, industry employment or production, a number of commonalities are clear. Firstly, first-nature geography is a significant explanatory variable, working either through endowments or distance. Secondly, externalities are put forward by Geographical Economics model as explanations of agglomeration and they are significant second-nature geography explanatory variables, but the empirical tests are typically for the market access or home-market effect.

Using this literature as a basis this paper sets out to build a measure agglomeration that captures the idea of local competitive advantage. This idea is inspired by UNCTAD's Foreign Direct Investment (FDI) Potential Index for countries (2007), but here it is about the locality's potential as a place to do business.

3. The local role of organised business

As the concept of an index that captures the local business environment is relatively new in South Africa, it is possible to explore terrain over and above the conventional criteria of investment potential, or ease of doing business, considering factors specific to South Africa and its municipalities. This means considering including a possible additional institutional mechanism that could play a relevant role in business decision-making about location. Given the challenges faced at governance level in South Africa, it therefore becomes necessary to examine the extent to which business may have to cope with an extended role in the local economy.

Conceptually, of course, when economists construct economic models – such as seeking to establish criteria for identifying optimal areas for doing business – the natural preference is to want to deal with variables that are easily quantified. As a result, they must often make assumptions that allow them to sidestep the many non-quantifiable aspects of human behaviour and human relationships. The result is that the individuals and institutions that exist are often too simple to give an adequate profile of the circumstances that prevail in the real world, such as for example the value created by the existence of organized entities. The answer must lie in seeing business decision-makers as adaptive organisms that are willing to access whatever data is needed with which they assess alternative courses of action, including location.

The issue of business location is a wide-ranging subject covering small, medium, and large enterprises from all sectors of the economy, basically underpinned by market-driven considerations. It has long been obvious that some business activities – whether from the mining, manufacturing, or service sectors – tend to congregate in particular parts of South Africa. Hence a great deal of attention in economic literature is given to the study of the reasons for the location of economic activity. In the case of sectors like mining or agriculture the location of business activity is often inevitably 'place-bound', or close to an economic 'heartland'. However, in general the obvious orthodox factors driving location in most economies around the world revolve mainly around the cost ratios of transport of raw materials, of workers or of finished goods.

What we do now know generally about business decision-making is that (1) usually a multi-dimensional method is frequently employed by firms to assess investment options, and (2) that outcomes of these options are envisaged with various levels of uncertainty. While most firms may mobilize various technical tools to unpack the investment possibilities there are, as previously suggested, also variables that do not lend themselves to easy modelling. Clearly, it would be advantageous if decision-makers as far as possible could make the future less unpredictable. If they are sufficiently aggressive, they would devote a greater proportion of time and energy to the task of gathering information about the locality and gaining access to data variables about the area.

The confidence with which businesspeople make their decisions must, to some extent, therefore inevitably depend on the broad ‘state of opinion’ they find about the locality and its prospects, or ‘where to do business’. In passing it is interesting to note that, in compiling an article on ‘Ease of Doing Business Index: An Analysis of Investors’ Practical View’, the authors employed a cross-sectional survey design drawn from 47 companies registered with the Lagos Chamber of Commerce and Industry, which it says is the most representative of the organized private sector group in Nigeria (Babatkude et al., 2021). It hints at the existence of an organized business network as being a potential resource, or as a ‘search engine’.

And in the real world, although competitive forces may exist, the interdependence of economic links thus suggests that an ‘industry’ or a ‘sector’ can thus also be seen as a social grouping, that is, a set of firms who are conscious of a common interest – either nationally or locally. This common interest is often reflected in the creation of a trade association or Chamber of Commerce, which will represent the relevant businesses to the relevant authorities and other outside bodies. In some instances, when the number of firms with similar interests gravitate to a locality, the sense of common interest may become strong, even though they are competing. In other words, there is potential through collaboration to enlarge and access external economies of scale through joint or collective access to information.

At a practical level a survey of organized business in the Vaal Triangle of South Africa a few years ago outlined the expectations of several Chambers of how they saw their role in the area and what their priorities were in serving their members. It also provided a useful literature review. The research highlighted the problem issues facing business chambers and their ability to influence the course of events in their area. It also provided a valuable narrative of the strengths and weaknesses of these chambers at the coalface of their representational role in dealing with their respective local authorities (Landsberg et al., 2016)

It should be emphasized, though, that the conceptual framework for collaboration here should, of course, always be focused on conventional advocacy and lobbying by business, not business connections being used for collusive, corrupt, or state capture purposes. In the extensive evidence of state capture and corruption interrogated by the recent Zondo Commission into State Capture in South Africa (Judicial Commission of Inquiry into State Capture, 2022) there have been no instances of legitimate organized business being accused of such activities.

Firms are more likely to behave ethically and act against corruption if they are confident that their competitors also adhere to the same ethical standards. Business associations and Chambers of Commerce can potentially offer a good platform for firms operating in a given sector or location to collectively engage in the fight against corruption and hence level the playing field. They can, inter alia, encourage more transparency and accountability in government decision-making, as well as promote good business integrity.

Orthodox organised business institutions at national, sectoral, or local level should therefore always be so structured and governed to eliminate any scope for dubious behaviour. These remain the basic parameters within which to view the potential role of the organised business network. Does it meet general criteria that add value to business decision-making and help in particular to identify a favourable location in which to do business? And in an environment in which the business mandate may well inevitably extend beyond the immediate balance sheet of the firm or enterprise what mechanism(s) – such as local Chambers of Commerce – may exist to assist in managing such additional obligations?

In focusing on the possibility of a local index of where to do business – the business criteria which would therefore be relevant at higher levels would therefore be largely replicated at lower tiers of government. They would, however, have to be adapted accordingly. In this process the enterprise or firm would need to manage some of the special local challenges when making decisions in a

nonetheless uncertain future environment. The way in which a business will respond to these uncertainties remains of importance in shaping its strategies

Clearly it will be to the advantage of the firm or enterprise if they can diminish them, as this will enhance the chances of making more favourable business and investment decisions in the future. Among the several ways in which uncertainty can be minimized are the use of more elaborate search techniques, including access as suggested to collective information about the locality that is being considered. This may not only help to reduce uncertainty but also assist in protecting the firm against it. The question to be addressed here is whether the existence of local business structure can thus additionally contribute to an assessment of a favourable regional or local investment environment?

It is also true that the uncertain policy environment in South Africa has been particularly important to business confidence and the investment climate in the country. Hardly any current global or local economic assessment about the South African economy have appeared without the inclusion of the words ‘policy uncertainty’ in them. Policy uncertainty in South Africa has been regularly calibrated through the NWU Business School’s Policy Uncertainty Index published quarterly since 2016. Business therefore needs to access all the information needed in their investment and location decisions that will enable them either to minimize the level of policy uncertainty or to identify areas in which it is less acute.

The World Bank Group recently introduced a new concept of investment competitiveness, defined as the ability of countries not only to attract but also retain and integrate private investment into their respective economies. The supporting World Bank study (World Bank Group, 2017) stresses that strengthening investment competitiveness requires establishing a favourable business environment, which includes developing more and better linkages with local, regional, and global economies. Investors attach greater value to mechanisms that help them to expand their businesses than to policies used by governments simply to attract investment in the first place. As many as 68 per cent of multinational corporations now see information on the availability of local suppliers and links to these suppliers as critically important in their location decisions. This creates another opportunity for both well-organised and professionalised local business associations and bilateral national chambers to add value to this process, using their networks.

A narrow approach would also not be in line with the traditional philosophical commitment of Chambers of Commerce to open markets and to uphold the competitive system. Fortunately, empirical research confirms that in a wide range of developed and developing countries most business associations’ activities are in reality market supportive and contribute to economic efficiency. Under certain conditions business associations and chambers can even contribute to economic development without intending to do more than defend their members’ interests, just as trade unions can do.

Briefly, the approach here is to interrogate the following questions:

- argue the question as to what extent an effective ‘organized business network’ of one kind or another can help to shape the environment or location within which business may wish to locate itself?
- identify who is there in a town or city who is committed and can be relied upon to promote that particular business environment or location?
- examine whether good local government-local business relations can assist in contributing to perceptions of an attractive business location?

This is therefore in part an exploratory paper to see whether this collective or collaborative factor can be captured in a new locality index for doing business.

4. Empirical analysis

The construction of a composite indicator of the agglomeration forces that make a specific locality a better place to do business draws on the notion that the competitive advantage of a local economy is a construct that cannot be directly measured, but analysis can identify groups of variables that measure the construct. This idea is inspired by UNCTAD’s Foreign Direct Investment (FDI) Potential Index

for countries (2007) and Zietsman *et al.*'s (2006) Growth Potential Index for towns in the Western Cape.

4.1 Data and factor analysis

For the construction of the Where to do business index per local municipality the data are sourced from HIS Markit's REX database. For all the observations the latest available year is 2021.

The following measures were included in the analysis that follows:

- The municipal level Gross Domestic Product.
- The size of municipality in square kilometres.
- The total population.
- The total number of households.
- The population density.
- The share of exports and imports in local value added.
- The Human Development Index.
- The share of the population with post-matric qualifications.
- A local infrastructure index.
- The share of middleclass households in the municipality.
- The local economic growth rate, average for the period 1996 to 2016.
- The unemployment rate.
- The murder rate.
- A dummy variable indicating whether there is a local chamber of business.
- Local municipal finance data, including the ratio of grants to subsidy income, the share of rates income to total income, the ratio of rates income to grants income, the debt ratio, the debt to revenue ratio.

The choice of these indicators follows Le Roux Booyesen (2003) who used similar measures to construct so-called reconstruction and development indices per province. The focus is on the level of local municipality using the 2016 demarcation and includes the metropolitan municipalities but excludes district councils. The analysis was undertaken using IBM SPSS Statistics 27.

The method for constructing the index is principal component analysis. This approach helps to screen the data, extract the factors, determine the communality, and calculate the factor scores. The factor scores are then used as index values for further analysis.

The first step was to screen the data using a correlation matrix. The analysis requires measures that correlate fairly well with coefficients greater than 0.5 (Field, 2009). The second step in the analysis is to determine whether principal component analysis is appropriate. Table 2 presents the test statistics for KMO and Bartlett's test for sphericity. KMO is a measure of sampling adequacy and represents the ratio of the squared correlation between variables to the squared partial correlation between variables. The statistic ranges between 0 and 1. A value close to 1 indicates that patterns of correlations are relatively compact and principal component analysis should yield distinct and reliable factors (Field, 2009). Here the KMO statistic is .852 and it is possible to continue with the analysis. Additional analysis of the anti-image correlation matrix shows the diagonal elements to be greater than .05 and the off-diagonal elements to be small. Thus, principal component analysis is appropriate for this data.

Table 1: KMO and Bartlett's test

Kaiser-Meyer-Olkin Adequacy.	Measure of Sampling	.852
Bartlett's Test of Sphericity	Approx. Chi-Square	8886.634
	df	231
	Sig.	.000

(Authors' own calculations)

Bartlett's measure tests the null hypothesis that the original correlation matrix is an identity matrix (Field, 2009). The test statistic is significant, which means that one rejects the null hypothesis that the R-matrix is an identity matrix. Thus there are relationships between the variables that can be included in the analysis. Again, the conclusion is that principal component analysis is appropriate.

The extraction of the factors identified four factors with an Eigen value greater than one. The factors explains 76 per cent of the variance of the service delivery.

The communalities represent the amount of variance in each variable that can be explained by the factors that has been retained. Table 2 presents the communalities after extraction. It is clear that the factors explain a large part of the variance in most of the measures save for the chamber dummy, murder rate, area, current ratio, and the full period economic growth rate, but can be retained in the analysis.

Table 2: Communalities

	Initial	Extraction
Chamber dummy	1.000	.392
Total population	1.000	.945
Total nr households	1.000	.959
HDI	1.000	.897
Post matric education	1.000	.749
Population density	1.000	.897
Infrastructure index	1.000	.849
Unemployment rate	1.000	.721
Share of middle-class households	1.000	.810
GVA	1.000	.977
Economic growth rate 1996 - 2018	1.000	.574
GDP	1.000	.977
Export share	1.000	.823
Import share	1.000	.936
Area km2	1.000	.448
Murder rate	1.000	.293
Rates income	1.000	.957
Grants to subsidy income	1.000	.903
Rates to grants income	1.000	.702
Current ratio	1.000	.553
Debt ratio	1.000	.670
Debt to revenue	1.000	.713
Extraction Method: Principal Component Analysis.		

(Authors' own calculations)

Finally, varimax extraction was used to obtain the component matrix to maximise the variance explained by the factors (Field, 2009). Component scores smaller than 0,5 were excluded in the rotated component matrix shown in Table 3.

Table 3: Component matrix

	Component			
	1	2	3	4
GDP	.975			
GVA	.975			
Rates income	.967			
Total nr households	.960			
Total population	.949			

Import share	.932			
Population density	.916			
Grants to subsidy income	.900			
Export share	.867			
Post matric education	.651			
Chamber	.404			
Infrastructure index		.853		
Share of middle-class households		.828		
HDI	.415	.818		
Unemployment rate		-.674		.472
Debt ratio		.541	-.539	
Area km2		.437		
Murder rate		-.401		
Rates to grants ratio			.606	
Debt to revenue ratio		.578	-.603	
Current ratio		-.433	.473	
Economic growth rate 1996-2018				-.674
Extraction Method: Principal Component Analysis.				
a. 4 components extracted.				

(Authors' own calculations)

There are four component groupings of the measures that we classify as follows. Component 1 captures the size of the market, component 2 the sophistication or development of the market, component 3 reflects the financial health of the local government, and component 4 the macroeconomic forces of growth and unemployment.

A number of measures load on two factors and with contrasting signs. A high unemployment rate is negatively related to the other factors that measure the development of the market, so is a high murder rate. High debt ratios and debt-to-revenue ratios are found in more developed markets, but are negatively related to the financial health of the local government. The opposite is the case for the current ratio. Though it is practice to remove measures with double loadings we believe that they do help to explain variation and in directions that concur with expectations.

Factors three and four unfortunately does not provide much useful information for the subsequent building of the index. Factor three will rank municipalities with high rates to grants ratios and current ratios higher and those with higher debt ratios and higher debt to revenue ratios, lower. It does not quite capture the complexity of the challenges facing local government finance. A quick inspection of a ranking of the factor scores shows a high ranking for very small rural municipalities in the Western and Northern Cape and does not say much about doing business there. Other measures of local government financial health and governance will have to be included in further iterations of this work. In the case of factor 4, the negative loading on unemployment dominates the outcome and a ranking shows large rural municipalities with high unemployment rates coming up tops. This also does not add useful information about where to do business.

Based on the analysis above the final step was to calculate factor scores. The factor score is a composite score of the attractiveness of a local municipalities to business in. In this case the regression method was used to calculate the factor scores. These scores are uncorrelated and have a mean of zero. The average of the first two factors scores constitutes the *Where to do business index*. The following sub-section presents preliminary analysis of the index results.

4.2 Results and interpretation

This sub-section presents the index results and simple checks of the index. Figure 2 shows a scatter plot of the aggregate index and the local economic growth rate over the period 1996 to 2018. It is

clear that there is a positive relationship between having a higher WTDB index score and faster average economic growth over the period.

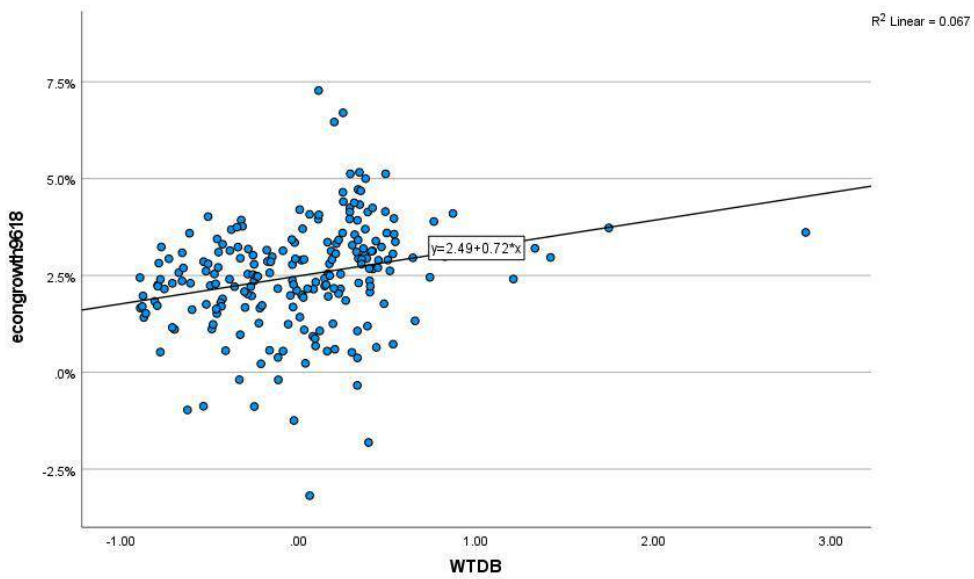


Figure 2: Economic growth and the WTDB index

Figure 3 shows a 2D-dotplot of the aggregate index number split by whether the municipality has a chamber of business or not. It is clear that the majority of municipalities do not have chambers of commerce, but for those that do, the average index score is slightly higher.

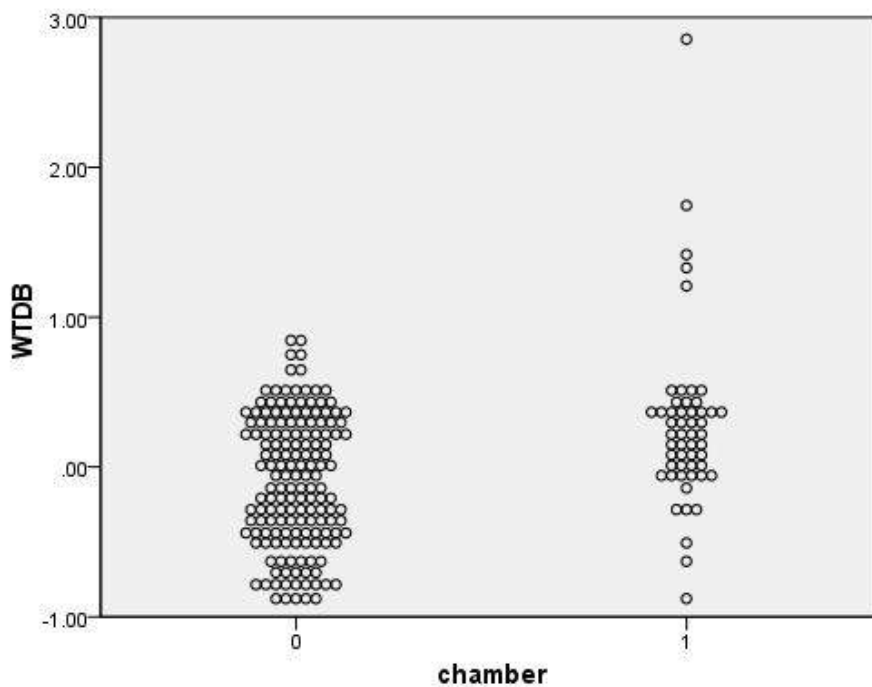


Figure 3: WTDB and chambers of commerce

Table 4 shows the ranking of municipalities by the constructed measures of the size of the market, the sophistication of the market, and the provisional index score.

Table4: Index rankings

Size of the market	Sophistication of the market	WTDB
City of Johannesburg	Overstrand	City of Johannesburg
City of Tshwane	uMngeni	City of Cape Town
City of Cape Town	Midvaal	eThekwini
Ekurhuleni	Stellenbosch	City of Tshwane
eThekwini	Mogale City	Ekurhuleni
Nelson Mandela Bay	Saldanha Bay	Overstrand
Polokwane	City of Cape Town	uMngeni
Emfuleni	Cape Agulhas	Nelson Mandela Bay
Mangaung	Knysna	Msunduzi
Madibeng	Drakenstein	Stellenbosch
City of Mbombela	Msunduzi	Midvaal
Msunduzi	eThekwini	Mogale City
Rustenburg	Hessequa	Buffalo City
Bushbuckridge	Buffalo City	Saldanha Bay
Buffalo City	Nelson Mandela Bay	Drakenstein
Emalaheni	Mossel Bay	Mangaung
Greater Tubatse/Fetakgomo	George	Knysna
Thulamela	Steve Tshwete	Cape Agulhas
King Sabata Dalindyebo	Sol Plaatje	Hessequa
Greater Tzaneen	JB Marks	City of uMhlathuze

The results show the dominance of the large metro cities and many of the larger cities and towns in the Western Cape and KwaZulu-Natal. Though many of the names make sense, one should caution that these are preliminary results that still require further investigation.

5. Managerial Implications

The point of departure in this paper is that, over and above the existing macro and micro data available to business in deciding where it may be best to locate and do business, there is a gap that needs to be filled by the creation of a Where to do business index in South Africa. It can be seen as a valuable new tool to evaluate the advantages and disadvantages of various cities and towns, as now calibrated by such an index

An index along these lines which identifies localities most favourable to business and investment activity will therefore add value to decision-making in the following six ways:

Firstly, apart from its business and economic value, there are also a number of overall socioeconomic reasons distinctive to South Africa that enhance the role that such an index can play in the location of business activity in general and investment in particular. It identifies particular areas where local economic development may be facilitated. This then requires a sharper focus on local criteria for business investment. Drawing on available Geographical Economics literature and fresh sources the paper opens up new dimensions for consideration, including those of local business institutions and the existence of a business-friendly environment at local level.

Secondly, the index aims to enhance – but also to compress – the flow of information that is relevant to identifying optimal business locations and hence to guide decision-making accordingly. While all firms could potentially benefit from a Where to do business analytical tool, it is especially useful to SMMEs, whose size is usually inadequate to assist them in their investment analysis. This may also be true of larger firms when the size of the investment is small in relation to the value of the resources which the enterprise has at its disposal. This is all especially relevant when assessing the economic potential of smaller towns and localities.

Thirdly, in the long run the success of a firm or enterprise is related to its return on investment and on its existence within an environment of economic sustainability. To make the best business decisions the firm must therefore reduce level of uncertainty that may surround a particular city, town, or locality. The firm must thus either devote more time and resources to the task of gathering information about the local environment, or it can now access up-to-date and readily available Where to do business data. It is clearly to the decision-maker's advantage if the local future can be made more predictable in this way. It is, of course, uncertainty about a particular locality to which the new index is addressed that is that is relevant here, not uncertainty generally.

Fourthly, it may well be that a decision-maker should continue to collect information about a locality until he or she is of the view that the gathering costs exceed the benefit that can be obtained from its use. However, this is not always a very cost-effective way to go, as no consistent or stable relationship has been found between the cost of searching for data and the value of the knowledge gained. The existence of a readily available and reliable Where to do business index now helps to bridge that gap and reduce the transaction costs of gathering certain pertinent information.

Fifthly, the availability of a Where to do business index therefore improves the accuracy of predictions as to locality. It helps an enterprise to access information which allows more accurate predictions about the profitability of various business proposals that are being considered. This reduces the likelihood that projects will be selected that turn out to be unprofitable or unsustainable and reject opportunities that may have been more lucrative or aligned with local economic developments. The confidence with which decision-makers take decisions must depend reliable sources of information which are credible.

Sixthly, from the point of view of overall governance in South Africa the existence of an updated Where to do business index offers a useful spin-off that could (a) help to act as an 'early warning system' to higher authorities monitoring local government as to changes in the investment attractiveness of various metropolitan centres and towns and (b) inject a useful additional 'competitive' element into the performance of cities and towns in serving their citizens and business. The concept of a Where to do business index in South Africa therefore represents an innovative opportunity to mobilize the local data available in ways that promote good decision-making by business as to its optimal location.

Acknowledgments

The authors would like to thank an anonymous referee for inputs and editing advice. All errors and omissions remain our own.

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ENVIRONMENTAL MANAGEMENT



Reporting on Water Targets and Measures in the Food Beverage and Tobacco Industry

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Keywords

Water targets and measures; food, beverage and tobacco industry; disclosure; Global Reporting Initiative

Abstract

The food, beverages and tobacco industry depend heavily on water and is therefore directly exposed to water scarcity. To address the water issue, the phrase ‘what gets measured, gets managed’, could be applied. The objective of the paper was to develop an improved water disclosure index by expanding the GRI 303 water and effluents framework. A sample of 49 companies listed on the Australian Security Exchange, the South African JSE Limited and Dow Jones Sustainability Index (DJSI) were selected. A manual content analysis was performed, which included a process of coding qualitative and quantitative data collected from the integrated, sustainability or environmental reports. The study revealed that the constructs’ current quality of disclosure of targets and measures is between 32.65% and 43.88%. Furthermore, companies listed on the DJSI (69.23%) outperformed the South African (41.25%) and Australian firms (16.00%). Our improved water disclosure index contributes by adding four new constructs measuring water quality, water recycled and reused, including a baseline year and water efficiency ratio. This could be used to improve comparability between water users and improve decision-making by stakeholders.

1. Introduction

With water becoming a global concern due to factors such as intensive agricultural production and growing populations (DeMaagd & Roberts, 2021), individuals, countries and small and large companies have become aware of the importance of this scarce resource. The food, beverages and tobacco industry depend heavily on water and is therefore directly exposed to water scarcity (McKinsey and Company, 2009:4). This industry interacts with water in many different ways that can negatively affect the environment and, in turn, communities (Kemp *et al.*, 2010:1553).

Stakeholders are demanding to be better informed about the social and environmental impacts of business, and deteriorating environmental conditions have heightened the expectations of stakeholders around corporate social responsibility (CSR) practices (Boiral, 2013:1036; Dong *et al.*, 2014:59). Water has become one of the dominant environmental issues around the world, resulting in a focus on corporate water disclosures driven by increasing importance of sustainable water use (Hazelton, 2013:270). The world is seeking solutions to water-related issues, increasing the recognition of the potential of water accounting to contribute to the solution by providing relevant water information (Chalmers, Godfrey & Potter, 2012:282). The phrase ‘what gets measured, gets managed’, could be applied.

In this paper, the emphasis is on the disclosure of setting water-related targets (also known as targets and goals) and the measurement thereof. We expanded on the Global Reporting Initiative (GRI) 303 document that deals with “water and effluents”. The document explains that there is a strong relationship between (i) water withdrawal, (ii) water consumption, and the (iii) discharge of water (GRI, 2018:4). We place focus on the quality of water disclosure of companies in the food, beverage and tobacco industries listed on three indices: Firstly, the Australian Security Exchange (ASX), since Australia is the most arid continent (Besada & Werner, 2014:129); Africa is the second-most arid continent and South Africa is classified as one of Africa’s water-stressed countries (Tewari,

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2009:693). Consequently, South African companies listed on the Johannesburg Security Exchange (JSE) were selected; and thirdly, considering that water is a global concern, the listing requirements of the Dow Jones Sustainability Index (DJSI) provided a global perspective and comparison towards best practices in the food, beverage and tobacco industry.

The GRI, which consists of lists of metrics related to sustainability, is arguably currently the most widely reported initiative utilised by companies (D'Andrea, 2017; Fonseca *et al.*, 2012:78-81; GRI, 2013:54-61). Notwithstanding, previous research conducted on the improved GRI G4 guidelines where companies have to specify the standards and methods they apply in their reporting, indicate that researchers are still questioning the usefulness of water data that is aggregated from many sites (Danoucaras *et al.*, 2014:728). By providing consistent information across all sites, Leong *et al.* (2014:98) argued that companies can show that they are not manipulating their reports by cherry-picking the best stories and results across their operations. Another study performed by Fonseca, McAllister, and Fitzpatrick (2012:70) contested the effectiveness of the GRI framework by arguing that GRI-based reports could mislead decision-makers because unsustainable practices, particular at site level, is not reported on. Semmens, Bras, and Guldberg (2013:247) stated that more standardised water reporting guidelines would allow companies to conduct meaningful comparisons of internal activities to benchmark against competitors' operations. Dantas *et al.* (2021) investigated global, international, and national water databases for water withdrawal and consumption, and found significant inconsistencies which encumbers comparison across databases. The authors call for improved water reporting and further investigations to improve water data reporting. Jones *et al.* (2015:118) conducted an exploratory study selecting the world's top 10 food and drinks companies as ranked for social responsibility by Oxfam. The findings revealed considerable variations in the information provided by the food and beverage companies on their approach to water stewardship. Hereupon, they argued that the lack of common and agreed frameworks and standards make it difficult to establish meaningful comparisons between companies.

2. Problem Investigated

There is a need how to measure, manage and report water information. This is driven by the lack of uniform standards and guidelines on reporting practices. Unlike carbon emissions, no collective accepted standard exists for the setting of meaningful and measurable targets for water. Significant targets are those that are closely linked to the context within which a company's direct operations and supply chains are located (CDP, 2017b:10). To address these shortcomings, targets and measures to improve measurability and comparability of the information to assist stakeholders to compare and evaluate the disclosed information, are required. This paper aims to fill this gap by contributing to the debate on how to standardise reporting and disclosure practices with regard to water targets and measures. In this regard, only 56% (418) of the total companies investigated in the latest Carbon Disclosure Project (CDP) global water report have set targets. However, the majority remain short-term goals and do not adequately account for sustainable thresholds of the basin upon which the company relies (CDP, 2017a:13).

3. Research Objectives

The objective of the paper is to develop a water target and measures disclosure index for the food, beverage and tobacco industry. The research comprised three phases. Phase 1 – part of the literature review – developed a water disclosure index by expanding the current GRI 303: water and effluents framework and utilising it as a measuring instrument for the quality of water targets and measures disclosure. In this vein, several studies have used the GRI sustainability guidelines as basis to analyse sustainability reporting practices of companies (Topp-Becker & Ellis, 2017; Weber & Hogberg-Saunders, 2018). Phase 2 empirically tested the index by gathering qualitative and quantitative data from the sampled companies listed in the food, beverage and tobacco industry of the three selected indices. Phase 3 identified additional best disclosure practices from the sampled firms to develop a further improved disclosure index.

We contribute four new sub-constructs as part of an improved water disclosure index, namely water quality, water recycled and reused, baseline year and water efficiency ratio. This new water disclosure

index, which is focused on water targets and measures, could be applied by firms operating in the food, beverage and tobacco industry. This could contribute to the skills needed to disclose integrative and comparable water-related information. The different sub-constructs in the water disclosure index could contribute to future reporting frameworks, and practitioners, policymakers, academics or standard setting bodies could utilise the index as a benchmark to test, refine or adjust the index.

4. Literature Review

4.1. Targets, measuring and reporting

To identify and quantify water impacts are crucial for companies to enhance effective management decisions. Mueller *et al.* (2015:33) stated the significant gaps in datasets and inconsistencies in measurement and reporting of geographical water shortfalls. The need for more complete datasets, containing the following information, was emphasised (Mueller *et al.*, 2015:42):

- Amount of water withdrawal and discharge.
- Amount of freshwater availability and depletion.
- Water quality to be monitored.
- Reuse and recycle information on water.

This argument is corroborated by the CDP's global water report of 2017, where it is argued that companies have to measure and monitor water withdrawals, discharges, quality, consumption and the provision of water, sanitation and hygiene services across their operations (CDP, 2017a:13).

Companies have to set targets to reduce impacts on water availability and quality. Once these targets are set, companies should have to commit to these targets as they are fundamental to determine the status of water resources. The GRI 303 explains that there is a strong relationship between water withdrawal, water consumption and the discharge of water (GRI, 2018:4). Because of this strong relationship, companies are expected to report on all three topic-specific disclosures. As water-related impacts are often localised, the company is encouraged to support any quantitative aggregate-level information with narrative descriptions of any contextual factors that were considered when compiling the information (GRI, 2018:4). To adhere to this need, a more comprehensive overview of the company's water use should be available. This standard includes disclosures on the management approach and topic-specific disclosures. The requirements in terms of the management approach are discussed in GRI 303-1&2, however this paper focuses on topic-specific disclosures, namely sub-construct 1, disclosure GRI 303-3 water withdrawal, 2, disclosure GRI 303-4 water discharge and, 3, disclosure GRI 303-5 water consumption.

In terms of disclosure GRI 303-3, water withdrawal, and GRI 303-4, water discharge, the reporting organisation should report the following information (GRI, 2018:9):

- (a) Total water withdrawal/discharge from all areas in mega litres (ML) and all areas with water stress in ML, and a breakdown of this total by the following sources, if applicable:
 - (i) surface water;
 - (ii) groundwater;
 - (iii) seawater;
 - (iv) produced water; and
 - (v) third-party water.
- (b) A breakdown of total water withdrawal/discharge from each of the sources listed in disclosures GRI 303-3 (a) and GRI 303-3 (b) in ML by the following categories:
 - (i) freshwater ($\leq 1\,000$ mg/L Total Dissolved Solids); and
 - (ii) other water ($>1\,000$ mg/L Total Dissolved Solids).

- (c) Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies and assumptions used.
- (d) Finally, only relevant to GRI 303-4, priority substances of concern for which discharges are treated, including:
 - (i) how priority substances were defined, and any international standard, authoritative list, or criteria used; and
 - (ii) the approach for setting discharge limits for priority substances.

Disclosure GRI 303-5 which deals with water consumption, states that the reporting organisation should report the following information (GRI, 2018:15):

- (a) Total water consumption from all areas in ML.
- (b) Total water consumption from all areas with water stress in ML.
- (c) Change in water storage in ML, if water storage has been identified as having a significant water-related impact.
- (d) Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies and assumptions used, including whether the information is calculated, estimated, modelled or sourced from direct measurements, and the approach taken for this, such as the use of any sector-specific factors.

The set targets should be scientifically informed by sustainable thresholds and the social context of a given catchment and should be aligned with other targets. Referring to these targets, the company should be able to account for the local context where the water is withdrawn and discharged. Additionally, the targets should be aligned with public sector efforts, such as the targets of the UN Sustainable Development Goal number 6 on water, or with other targets set by national and local government institutions, trade associations and action groups (GRI, 2018:7).

According to Chalmers, Godfrey and Lynch (2012:1003), the importance of high-quality water-related information to support decision making is of critical importance when addressing water management. The deterioration in water quality is a global concern, which is expected to intensify over the next decades causing serious threats to human health, the environment and also for sustainable development (WWAP, 2018:3). Consequently, water quality is included in our water disclosure index – targets and measure and titled Sub-construct 4.

Results revealed that if firms report water discharge, they also report water withdrawal, water consumption and water recycled under the GRI G3 characteristics (Kleinman *et al.*, 2017:347). In an example of a distillery it was found that they report on both recycling and the reuse of water Diageo (2018:18). Subsequently, water recycled and reused disclosure are included in the water disclosure index: targets and measure and is titled Sub-construct 5. This is based on reporting on water quality that was included in the previous GRI (2013) report (G4 – EN 8) which included the question: “Does the company report the total volume of water recycled and reused by the organisation in cubic metres per year (m³/year) as a percentage of the total water withdrawal reported?”.

4.2. Phase 1: Design of the water targets and measure disclosure index

The aim of the first phase was to design a water targets and measure disclosure index. The previous GRI guidelines, the latest GRI 103 and GRI 303, the CDP, the GRI sector guidance for food and beverage processing, and grounded literature on water reporting identified, were used to develop a water disclosure index. Themes were identified to function as five sub-constructs of water disclosure with regard to water targets and measures. A three-point assessment scale – with a quality description for each element in the water disclosure index – was developed. This was to improve the accuracy towards coding and consequently scoring the reporting of targets and measures of water in the sampled companies. Each sub-construct in the water disclosure index was deliberated at a colloquium of experienced persons, followed by pilot coding, and a subsequent discussion of the results – before

further analyses commenced. Table 1 formed and refined each sub-construct together with the coding instructions.

Table 1: Developed water targets and measures disclosure index

Sub-constructs	Coding		
	0	1	2
<p>1) Total water withdrawal by source (EN 8): The company discloses total water withdrawal from all areas in ML, and a breakdown of this total by the following sources, if applicable: (a) surface water (i.e. collected or harvested rainwater); (b) groundwater; (c) seawater; (d) produced water; (e) third-party water.</p> <p>Total water withdrawal from all areas with water stress in ML, and a breakdown of this total by the following sources, if applicable: (a) surface water; (b) groundwater; (c) seawater; (d) produced water; (e) third-party water, and a breakdown of this total by the withdrawal sources listed in a-d. (When compiling the information specified above, the reporting organisation shall use publicly available and credible tools and methodologies for assessing water stress in an area).</p> <p>A breakdown of total water withdrawal from each of the sources listed in Disclosures 303-3-a and 303-3-b in ML by the following categories: (a) freshwater ($\leq 1,000$ mg/L Total Dissolved Solids); (b) Other water ($> 1,000$ mg/L Total Dissolved Solids). (Other water constitutes any water that has a concentration of total dissolved solids higher than 1,000 mg/L. Other water is therefore all water that does not fall into the freshwater category.)</p> <p>Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.</p>	No disclosure	The company discloses total water withdrawal (quantity) and/or the source but does not quantify the source.	The company discloses total water withdrawal, quantifying each source.
<p>2) Disclosure 303-4 water discharge: The company discloses total water discharge to all areas in ML, and a breakdown of this total by the following types of destination, if applicable: (a) surface water; (b) groundwater; (c) seawater; (d) third-party water, and the volume of this total sent for use to other organisations, if applicable. (An example of third-party water discharge is when an organisation sends water and effluents to other organisations for use. In these instances, the organisation is required to report the volume of this water discharge separately.)</p> <p>Priority substances of concern for which discharges are treated, including: the number of incidents of non-compliance with discharge limits.</p> <p>Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.</p> <p>The number of occasions on which discharge limits were exceeded. Any fines received or to be paid.</p>	No disclosure	The company discloses total water discharge (quantity) and/or the source but does not quantify the source.	The company discloses total water discharge, quantifying each source
<p>3) Disclosure 303-5 water consumption: The company discloses total water consumption from all areas in ML. (If the reporting organisation cannot directly</p>	No disclosure	The company discloses	The company discloses total water

measure water consumption, it may calculate this using the following formula: Water consumption = Total water withdrawal – Total water discharge). Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used, including whether the information is calculated, estimated, modelled, or sourced from direct measurements, and the approach taken for this, such as the use of any sector-specific factors.		total water consumption (quantity).	consumption (quantity) with contextual information
4) Disclosure of water quality: The company discloses information on their water quality.	No disclosure	Statement about water quality.	Provide more detail on water quality.
5) Percentage and total volume water recycled and reused: The company discloses total volume of water recycled and reused by the organisation in cubic metres per year (m ³ /year) as a percentage of the total water withdrawal reported under Indicator G4 – EN 8.	No disclosure	The company discloses total water recycled and reused.	The company discloses total water recycled and reused (quantify and percentage of total withdrawal).

Source: own compilation

5. Methodology and Design

From the literature review, a water disclosure index (refer table 1) for targets and measures with the five mentioned sub-constructs was developed and applied as the measuring instrument. Phase 2 empirically tested the index in the selected three indices in the food, beverage and tobacco industry by following a mixed method approach. Firstly, a manual content analysis was performed by reviewing the integrated, sustainability or environmental reports of the sampled companies. Qualitative data through review of narrative reporting, and quantitative data by establishing a disclosure score for each of the sampled companies utilising the water disclosure index (Table 1), was collected. Secondly, a quantitative approach was followed to test the sample companies' current disclosure quality using the disclosure scores. Descriptive statistics were used to calculate the mean disclosure score for each of the sub-constructs included in the framework. A further quantitative analysis included an ANOVA which measures whether there is a significant difference between the mean scores of each index.

Phase 3 searched for additional themes during the qualitative coding of the integrated, sustainability or environmental reports from the sample companies. The aim was to identify additional best disclosure practices from the sample firms to develop a further improved disclosure index. Abductive reasoning was applied after phase 2 and 3 were concluded where the quantitative analysis was integrated with the qualitative analysis to enhance the final improved disclosure index.

Non-probability, purposive sampling was utilised to select firms from the ASX in Australia, the Johannesburg Securities Exchange (JSE) in South Africa and global companies listed on the Dow Jones Sustainability Index (DJSI) in the food, beverage and tobacco industry for the period November 2018 – February 2019. Australia and South Africa are water scarce countries, and a global perspective was added by including firms listed on the DJSI.

The sample included 16 of the 18 companies listed in South Africa – one company was a new listing and did not have any sustainable reports, while the other company is British American Tobacco (BAT), a dual listing on both the JSE and DJSI. BAT was reckoned only under the DJSI in order to compare global best practices. On the ASX index in Australia, 26 companies were detected under the food, beverage and tobacco industry. For purpose of this study, only the 20 largest companies per market capitalisation were selected. Thirteen companies on the DJSI adhere to the listing

requirements of the index and formed part of this study. In total 49 companies (16 + 20 + 13) were included in the sample.

6. Results and Findings

6.1. Phase 2: Empirically testing the water disclosure index

Table 2 reveals the analysis of the results of the five constructs within the water disclosure index based on the disclosure score of each of the sampled companies. The number of companies analysed, the minimum- (0) and maximum (2) disclosure score is illustrated. The developed assessment scale (ordinal scale) provided the ability to measure the quality of disclosure. The mean, standard deviation (SD), and mean percentage is also provided. The Cronbach's alpha for targets and measurement as an overall construct showed a value of 0.875 which suggest very good internal consistency reliability. It is recommended that values of the Cronbach's alpha coefficient should be above 0.7 to be acceptable (DeVellis 2012, 112).

Table 2: Descriptive statistics of disclosure of water targets and measures

Sub-constructs	N	Min	Max	Mean	SD	Mean%
1) Total water withdrawal per source	49	0	2	0.88	41.62	43.88
2) Total water discharged	49	0	2	0.65	42.76	32.65
3) Total water consumption	49	0	2	0.80	44.46	39.80
4) Disclosure on water quality	49	0	2	0.86	40.82	42.86
5) Volume of water recycled and reused	49	0	2	0.65	43.96	32.65

Source: own compilation

Table 2 presents the quality of disclosure of water targets and measures. It is evident that the quality of disclosure for each construct is very low as the mean is lower than 1 which effectively means that it ranges between no disclosure and limited disclosure (refer to table 1). The two constructs with the lowest disclosure scores are construct 2 – total water discharged, and construct 5 – volume of water recycled and reused. While the best performing construct was construct 4 measuring the disclosure on water quality. The mean percentage narrowly ranges between 32.65% and 43.88%.

We found that not all companies use the same metrics for water measurements. It was also detected from the analyses that many firms calculate water withdrawal and discharges in total, however a further breakdown of water withdrawal and discharges per source, was lacking. Some firms did calculate water intensity/efficiency ratios by expressing water consumption in an efficiency ratio as input versus output, rather than water used per kilogram of finished product, or per litre of packaged product. Disclosure on the reuse and recycling of water was one of the least reported on elements. Table 3 exhibits a comparison between the disclosure quality of the sampled companies listed on the three indices.

Table 3: Targets and measures per index/country

Country	N	Mean %	SD
South Africa	16	41.25	33.24
Australia	20	16.00	24.37
Global	13	69.23	25.64
Total/average	49	38.37	34.84

Source: own compilation

Assessing Table 3, it is evident that the companies listed on the DJSI, with a disclosure score of 69.23% outperformed the South African (41.25%) and Australian firms (16.00%). A recorded p-value of 0.000 was calculated that illustrates significant differences among the groups which requires further investigation. Accordingly, the Tukey test in Table 4 separates the three groups.

Table 4: Tukey test for targets and measures

Targets and measures: Tukey B		Subset for alpha = 0.05		
Country	N	1	2	3
Australia	20	16.00%		
South Africa	16		41.25%	
Global	13			69.23%

Source: own compilation

The three subsets in Table 4 implies that the mean of water targets and measures disclosure score for the global companies are statistical significantly ($p < 0.05$) higher than the South African and Australia companies and that the South African companies disclosure mean score is statistical significantly ($p < 0.05$) higher than the Australia companies.

In research conducted by ACCA (2010:20), targets and measures were split between consumption and implementation categories. The Australian companies recorded an average score of 50% under the consumption category and 26% for the implementation criterion. ACCA (2010:24) stated that full quantitative disclosure was absent from most companies, especially in the areas of water discharge and recycling. The 32 companies analysed in ACCA's study achieved higher percentages when compared to the 16% recorded in this study. The difference could be ascribed to various industries analysed in the study of ACCA, suggesting that companies in the food, beverage and tobacco industry in Australia have much room for improvement. The CDP (2017a:13) revealed that 466 of 742 of the world's largest publicly listed companies (63%) had a good grasp of measuring and monitoring water withdrawals, discharges, quality and consumption. The companies listed on the DJSI in this study achieved a higher score of 69.23%. The Tukey test in Table 4 verifies that the firms listed on the DJSI could be viewed as organisations implementing best practices. This signifies that the firms listed on the DJSI are taking the lead in the food, beverage and tobacco industry with regard to water disclosure on targets and measures – which other firms could utilise as examples to improve.

6.2. Phase 3: Best disclosure practices

During the coding process, which required an intensive study of the content of sustainability/environmental reports, examples of some best practices with special reference to the construct of targets and measures, were identified. For example, Distell, a JSE-listed company in the alcoholic beverages industry in South Africa, disclosed the following with regard to water efficiency:

Our resource efficiency targets for 2020 (relate to the usage of water, electricity and fossil fuel-based energy in our production processes) will enable us to actively drive annual improvements in performance to ensure we reach our long-term goals. We achieved our 2018 target and even exceeded our 2020 target to reduce water usage by 15% by increasing water recycling at our Adam Tas and Green Park sites and installing a closed loop cooling system at our Wellington distillery (Distell, 2018a:30).

Nestlé, the world's largest food and beverages company, reported on their water efficiency and stated that they implemented 578 water-saving projects in their factories with expected savings of 5.4 million m³ of water a year, through operational efficiency and technology for reusing water (Nestlé, 2017:80). The ability of Nestlé to quantify water information illustrates their commitment towards water governance. Diageo (2018:18) measured their success relative to the size of an Olympic swimming pool:

A recent programme of investments in our distilleries in Maharashtra state has driven further improvements. We have installed new water-recycling equipment, including ultra-filtration followed by reverse osmosis systems at our Nasik, Aurangabad and Pioneer sites. This has enabled us to reuse up to 500,000 cubic metres of water a year – enough to fill 200 Olympic swimming pools.

In addition to the elements measured above, some companies disclosed water intensity/efficiency ratios, for example British American Tobacco (2017:35) recorded that they use 3.27 m³ of water per million cigarettes equivalent produced, a 33% reduction from a 2007 baseline year. Calculating water usage per litre of packaged product, Distell (2018b:48) reported usage of 3.33 litres compared to 4.94 litres used by Diageo (2018:8). Considering that both companies operate in the alcoholic beverage industry, the expression of water efficiency ratios could provide valuable and comparable information to stakeholders.

Examples of best practices observed when performing the analysis, which could improve the comparability of water reporting, was the disclosure of water intensity/efficiency ratios. The companies disclosing water efficiency ratios are utilising their measurements from total water withdrawal, to calculate an efficiency ratio in terms of water used per kilogram of finished product or per litre of packaged product. To provide further substance to water efficiency, some companies introduced a baseline year. For example, ThaiBev (2018:94) listed on the DJSI divided their water intensity ratios per product line and compared it with a baseline year – in order to advance comparability as follows:

In the beverage business, the water intensity ratio was reduced by 1.37 hectolitres per hectolitre of finished product, or 16.72% compared to 2014 as a baseline year. For the food business, the water intensity ratio was reduced by 0.06 hectolitres per kilogram of finished products, or 22.86% compared to 2017.

Additionally to water efficiency ratios observed, Grupo Nutresa (2017:182) listed on the DJSI stated that they are working on the measurement of their water footprint, which measures the direct and indirect water consumption, as medium- and long-term plans.

Kellogg's (2018:32), an American multinational food manufacturing company, highlights their commitment to water reuse relatively to a baseline year:

Kellogg is committed to implement water reuse projects in at least 25% of our plants by 2020 from a 2015 baseline, with a specific focus on plants located in water-stressed areas. Kellogg has committed to responsibly sourcing our ten priority ingredients as determined by environmental, social, and business risk by 2020 by partnering with suppliers and farmers to measure continuous improvement.

Although the firms listed on the DJSI performed the best with a disclosure score of 69.23%, the overall performance of all 49 firms for the targets and measures construct was 38.37%. Referring back to the literature, Mueller *et al.* (2015:31) stated that quantifying water impacts are key to enable firms to make effective management decisions. However, full quantitative disclosure was nevertheless lacking by many firms within the elements in the targets and measures construct.

Best practices in the analyses highlighted that water reuse projects, reverse osmosis systems and water-recycling equipment resulted in millions of litres water reused and recycled.

6.3. An improved Water Disclosure Index: Targets and Measures

The main objective was to develop an improved water disclosure index to measure the disclosure of water targets and measures. Table 5 presents this index. Four additional sub-constructs were added to the original three water disclosure index developed from literature. The first additional two sub-constructs are water quality, and water recycled and reused, while the last two are disclosure of a baseline year which enables a company to compare its improvement over a period of time, and the disclosure of a water efficiency ratio.

Table 5: Improved water disclosure index for food, beverage and tobacco industry

Water disclosure index	Guidance
<p>1) Total water withdrawal by source Disclose total water withdrawal from all areas in ML and provide a breakdown of this total by the following sources, if applicable: (a) surface water (includes collected or harvested rainwater); (b) groundwater; (c) seawater; (d) produced water; (e) third-party water. Total water withdrawal from all areas with water stress in ML, and a breakdown of this total by the following sources, if applicable: (a) surface water; (b) groundwater; (c) seawater; (d) produced water; (e) third-party water, and a breakdown of this total by the withdrawal sources listed in a-d. (When compiling the information specified above, the reporting organisation shall use publicly available and credible tools and methodologies for assessing water stress in an area). A breakdown of total water withdrawal from each of the sources listed in Disclosures 303-3-a and 303-3-b in ML by the following categories: (a) freshwater ($\leq 1,000$ mg/L Total Dissolved Solids); (b) other water ($> 1,000$ mg/L Total Dissolved Solids). (Other water constitutes any water that has a concentration of total dissolved solids higher than 1,000 mg/L. Other water is therefore all water that does not fall into the freshwater category.) Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.</p>	<p>The company should disclose total water withdrawal, quantifying each source.</p>
<p>2) Water discharge Disclose total water discharge to all areas in ML and provide a breakdown of this total by the following types of destination, if applicable: (a) surface water; (b) groundwater; (c) seawater; (d) third-party water, and the volume of this total sent for use to other organisations, if applicable. (An example of third-party water discharge is when an organisation sends water and effluents to other organisations for use. In these instances, the organisation is required to report the volume of this water discharge separately.) Priority substances of concern for which discharges are treated, including: the number of incidents of non-compliance with discharge limits. Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used. The number of occasions on which discharge limits were exceeded. Any fines received or to be paid.</p>	<p>The company should disclose total water discharge, quantifying each source.</p>
<p>3) Water consumption Disclose total water consumption from all areas in ML. (If the reporting organisation cannot directly measure water consumption, it may calculate this using the following formula: $\text{Water consumption} = \text{Total water withdrawal} - \text{Total water discharge}$) Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used, including whether the information is calculated, estimated, modelled, or sourced from direct measurements, and the approach taken for this, such as the use of any sector-specific factors.</p>	<p>The company should disclose total water consumption (quantity) with contextual information.</p>
<p>4) Water quality Disclose information on water quality.</p>	<p>Provide detail on water quality which could affect food and beverage products.</p>
<p>5) Percentage and total volume of water recycled and reused</p>	<p>The company should</p>

Disclose total volume of water recycled and reused in m ³ /year as a percentage of the total water withdrawal reported.	disclose total water recycled and reused (quantify and percentage of total withdrawal).
6) Baseline year Set and disclose a baseline year of total water withdrawal, water discharge, and water reused and water efficiency ratios against which comparisons should be disclosed from one year to the next.	Disclosure of different timeframes, and comparisons with a baseline year would assist progression towards more water efficient operations.
7) Water efficiency ratio Calculate water efficiency ratios in terms of input (water consumption in ML) divided by output (kilograms of finished product or litres of packaged product).	Firms should calculate and express their water consumption in an efficiency ratio and compare this to a set baseline year (as discussed above) in order to determine whether progress is made to more water efficient operations. These ratios could be utilised to compare with other firms.

Source: own compilation

7. Recommendations and Conclusion

Building on the GRI 303 framework, we developed a new water disclosure index to measure water targets and measures. We added four new sub-constructs namely water quality, water recycled and reused, baseline year and water efficiency ratio. This is to address shortcomings uncovered in the literature review, such as a lack of comprehensive overview of withdrawal, consumption and discharge and various metrics. The quantitative results revealed that the disclosure of targets and measures in food, beverage and tobacco companies listed on the ASX, JSE and DJSI, are poor. The five sub-constructs reached median percentages of between only 32.65% and 43.88%. The results confirmed major gaps in the measuring and reporting of water data – which could lead to poor information available for decision-making. This low score may be attributable to the fact that there is no collective accepted standard for the setting of meaningful and measurable targets for water. The lack of standards was further revealed as statistical significant disclosure differences between the three indices were found. The ASX companies performed significantly weaker than the JSE companies, where the latter performed significantly weaker than the DJSI companies. This could stem from the cost or complexities involved to gather and to measure water-related data. Absent or outdated systems, as well as the variety of methods applied, could add to the problem of comparability.

On the other hand, our qualitative analysis revealed innovative technologies and appropriate practices in the disclosure of some companies. Many firms disclosed measurable progress on reducing water usage as a result of quantified water information – which illustrated commitment towards water governance. Since it is evident that there is much room for improvement on the disclosure of water targets and measures, especially the ASX and to some lesser extent the JSE companies, we recommend standardising reporting practices with regard to water targets and measures. Therefore companies, especially in the food, beverage and tobacco industry should start to implement the improved disclosure index as a benchmark that can be further refined by for example, practitioners, policymakers, academics or standard setting bodies could utilise the index.

This paper focused on a single construct of water disclosure, the quality of disclosure of water targets and measures. Moreover, only the food, beverage and tobacco industry was investigated on three indices. Future research could include adding more water related constructs to this index by focusing on aspects such as the disclosure of water materiality, -governance, and/or -risks. Furthermore, more countries and industries can be included to enable a cross-country and cross-industry comparison.

We recommend that the same metrics for measurements (mega litres) should be used by all reporting entities. This would bring about standardised water information and improved comparability. Secondly, we recommend that companies disclose water withdrawal and discharges per source – which would provide more specific information to inform decision-making. Thirdly, we recommend that firms calculate water efficiency ratios in terms of water used per kilogram of finished product, or per litre of packaged product. Furthermore, firms should divide their water efficiency ratios per product line i.e. beverages and food. The disclosure of water efficiency ratios would provide valuable and comparable information to stakeholders. Fourthly, it is recommended that firms should concentrate more on the reuse and recycling of water. Fifthly, arising from the preceding recommendations, firms should assign a baseline year towards water withdrawal, discharge, reuse and efficiency figures. This should represent thresholds and baseline conditions as an effective tool to verify and compare whether improvement and set targets have been accomplished.

This paper concludes by arguing that all firms should take cognisance of global water issues and the importance of water and water disclosure in the food, beverage and tobacco industry.

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An Analysis of the Quality Management System on Water Management Practices at Ethekewini Municipality

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Keywords

Water supply accessibility, water restrictions, quality management system.

Abstract

One of the primary goals of this research was to look into the accessibility of water supply to consumers in the eThekewini Municipality region. The emphasis is on investigating the difficulties encountered when attempting to access water during erratic rainfall patterns. The purpose of this research is to familiarize KwaZulu-Natal (KZN) residents with the various restrictions and remedies that can help them conserve and use water more effectively and efficiently. This study emphasized the significance, causes, and effects of the limited water supply that affects not only the KZN province but South Africa as a whole.

The study assessed water management practices in KwaZulu-Natal using an exploratory case study method. When determining the critical issues encountered during water supply, a qualitative research approach was used, which added more value. The research was carried out at the eThekewini Municipality Water and Sanitation Department in KwaZulu-Natal. Purposive sampling was used, with a sample size of nine participants. As a data collection tool, semi-structured face-to-face interviews were used. For this qualitative study, NVivo 12 was used as thematic analysis software.

This research study contributed to the creation of knowledge about a new quality management system implementation and how ISO 9001 can be used to ensure effective and efficient quality by implementing new practices that will ensure continuous improvement.

1. Introduction

1.1. Problem Statement

Many households and businesses in South Africa, including the eThekewini Municipality in KwaZulu-Natal, do not have a consistent continuous water supply, resulting in poor water management practices (eThekewini Municipality, 2018). According to Section 27(1)(b) of the Republic of South Africa's Constitution of 1996, "everyone has the right to adequate water." According to Viljoen (2018), water scarcity is becoming an increasing problem that is escalating at an alarming rate as the supply of water to households and industries is restricted due to poor water management practices and ineffective service delivery.

The study aimed to investigate the problem of water scarcity and loss and the impact on water management practices in the eThekewini region because measures to address water scarcity in eThekewini are currently unknown. The researcher investigated the current water management practices in the KwaZulu-Natal region and recommended tailor-made solutions to improve the efficiency and effectiveness of the quality water management system.

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1.2. Methodology

• Research Design

Because of the nature of this study, the researcher chose an exploratory case study design. Sekaran (2016) states that a research design is the implementation of structures within a study. Three broad categories of qualitative and quantitative research methodologies exist descriptive, exploratory, and causal research designs.

According to Burns and Grove (2011), an exploratory research design is research conducted to gain new insights, discover innovative ideas, and increase knowledge of a phenomenon. This method allows researchers to enter the field of study and collect data through observation, focus groups, and interviews.

The primary goal of the exploratory research is to identify water supply constraints in the eThekweni region. As a result, the focus of exploratory research should be on the most likely problems, opportunities, or situations, as well as determining the key salient factors or variables that will be contributory factors and relevant to the study (Van Wyk, 2013).

• Research Approach

The primary research approaches are qualitative and quantitative (Creswell, 2014). Qualitative research refers to holistic, subjective methods for analysing, comprehending, and developing a theory (Leedy and Ormrod, 2015). In contrast to numbers, statistics, and measurements, the qualitative approach is associated with language, words, and past experiences (Marshall and Rossman, 2011). This research strategy can be classified as dynamic and developmental (Leedy and Ormrod, 2015). It is made up of narrative data that has been properly identified, gathered, and analysed.

The most appropriate research paradigm for this study was determined to be qualitative research, as it will probe into deeper areas, whereas quantitative research methods may be too superficial (Hair, Celsi, Ortinau, and Bush, 2013). Hair et al. (2013) emphasize the importance of employing specific approaches to conduct in-depth research in specific areas. This is consistent with the findings of this study, which calls for a thorough investigation into the causes and consequences of water scarcity.

• Research Instrument

When conducting an exploratory study, the researcher is more likely to include in-depth or semi-structured interviews in their design. Similarly, the purpose of an exploratory study is to use interviews to assist the researcher in identifying and inferring causal relationships between variables (Ghauri and Gronhang, 2011). As a result, it was critical for the researcher to comprehend the reasons for participant selection, the decisions made, and the participants' opinions and attitudes. (Saunders et al., 2019).

Semi-structured and in-depth interviews give the researcher the opportunity to probe a response by asking the participant to explain, elaborate, or build on their previous response. As the researcher adopted an interpretivist philosophy, the interviewer became concerned with understanding the meaning of his participants and how they ascribed to the various types of phenomena (Saunders et al., 2019).

Face-to-face semi-structured interviews were thus the most appropriate research instrument for this study and were used during data collection, as this study required an exploratory case study approach. To be more specific, this type of study required semi-structured interviews and comprehensive research to provide a deeper understanding of how the Municipality assesses its water management practices in relation to the challenges of water supply and water shortage.

- **Study site**

eThekweni Water and Sanitation is a unit of the eThekweni Municipality that oversees providing water and sanitation services to all Municipality customers. The study site is the location where the research will be carried out. This research was conducted at the eThekweni Municipality Water and Sanitation Department, 3 Prior Road, Durban, KwaZulu-Natal. The study location was chosen because of the implementation of its water management practices and the ease of access to information.

- **Sampling Technique**

This study's sampling strategy will be non-probability based on purposive sampling. Purposive sampling, according to Sekaran and Bougie (2013), is limited to specific types of individuals with specific elements that can provide the desired information for a specific purpose. The sample elements are carefully selected based on participant characteristics. The researcher chose the purposive sampling technique on purpose, and the researcher chose participants based on the importance of the qualities that he or she possesses.

- **Data Quality Control**

Reliability and validity, according to Sekaran et al. (2016), are critical in quantitative studies. However, in qualitative research, Lincoln and Guba's (1985) four dimensions of trustworthiness are considered equivalent to reliability and validity in quantitative research. It is critical to ensure the credibility and trustworthiness of a research study because they assess the study's quality and the possibility of similar future studies.

In general, both reliability and validity contribute to the essential quality research criterion of trustworthiness (Lincoln and Guba, 1985). The trustworthiness of observations or data is referred to as reliability, and the trustworthiness of interpretations of conclusions is referred to as validity. Although qualitative research does not make a clear distinction between observations and interpretations, it is useful for the researcher to distinguish procedural trustworthiness from the criteria used to judge the trustworthiness of interpretations (Stiles, 2013).

As a result, conducting qualitative research becomes difficult because the researcher is unsure whether the research will be credible and trustworthy after it is completed. When conducting this type of research, the researcher considered four dimensions to ensure the credibility of this qualitative research: transferability, confirmability, trustworthiness/credibility, and dependability (Lincoln and Guba, 1985).

- **Data Analysis Technique**

An inductive rather than a deductive approach to data analysis was used (Hair et al., 2015). The study was expected to have close interaction with data from eThekweni Municipality because it was based on a qualitative approach rather than a quantitative approach.

By identifying the correlation between relationships via search engines and query functions, the researcher can test theories, identify specific trends, and cross-examine information. NVivo software can be used to determine observations, and the researcher can create a body of evidence to support his/her research (Braun and Clarke, 2006).

Conventional content analysis, according to Sekaran and Bougie (2016), is divided into coding categories derived directly from data collection. Thematic analysis was used on the data to identify key themes and patterns using NVivo software, and the researcher was able to analyze the data using categories and codes. The themes were identified as a result, and categories and sub-categories were created (Sekaran et al. 2016).

2. Literature Review

A concept was created because the researcher believed that combining elements from various frameworks was important in supporting the goal of improving water practices and enhancing water

quality management practices at eThekweni Municipality. The Service Quality Gap Model can be used to explain the effectiveness and efficiency of the Quality Management System, as well as how service delivery can be used to boost continuous improvement in accordance with ISO 9001. Figure 2.4 explains how to integrate the service gap model into the Quality Management System to ensure continuous improvement.

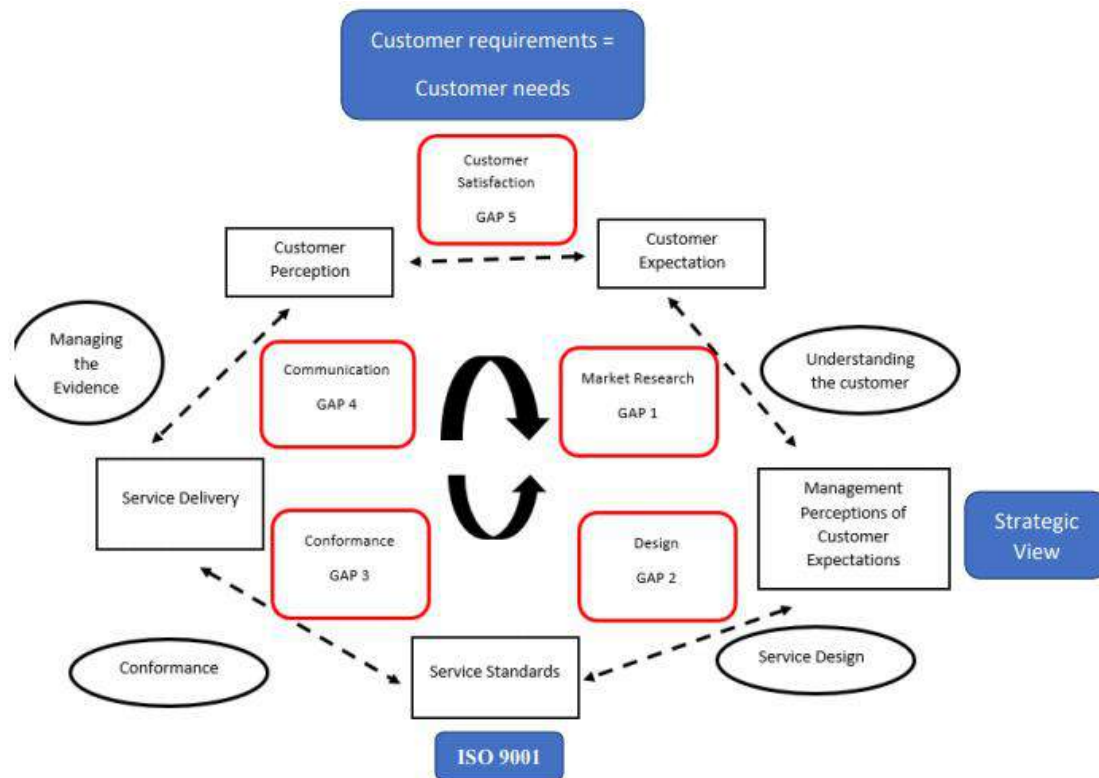


Figure 2.4: Service Quality Gap Model
Source: Author's construction

GAP 5 is defined as the difference between the two factors - customer expectations and perceptions. Customer satisfaction is dependent on closing gaps 1 through 4 associated with service delivery. GAP 1 - Market Research - is the misalignment of customer and management expectations (Buttle, 2004). GAP 1 is caused by management's lack of understanding of how customers must formulate their expectations based on a variety of sources (Klibi, Martel, and Guitouni, 2010). Improving marketing research, fostering better communication between managers and their contact employees, and reducing the number of management levels are all strategies for closing the gap (Bharwana, Bashir, and Mohsin, 2013).

The service design gap is caused by management's inability to formulate and implement service quality target levels capable of meeting customer perceptions and translating these into realistic and achievable workable specifications (Bharwana et al., 2013). GAP 2 is caused by management's lack of commitment to quality specifications or perceptions of the inability to meet customer expectations (Brink and Berndt, 2004). Setting specific, measurable, achievable, and realistic service delivery goals will help to close the gap (Ivanauskiene and Volungenaite, 2014).

The conformance gap occurs when the actual delivery of the service does not meet management's expectations and specifications. GAP 3 occurs due to a variety of factors, including a lack of teamwork, poor employee selection, and insufficient training and development. Communication tools shape customer expectations of the service provider (Berry, Parasuraman, and Zeithaml, 1994). GAP 4 is the mismatch between service delivery and external communications, manifested as a lack of

communication to the appropriate personnel and exaggerated promises that cannot be kept (Bharwana et al., 2013).

The focus of developing countries, in general, is on customer orientation, as the common theme for all efforts in reforming and modernizing public administration. eThekwini Municipality recognizes the importance of involving their customers, such as businesses and consumers, in the design and evaluation of their services. Given that the eThekwini Municipality is the service provider, the Municipality can maintain close contact with its customers and provide them with the services they require.

As a result, as acknowledged in the service quality approach, customer evaluation of eThekwini Municipality's services is primarily linked to aspects such as service setting, frontline employee performance, and other non-human elements of service delivery.

Collecting customer feedback on such determinants benefits the EMWS department because it serves as a guide for improvement and the attainment of higher levels of excellence. Few studies have compared the perspectives of customers and employees on service quality expectations or perceived levels of desired service quality. The researcher plans to contribute to and fill this void. This becomes a strong justifiable and critical role for service delivery for the eThekwini Municipality to capture the perceptions of frontline employees.

This role entails listening to customers, understanding, and interpreting their needs, and performing appropriate tasks in accordance with the quality service standards that have been established (eThekwini, 2019). To avoid many service quality gaps, the eThekwini Municipality must have alignment between their customers' and frontline employees' perceptions.

3. Results and Findings

This objective assesses the current Quality Management System's effectiveness and efficiency. This section also discusses current QMS system practice and how service delivery is evaluated. The researcher hoped to gain insight into the types of criteria used for water acceptability practice and to improve the revenue management system (RMS).

Please describe the current quality management system on water supply at eThekwini Municipality?

The findings revealed that there is no formal quality management system in place, but the EMWS department is using a variety of methods to meet quality standards. The goal of this question was to learn about the current quality management system's effectiveness and efficiency. The researcher identified this as a critical question because there were few concerns about the quality management system and the department needed to improve. ISO 17025, SANS241, water service act (WSA) & DWS, and water lab tests emerged as themes.

Most participants stated that water laboratory tests were used as a practice implementation of ISO 17025 because they assisted in assessing water quality.

Participant six contended that because no quality management system was implemented, there were too many bottlenecks in the system, preventing the system's quality, efficiency, and effectiveness. This prevents eThekwini Municipality from achieving ISO 9001 because it only has a water laboratory to test the water supply from Umgeni Reservoir before supplying water to businesses and households.

Participants five and eight brought up SANS 241 requirements. Both participants agreed that potable water was supplied in accordance with SANS 241, as this was the Water Service Act (WSA) and the EMWS department's requirements.

How does water practice meet the criterion of quality management?

The findings indicate that the ISO 9001 standard must be implemented. This standard will ensure that consumers and businesses have access to high-quality water. The question sought to identify various criterion measures for best water practices. The only recurring theme was the "ISO 9001 standard."

ISO 9001 implementation was deemed necessary by eight participants. Participant four contended that the total quality management system might be lacking due to water scarcity because the ISO 9001 standard had not been implemented, and that rainfall should be assessed. The sixth participant stated that the EMWS department has a standardized criterion that is used to inspect the water specification before it is supplied to KwaZulu- Natal residents. This participant also stated that health and safety standards are generally followed. However, participant nine agreed that implementing the ISO 9001 standard will meet quality standards and improve water supply service delivery. This standard will have a positive impact on eThekweni Municipality, transforming it into a SMART city.

How does the water practice meet the criterion of acceptability?

The findings revealed that a combination of SANS 241 and aggressive awareness programs can help vulnerable consumers. This question was designed to help the researcher understand the acceptability criterion for best water practices. SANS 241 and water supply awareness programs were identified as two themes.

Most participants agreed that the SANS 241 standards could be used as acceptability criteria, while participants 7 and 9 agreed that roadshows and awareness programs could be used as acceptability criteria to raise awareness about the water compliance standard. However, participant four contended that the EMWS department could not be rated in comparison to other countries because this was unacceptable.

How can the current Revenue management system be improved on water loss at eThekweni Municipality?

The findings revealed that there are revenue leakages in the water supply system, which will need to be investigated and resolved using an efficient accounting system and a cutting-edge water supply structure. The goal of this question was to learn how the current revenue management system was used to improve water loss detection and revenue loss prevention. Water leaks, efficient water infrastructure, a 100 percent water detection system, a water metering system, and illegal water connections were among the topics covered.

Most participants suggested that a SMART water metering system was required, while participant six discussed how the implementation of a water metering system would provide a more accurate water reading. However, participants one and eight both agreed that installing water infrastructure in all areas can improve the system's quality and reduce water waste.

A few participants suggested imposing penalties for excessive water usage and disconnecting water supplies via illegal connections. Participants six and eight, on the other hand, stated that the implementation of a water detection method will aid in water retention recovery and the prevention of illegal water connections.

According to Sithole (2019), the EMWS department was looking at how other provinces dealt with the issue of non-revenue water. The eThekweni Municipality currently spends more than R163,6 million per year on non-revenue water, and non-revenue water trends are increasing at a rate of about 2% per year. Despite the numerous challenges, the EMWS department has made positive progress in interventions, including the installation of new pressure-reducing Valves (PRV), the removal of illegal connections, the metering of unmetered properties, and the maintenance of existing PRVs, and the detection of active leaks.

4. Conclusion

Implementing a Quality Management System is a strategic decision that demonstrates the organization's commitment to the development and application of the QMS model. The QMS aims to

continuously improve its effectiveness through evaluation. This type of commitment must be carried out and demonstrated by employees by informing the organization about the importance of meeting customer requirements and satisfaction, complying with legal requirements, establishing quality objectives, and implementing a Quality Policy.

One of the primary goals of the implementation stage is to determine the scope of the QMS for evaluation. The scope must be examined and defined in light of the issues confronting eThekweni Municipality, as well as customer needs and expectations, as well as legal and regulatory compliance obligations. The QMS information scope and justified exclusions must be identified and documented, as this can aid in future Quality Management System adoption decisions. The findings revealed, first and foremost, that the eThekweni Municipality lacked a formal quality management system. As a result, the EMWS department employs a variety of quality-control measures.

Second, to assist sensitive consumers with their concerns, a combination of SANS241 and aggressive awareness programs was proposed. Third, revenue leakages in the water supply system were discovered, which needed to be addressed with an appropriate accounting system and a modern functioning water supply structure. Finally, a smart water metering system was identified as a requirement because it will help with better accuracy readings, identifying water flow interruptions, and illegal connections.

Due to issues with the eThekweni Municipality's water management system, this goal was met. As a result, the eThekweni Municipality Water and Sanitation department must establish, maintain, and constantly improve its water management practices. This includes the various processes required within the department, as these changes must be in accordance with the ISO 9001 standard for effective water distribution management.

Smart Water Metering can be used to record water consumption in today's global water industry. This monitoring and billing information is measured and communicated to the water utility department on a daily basis. Water intervals are measured in the water industry every 30 to 60 minutes; if the intervals are longer than 60 minutes, the water utility will receive insufficient information. Where the Water utility is allowed to use a communication channel, this type of communication channel obtains the water meter reading and indicates the demand for water supply. This channel also determines whether or not the water supply has passed through the smart meter and onto the customer's property.

The smart water metering system will send a command to the meter that will cause it to perform specific tasks such as disconnecting the water supply or limiting the pressure flow. The smart water meter also has an internal display that provides users with real-time feedback on their water consumption and costs. As a result, this system will aid in better revenue management and water management practices within the eThekweni Municipality.

5. Managerial Implications

The purpose of this research is to provide measures for developing a Water Quality Management System and ensuring better water management practices. Water scarcity has become one of South Africa's most pressing issues, and better management is required to ensure that the existing water supply is maintained. eThekweni Municipality is one of the largest municipalities in the KwaZulu-Natal region; however, EMWS management must implement quality strategies to ensure continuous improvement in their existing water management practices through research and development. Other researchers have also provided recommendations and opinions on the previously identified problem areas. Adopting the proposed recommendations could help the EMWS department reduce the percentage of excessive water loss to zero, allowing for more effective and efficient quality management practices.

Acknowledgment

All participants in this study, for taking the time to participate in the research. Your input and contribution have ensured its success.

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Environmental Health Concerns of Generation Y Consumers in South Africa

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Keywords

attitude; environmental knowledge; health consciousness; Generation Y; South Africa

Abstract

Increased environmental concern has resulted in consumers altering their daily purchasing behaviours. As such, consumers are looking for more sustainable ways to consume, recycle and dispose of the products they use daily. This is becoming increasingly prevalent amongst today's youth, who are spearheading green purchasing behaviour. Compared to older generations, the youth of today are more inclined to concern themselves with the state of the natural environment. The primary objective of this study was to investigate a model depicting the effect which attitude, environmental knowledge and health consciousness play on the purchase intentions and ultimately, the purchase behaviour of Generation Y consumers. The findings indicate that Generation Y consumers have favourable attitudes towards environmental behaviour, consider themselves environmentally knowledgeable, and concerned for personal health. Furthermore, it was found that these factors positively influence both their purchase intent and behaviour of green products over conventional products. Organisations seeking to capture the Generation Y market segment must create an environmentally friendly culture within their business strategies. This may attract a new environmentally conscious consumer that can show great potential to purchase and behave in a pro-environmental manner.

1. Introduction

Owing to the increasing amount of highly complicated environmental issues, the world is witnessing environmental degradation. In addition, there is a debate that the earth's environmental problems are a consequence of mankind's endeavours of continuous global urbanisation (Wang & Dong, 2019:165-166; Jeff, Marla, Jha, Levy & McEntee, 2015:676; Said, Ahmadun, Paim & Masud, 2003:306). The depletion of natural resources, the contamination of water, global warming, carbon dioxide emissions and climate change are a few of the environmental problems the world faces at present due to the relentless industrialisation that has and is still taking place (Mayerl & Best, 2019:27; Taufique & Vaithianathan, 2018:46; Jeff et al., 2015:676). Consequently, this has given rise to increased awareness and concern among consumers regarding the depletion of natural resources, such as food and water, the preservation of the environment for future generations and self-preservation or health consciousness (Singh, Chiliya, Chikandiwa & Chodokufa, 2016:467; Lim, Yong, & Suryadi, 2014:298). This increased environmental concern has resulted in consumers altering their daily purchasing behaviours. As such, consumers are looking for more sustainable ways to consume, recycle and dispose of the products they use on a daily basis (Bhuiyan & Sharma, 2017:352; Trivedi, Patel, & Savalia., 2015:74; Albayrak, Aksoy & Caber, 2013:28). Verma and Chandra (2018:1153) suggest that this is becoming increasingly prevalent amongst today's youth, who are spearheading green purchasing behaviour. Compared to older generations, the youth of today are more inclined to concern themselves with the state of the natural environment, which is important for organisations to take heed of as South Africa's population was estimated at a total of 60 142 978, with an estimated 43 percent of the total population being characterised as Generation Y in 2021 (Statistics South Africa, 2021). Therefore, developing an understanding of the environmental behaviour of the individuals of

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the Generation Y cohort is vital for the environment and the environmentalism movement (Taufique & Vaithianathan, 2018:47; Kanchanapibul, Lacka, Wang & Chan, 2014:528).

2. Problem investigated

Owing to the sheer size, potential future income and possibly a higher social standing within a community (Bevan-Dye & Surujlal, 2011; Day & Newburger, 2002), this study focused on the youthful Generation Y cohort. Compared to previous generations, it is evident from the research that the new environmentally concerned consumer appears to be younger, highly educated and increasingly affluent. In addition, these consumers have an increasing inclination to accept innovative ideas, while being prone to be more socially or environmentally conscious (Kanchanapibul et al., 2014:529; Royne, Levy & Martinez, 2011:332). Collectively, young new graduates may be deemed as highly influential individuals amongst their peers. Consequently, this study aims to investigate the environmental health concerns of Generation Y consumers in South Africa, through the validation of a model depicting the effect which attitude toward behaviour, environmental knowledge and health consciousness play on purchase intentions and ultimately, the purchase behaviour of Generation Y consumers.

3. Research objectives

- To determine if a significant and positive relationship exists between attitude towards behaviour and purchase intention is present.
- To determine if a significant and positive relationship exists between environmental knowledge and purchase intentions.
- To determine whether a significant and positive relationship exists between health consciousness and purchase intentions.
- To determine if there is a significant and positive relationship between purchase intention and purchase behaviour of Generation Y consumers in South Africa.
- To determine a model depicting the relational effects attitude towards behaviour, environmental knowledge and health consciousness portray towards purchase intentions and ultimately, purchase behaviour of Generation Y consumers in South Africa.

4. Literature review

The literature review provides a discussion on the theory underpinning this study, namely the theory of planned behaviour, followed by the antecedents of attitude, environmental knowledge and health consciousness and their influence on purchase intentions and subsequent purchase behaviour, concluding with a look at the Generation Y cohort, specifically in the South African context.

4.1 The Theory of Planned Behaviour

The theory of planned behavior is an extension of the theory of reasoned action (Ajzen & Fishbein, 1991; Fishbein & Ajzen, 1975). Brookes (2021) indicates that based on the theory of planned behaviour, perceived behavioural control, combined with behavioural intention, can be used to predict the achievement of certain behaviours.

4.2 Attitude toward behaviour

Indriani, Rahalu and Hadiwidjojo (2019:629) define attitude as an expression of an individual's feelings, which illustrate their likes or dislikes of an object or collection of certain objects. Attitudes may be attributed to psychological processes which one is not able to observe directly, however they may be inferred from what an individual says and does. Perner (2018) adds that consumer attitudes are an amalgamation of beliefs and feelings towards an object and the subsequent behavioural intentions towards the object. Duggal (2019) highlights that attitudes are important drivers of purchase behaviour, motivating consumers to purchase or not to purchase products or services. Therefore, this study proposes the following hypothesis:

H₁: Generation Y consumers attitudes towards behaviour significantly influences their purchase intention.

4.3 Environmental knowledge

As a consumer moves through the various stages of the consumer decision-making process, the amount of knowledge an individual possesses in relation to a particular object or group of objects will influence the outcome of the final purchase made. The same applies for consumers who follow the decision-making process in relation to the purchasing of environmentally friendly products. Zahari and Esa (2016:447) indicate that the more individuals identify with environmental degradation, the higher the likelihood will be that these individuals will consider environmentally friendly products. Consequently, Zsóka, Szerényi, Széchy and Kocsis (2013:27) define environmental knowledge as the combined knowledge an individual possesses regarding the current environmental issues facing the globe. As can be seen in previous research undertaken, environmental knowledge may be viewed as a positive correlating factor with environmental concern (Heo & Muralidharan, 2019:424; Yadav & Pathack, 2016:734; Almossawi, 2014:9; Zsóka et al., 2013:127; Polonsky, Vocino, Grau, Garma & Ferdous, 2012:243), which may in essence transgress into pro-environmental behaviour.

Gray et al. (2019:395) suggest that environmental concern can be linked to educated individuals, where the potential to earn higher disposable income increases the likelihood that these individuals will engage in pro-environmental behaviour. Sharma and Foropon (2018) propose that environmental knowledge has a direct positive influence towards environmental purchase intention, particularly in relation to green products. As such, this study proposes the following hypothesis:

H₂: Generation Y consumers' environmental knowledge significantly influences their purchase intention

4.4 Health consciousness

Health consciousness concerns an individual's cognisance of the degree to which their lifestyle and diet is deemed as healthy (Afable, 2019). According to Phan and Mai (2016:58), health consciousness is the subjective intent or motivation of consumers to improve their health. Wolfson (2019) indicates that organic food products are free from chemicals and not only benefit consumers by enhancing their health through consumption, but through improving the environment simultaneously. Tandon, Jabeen, Talwar, Sakashita and Dhir (2021:12) conclude that consumers who are increasingly concerned with food safety possess positive attitudes toward organic food products.

Compared to consumers' concerns regarding the protection of biodiversity and the environment, the health concerns of individual consumers are more widespread in the influence on organic purchases (Mazzocchi, Ruggeri & Corsi, 2019:155). Wolfson (2019) highlights that antioxidants, which are found in conventional soil, provide organic crops and foods with nutritional superiority, which become even healthier due to the absence of pesticides and chemicals.

According to Hernandez (2014), consumers are becoming increasingly concerned with their health, which has resulted in consumers attempting to obtain food that provides them with physical nourishment and mental satisfaction, with the aim of avoiding experiences which may have damaging and harmful effects on their health such as fast food consumption or the chemical compounds from food packaging. Espinosa and Kadić-Maglajlić (2018) propose that individuals who are more inclined to preserve their quality of life, are more likely to engage in certain health-conscious behaviours, with the aim of protecting and managing their health and wellbeing.

Consumers are becoming increasingly aware of their health, with increased purchases of natural and healthy food products (Sritharan, 2022). Besides being healthy and safe, organic foods are free of additives, chemical-free and eco-friendly, containing fewer pesticides and more nutrition, which results in an increasing number of consumers choosing organic foods over conventional foods (Van De Walle, 2018).

Therefore, this study proposes the following hypothesis:

H₃: Generation Y consumers' health consciousness significantly influences their purchase intention.

4.5 Purchase intention and behaviour

The purchase intentions of individual consumers are influential forces in both new product adoption and continued product retention (Bhuiyan & Sharma, 2017:354; Ali, Khan & Ahmed, 2011:219). Nairava (2013:74) delineates that the purchase intention of consumers is the degree to which a consumer is willing to act out a particular behaviour. Societal factors, such as social, culture and economic, form the foundation of environmental behaviour, highlighting the importance of developing an understanding of the environmental behaviour intentions of consumers (Chaudhary & Bisai, 2018:798).

According to Jeff et al. (2015:679), consumers who are classified as pro-environmental not only purchase environmentally friendly products but they also practise pro-environmental activities. Activities of this nature constitute becoming water and energy-efficient, consuming fewer animal products, reducing waste and recycling. As such, some consumers may only engage in certain activities, such as recycling and attempting to be more water conscious. While this constitutes pro-environmental behaviour, it does not induce any environmentally friendly purchases. Nonetheless, consumers have become increasingly cognisant of their ability to assist the environment, which has in turn forced organisations into implementing CSR strategies into their organisational operations (Huh & Chang, 2017:127; Yadav & Pathack, 2017:114). This highlights the need for academics and practitioners to develop a full understanding of the environmental purchase intentions and environmental behaviours of consumers to ensure they successfully incorporate environmentally friendly purchase adoption and continued product retention (Levine & Strube, 2012:322; Peattie, 2001:137).

Mayerl and Best (2019:354) postulate that environmental intent is the willingness or sacrifice a consumer is prepared to make in favour of environmental preservation. Bhuiyan and Sharma (2017:354) suggest that if organisations wish to increase the purchase intention of consumers to purchase environmental products, they will need to consider the implementation and use of more effective environmental marketing strategies, including CSR strategies. As higher levels of environmental concern are believed to increase the probability levels of green purchase intent (Sharma & Foropon, 2018:1024; Taufique & Vaithianathan, 2018:48), organisations need to ensure that they use their marketing efforts in such a way as to increase environmental purchase intentions (Chen & Chang, 2012:4).

H₄: Purchase intention has a significant influence on purchase behaviour of Generation Y consumers.

4.6 Generation Y

In 2020, it is estimated that approximately 37 percent of the population may be categorised as being part of Generation Y cohort in South Africa (Statistics South Africa, 2019). Constituting a third of the population, the Generation Y cohort represents a lucrative market segment to all organisations, based on its sheer size. For the purpose of this study, Markert (2004:21) defines this cohort as individuals born between 1986 and 2005, making this cohort aged between 17 and 36 years in 2022.

According to Eastman and Liu (2012:94), the individuals within the Generation Y cohort are the foot soldiers of the environmentalism movement. Owing to these individuals having been raised within an eco-conscious society, they are becoming increasingly environmentally conscious (Huh & Chang, 2017:127). As such, their behaviour is increasingly gravitating towards an environmentally sustainable lifestyle (Huh & Chang, 2017:127; Rogers, 2013). This may be seen in the purchasing patterns of Generation Y individuals. In addition, the individuals of this cohort choose to support socially responsible organisations who are making concerted efforts to integrate sustainability programmes into business operations, give back to the community or actively assist in environmental conservation (Huh & Chang, 2017:127; Smith, 2012:87; Jeff et al., 2015:676). Brand loyalty, trust and a competitive advantage are some of the many benefits that organisations who implement CSR into their organisational strategies are taking advantage of (Huh & Chang, 2017:127). Consequently, developing an understanding of the environmental Generational Y consumer is imperative for organisations, as these individuals involved in tertiary education are believed to represent both the

future consumer and the future of the environmental movement (Taufique & Vaithianathan, 2018:47; Kanchanapibul et al., 2014: 528). Consequently, there is a need for organisations to develop sustainable marketing strategies targeted towards this specific cohort.

Owing to the nature of the literature explained above the following theoretical is proposed:

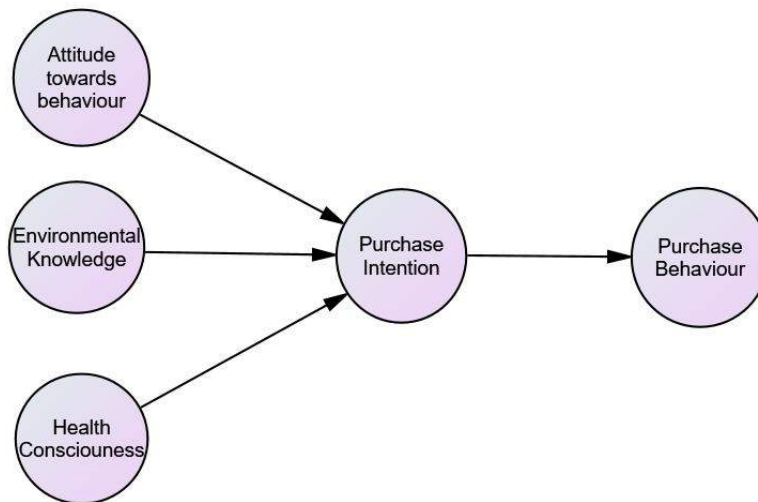


Figure 1: Proposed Model

The proceeding section outlines the methodology section of the study.

5. Research methodology

This study followed a positivism research paradigm by means of quantitative analysis. In addition, this study made use of a casual, descriptive research design. Furthermore, the collected data was captured using a cross-sectional format. The proceeding section outlines both the procedures and parameters of the data collection process.

5.1 Target population

The target population encompassed individuals of the Generation Y cohort above the age of 18 who reside in South Africa. The data collection was conducted in July 2021, and the age parameters of the targeted participants were set at 18 to 35 years. The target population components are:

- Element: South African consumers
- Sampling unit: IPSOS panel
- Extent: South Africa
- Period: 2021
- Size: 500 participants

5.2 Sampling technique and data collection

A reputable data collecting organisation, namely Global Market Research and Public Opinion Specialist, IPSOS, was employed to collect the data of this study. IPSOS was chosen by the researchers as the organisation owns a database of 40 000 participant panellists all residing in South Africa. Owing to the sheer size of IPSOS' participant pool, the sample size of a researcher is regularly achieved in full. The collection of the questionnaires ran for a period of three days, whereby only participants aged between 18 to 35 were given the option to take part in the survey.

5.3 Sample size

In order to attain a good representation of the South African population, a sample size of 500 participants was chosen. Moreover, when conducting multivariate statistics, it is advised to have a minimum of 300 case samples. In addition, various published studies similar in nature were cross-examined for their sample sizes. The studies had similar sized samples, namely Bernabeu et al.

(2022:2) (sample size: 415), Ahmed et al. (2021) (sample size: 515), Suki et al. (2021) (sample size: 440) and Rausch and Kopplin (2021) (sample size: 464). Consequently, the 500-participant sample size may be considered adequate for the study.

5.4 Measurement instrument and data collection technique

IPSOS made use of their FastFact data capturing program to complete the data collection process. This system allows participants to undertake a structured self-administered questionnaire via an online platform. The participants were only allowed to complete the questionnaire once and participants were awarded ample time to ensure questionnaire completion. Scales from prior validated studies were assessed and adapted to make up the measurement instrument. The questionnaire itself comprised two sections namely: Section A which recorded the demographics of the participants and Sections B which included the measuring scale's constructs. Based on the current literature various validated scales were used to capture the unobserved variables. These variables are presented in Table 1 below.

Table 1: Measurement of constructs

Construct	Source
Attitudes towards environmental behaviour (ATT)	Leonidou et al. (2010)
I am concerned about the environment.	
I would be willing to reduce my consumption to help protect the environment.	
I would donate part of my own money to help protect wild animals.	
I have asked my family to recycle some of the things we use.	
Environmental knowledge (EK)	Mostafa (2007)
I know that I buy products and packages that are environmentally safe.	
I know more about recycling than the average person.	
I know how to select products and packages that reduce the amount of waste ending up in rubbish dumps.	
I understand the environmental phrases and symbols on product packages.	
I know a lot about environmental issues.	
Health consciousness (HC)	(Tarkiainen & Sundqvist, 2005)
I choose food carefully to ensure good health.	
I think of myself as a health-conscious consumer.	
I think often about health issues.	
Purchase Intentions (PI)	Mostafa (2007)
Over the next month, I will consider buying products because they are less polluting.	
Over the next month, I will consider switching to other brands for environmental reasons.	
Over the next month, I plan to switch to an green version of a product.	
Environmental purchase behaviour (EPB)	Lee (2008)
When I want to buy a product, I look at the ingredients label to see if it contains things that are	
I prefer green products over normal products when their product qualities are similar	
I choose to buy green products because they are environmentally-friendly.	
I buy green products even if they are more expensive than the non-green ones.	

Source: Own compilation

The questionnaire contained a cover letter for the purpose of explaining the intent of the study, assured anonymity and purported that all results would be reported in a statistical manner. In addition, the constructs captured participants' opinions using a six-point Likert scale, the scale range from one strongly disagree to six strongly agree.

Running the questionnaire was implemented using the FastFast program. This program does not allow participants to proceed to a new section or page unless they have answered every question of that specific page. A three-day maximum time limit along with a 500-response cap (whichever was reached first) was set for the questionnaire. In this specific case, the 500-participant target was reached well before the three-day limit. Owing to these conditions, the response rate was then 100 percent.

5.5 Data analysis strategy

Data analysis was conducted using version 27 of IBM's Statistical Package for Social Sciences (SPSS) and the add on program AMOS. The data set characteristics were analysed through descriptive statistics. The validity of the measuring scale will be assessed through the Cronbach alpha coefficient (α), a confirmatory factor analysis (CFA), and a correlation analysis to assess both the relationships between the variables which also tests for multicollinearity. The study utilised common fit indices to assess model fit of the proposed model these included: the chi-square degrees of freedom ratio (CMIN/df), the (NFI), the (RFI), the (IFI), the Tucker-Lewis index (TLI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA) (Hair, Black, Babin & Anderson, 2019).

6. Results and Findings

The proceeding section encompasses the results and findings of the study.

6.1 Descriptive statistics

Descriptive statistics were employed to evaluate the data, these statistics included means, standard deviations, skewness, and kurtosis values. Owing to the use of a 6-point Likert scale, values above 3.00 were considered positive associations. The results are presented in Table 2.

Table 2: Descriptive statistics

	N	Means	SD	α value	Skewness	Kurtosis
Attitude towards behaviour	500	4.84	0.93	0.76	-1.63	3.96
Environmental knowledge	500	4.58	0.94	0.87	-1.04	1.89
Health consciousness	500	4.71	1.05	0.86	-0.98	0.99
Purchase intention	500	4.70	1.03	0.91	-1.14	1.97
Environmental purchase behaviour	500	4.37	1.08	0.85	-0.75	0.33

Source: Own compilation

Each measuring construct achieved a mean greater than 3.00, this is indicative of Generation Y consumers being environmentally concerned individuals. These individuals display positive attitudes towards environmental behaviours, regard themselves as knowledgeable over current environmental issues and display a concern for their own health. Furthermore, these individuals plan to purchase green products in the future and display positive green purchase behaviour.

The internal consistency reliability of the data set proved to be reliable as all measuring constructs achieved a Cronbach's alpha value of above 0.70 (Hair et al., 2014). Therefore, the measuring instrument may be deemed reliable. The normality, shape and range of the data set was assured through analysing the Skewness and Kurtosis values. The data's distribution and shape were considered normal as skewness values fell between +2 and -2, whilst kurtosis values fell between the normal range of +7 and -7 (Kalkbrenner, 2022; Berndt & Petzer, 2011).

6.2 Correlation analysis

Correlation analysis has many uses including assessing relationships between constructs of a measuring scale and checking if multicollinearity is present within a data set (Pallant, 2016). This study made use of the Pearson's Product-Moment coefficient to assess the underlying relationships between constructs. The correlation matrix is presented in Table 3.

Table 3: Correlation matrix

	ATT	EK	HC	PI	EPB
ATT	1				
EK	0.59**	1			
HC	0.50**	0.68**	1		
PI	0.53**	0.62**	0.66**	1	
EPB	0.48**	0.66**	0.66**	0.77**	1

**Correlation is significant at the 0.01 level (2-tailed)

ATT=attitudes towards environmental behaviour, EK= environmental knowledge, HC= health consciousness,

Source: Own compilation

As can be seen in Table 3 above, each measuring construct recorded a positive statistically significant relationship amongst every corresponding construct at the $p = 0.000 \leq 0.01$ level. All correlated relationships were classified as having a strong association with each another ($r \geq 0.50$, $p = 0.000 < 0.01$), with exception of attitude towards behaviour ($r = 0.48$, $p = 0.000 < 0.01$) which is a medium strength relationship (Pallant, 2016).

The Pearson’s Product-Moment coefficient also detects if any multicollinearity is present in the data set. Correlation coefficients greater than 0.90 are indicative of multicollinearity. As no coefficients (r) were greater than 0.90, there was no concern for multicollinearity and that data set may be said to have nomological validity (Malhotra, 2010). As the data set was free of any concerns it was then decided that it was safe to conduct SEM analysis to predict the environmental health concerns of Generation Y consumers in South Africa.

6.3 Measurement Model Analysis

To confirm the items of the latent factors, a confirmatory factor analysis using the maximum likelihood approach was conducted on the measurement model. The first item loading of each latent factor was set at 1.0. The measurement model then estimated 190 sample moments and 48 parameters with 142 degrees of freedom. A significant chi-square of 452,427 ($p = 0.000$) was achieved based on an over identified model. The measurement model can be found in Figure 2 below.

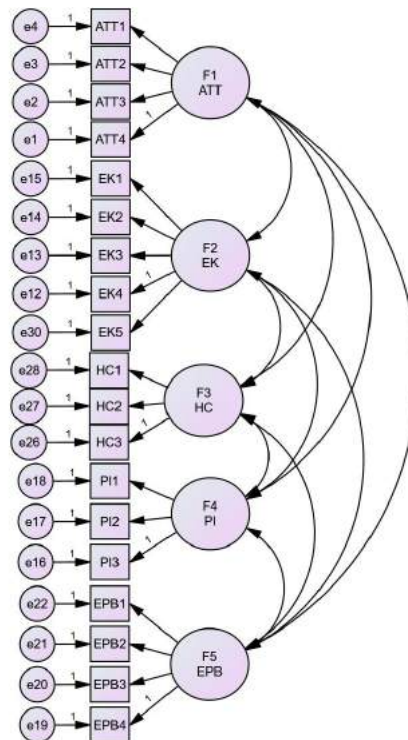


Figure 2: Measurement Model

The measurement model showcased no problematic estimates, no negative error variances were recorded, and all standardized estimates were in the specified range of -1.0 to 1.0 (Hair et al., 2014). Table 4 below illustrates the remaining analysis of the measurement model.

Table 4: Measurement Model Estimates

Latent factors	Standardised loading estimates	Error variance estimates	CR	AVE	$\sqrt{\text{AVE}}$
Attitudes towards behaviour (F1)	.644	.972	0.859	0.605	0.777
	.669	.871			
	.735	.539			
	.615	.928			
Environmental knowledge (F2)	.713	.690	0.714	0.515	0.717
	.810	.489			
	.778	.536			
	.738	.590			
	.735	.278			
Health concerns (F3)	.860	.246	0.871	0.576	0.754
	.845	.317			
	.755	.836			
Purchase intention (F4)	.882	.549	0.912	0.775	0.880
	.896	.395			
	.862	.949			
Purchase behaviour (F5)	.738	.595	0.861	0.675	0.821
	.792	.405			
	.842	.386			
	.735	.530			
Correlations	F1↔F2: 0.59	F2↔F3: 0.68			
	F1↔F3: 0.53	F2↔F4: 0.62			
	F1↔F4: 0.53	F3↔F4: 0.66			

Source: Own compilation

The measurements model's reliability was confirmed as all composite reliability (CR) values exceeded the 0.70 recommended cut of level, moreover the constructs also showed internal consistency reliability as shown in the previous section. All average variance extracted (AVE) values exceeded 0.50 and the square root of the AVE's for the independent variables were larger than the data sets bivariate correlations. Therefore, it may be inferred that discriminant validity has been achieved for the measurement model (Hair et al., 2014). Owing to a significant chi-square ($\chi^2 = 452.42$, $p = 0.000$), multiple incremental fit indices were used to determine if the measurement model had adequate fit. The indices included: GFI = 0.909, NFI = 0.910, IFI = 0.948, TLI = 0.937, CFI = 0.948, SRMR = 0.042 and RMSEA of 0.066. The results indicate that the measurement model has good fit as all incremental fit indices were greater than 0.90, whilst both the both the SRMR and RMSEA were below under 0.08 (Hair et al., 2014:631; Malhotra, 2010:732).

6.5. Structural Model Analysis

The structural model was carried out once confirmation of good model fit was achieved for the measurement model. The structural model investigated the underlying effects that the independent variables of attitude towards environmental behaviour (F1), environmental knowledge (F2) and health consciousness (F3) displays towards purchase intentions (F4). Thereafter, the structural model considered the effect with which purchase intentions has on Generation Y consumers' environmental purchase behaviour (F5). This model is depicted in Figure 3 below.

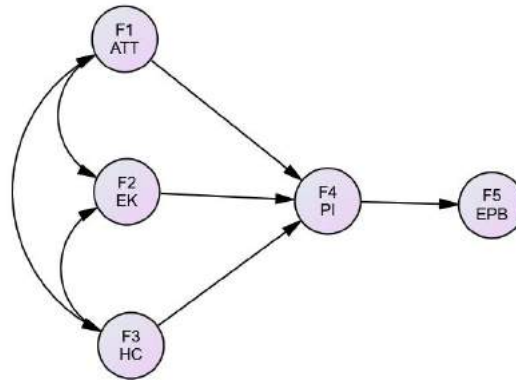


Figure 3: Proposed Model

Once again, a significant chi-square (496,701, $p = 0.000$) was produced by the structural model. Subsequently, the structural model's fit was then assessed using other incremental fit indices, namely: GFI = 0.899, NFI = 0.918, IFI = 0.941, TLI = 0.930, CFI = 0.941, SRMR = 0.050 and RMSEA of 0.070. All fit indices exceeded the recommended cut off level of 0.90 except for the GFI (0.899). The path estimates for the structural model are reported on in Table 5.

Table 5: Structural model estimates for the proposed model

Structural paths	Hypothesis	Parameter estimate (β)	P-value	Rejected / supported
Attitude towards behaviour → purchase intention	H ₁	0.230	0.019***	Supported
Environmental knowledge → purchase intention	H ₂	0.183	0.000**	Supported
Health consciousness → purchase intention	H ₃	0.478	0.000**	Supported
Purchase intention → environmental purchase behaviour	H ₄	0.894	0.000**	Supported
**Significant at the $p < 0.01$ level				
***Significant at the $p < 0.05$ level				

Source: Own compilation

All tested structural pathways were positively significant at the $p \leq 0.01$ level. The paths from attitudes towards behaviour ($\beta = 0.230$, $p < 0.05$), environmental knowledge ($\beta = 0.183$, $p < 0.01$) and health consciousness ($\beta = 0.478$, $p < 0.01$) are statistically significant predictors of Generation Y consumers' environmental purchase intentions. Moreover, environmental purchase intentions ($\beta = 0.894$, $p < 0.01$) has a significant positive influence towards environmental purchase behaviour of Generation Y consumers in South Africa. The squared multiple correlation coefficients of attitudes towards behaviour, environmental knowledge, and health consciousness, explained 65 percent of the variance in Generation Y consumers' environmental purchase intentions. In the same vein, environmental purchase intentions explained 80 percent of the variance towards Generation Y consumers' environmental purchase behaviour. The structural path estimates can be found in Figure 3.

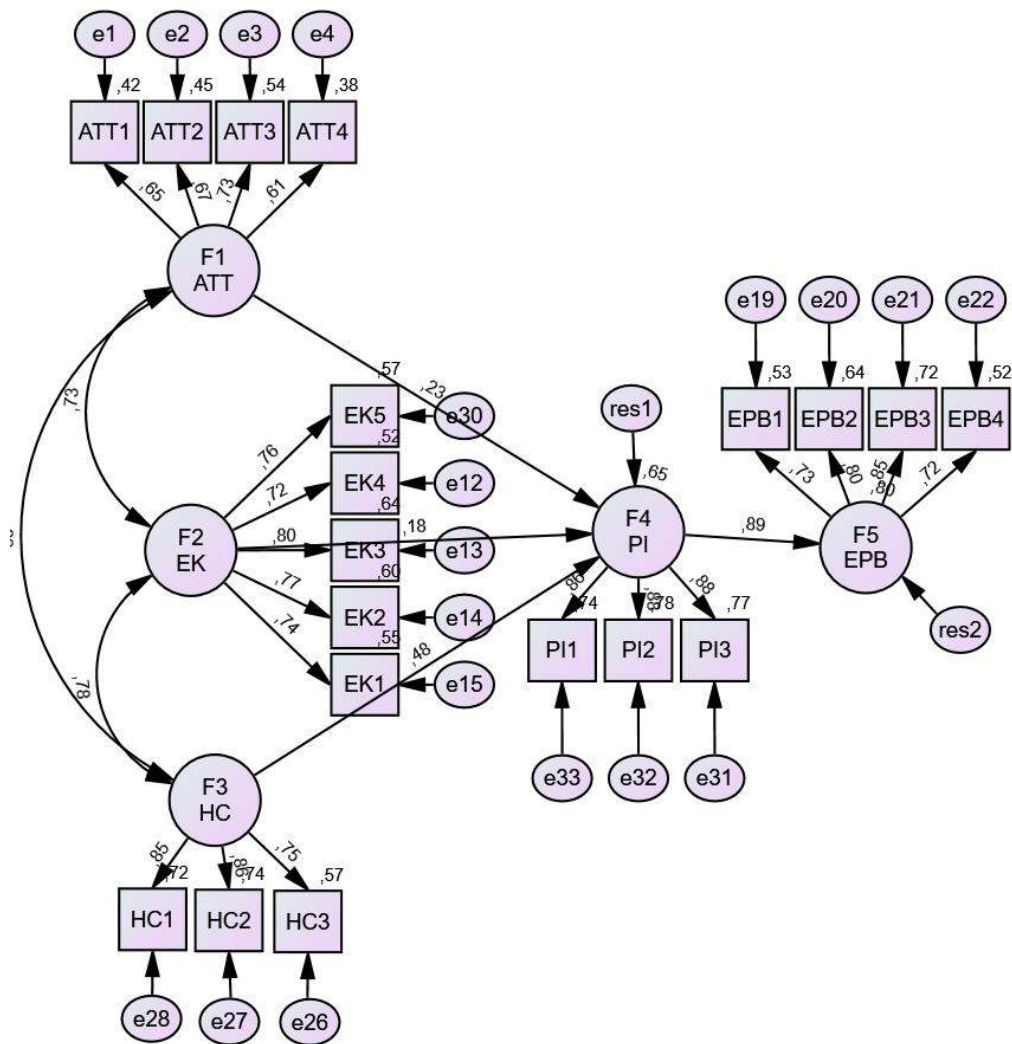


Figure 3: Structural model of Generation Y consumers health concerns

7. Discussion and Conclusion

At the forefront of the environmental movement, the current youthful Generation Y cohort are changing societal lifestyles as we know it (Taufique & Vaithianathan, 2018:47; Verma & Chandra 2018:1153; Lee, 2009: 87). This study investigated the influence with which attitude towards behaviour, environmental knowledge, health consciousness and purchase intentions portray on Generation Y consumers' environmental purchase behaviour. This objective was achieved by analysing the current theoretical literature pertaining to health concerns of Generation Y consumers and subsequently testing an empirical model containing the theoretical constructs. Confirmation of the model was done through the use of structural equation modelling using data gathered from 500 Generation Y consumers from around South Africa.

The results concluded that the independent variable of attitude towards behaviour, environmental knowledge and health consciousness display a positive significant influence towards Generation Y consumers' intent to purchase green products. In addition, the study also concluded environmental purchase intent has a direct positive significant effect of increasing green purchase behaviour of Generation Y consumers.

This study found that the biggest driver of environmental preservation were consumers own personal health concerns. These health concerns foster positive environmental purchase intent, it is these health concerns that need to be exploited to encourage consumers to purchase environmentally friendly alternative products. As such, health concerns are imperative for the success of the green

movement as these consumers concerns directly contribute to buying behaviours pertaining to green or environmentally friendly products (Bizcommunity, 2017; Xie et al., 2015). The lowest, yet still positively significant path, was that of environmental knowledge. Increasing knowledge regarding environmental problems will most likely lead consumers to behave in a pro-environmental manner, as was the case in the works of both studies by Taufique and Vaithianathan (2018) and Yadav and Pathak (2017). Generation Y consumers attitudes towards green behaviour harbours strong intent to purchase green products. A favourable attitude towards any behavioural engagement situation would most likely result in positive behaviour thereof (Ajzen, 1991), the same can be applied to green products. Closely linked to the Theory of Planned Behaviour, purchase intention largely influences green product purchase behaviour. This holds true for today's health-conscious Generation Y consumer, marketing to this cohort is imperative for the future of this movement.

This study contributed to the literature of environmental purchase behaviour in which the Generation Y consumer in South Africa showcased strong intent to become environmental product purchasers. This find is important as this cohort are society's future influencers, trend setters, brand ambassadors of the world and more importantly the future leaders of the country (Chaudhary & Bisai, 2018; Taufique & Vaithianathan, 2018:47; Kanchanapibul et al., 2014: 528). Owing to today's technology of instant information available at your fingertips this cohort can quickly spread positive word of mouth, however, the opposite can also occur damaging an organisations reputation in an instant. Huh and Chang (2017) explain how the correct environmental business strategy may lead to new market share and award the organisation with a competitive edge over competitors who fail to implement greener strategies in their business models.

8. Managerial implications

The focus of this study was intended to showcase the potential of marketing to the lucrative South African Generation Y consumer. In addition, the study concentrates on environmental health concerns experienced by Generation Y consumers in South Africa.

This study highlights the need for using consumers environmental concerns to incorporate environmentally friendly methods in both business operations and/or products. Organisations seeking to capture the Generation Y market segment must create a culture within their business strategy which aims to improve the attitudes of green products, highlight or increase environmental knowledge, home in on the health benefits environmental products have on both the environment and consumers health (organic products). Furthermore, organisations can emphasis greener practices in their daily business operations to enforce a greener culture. These steps may attract a new environmentally conscious consumer who show great potential to purchase and behave in a pro-environmental manner.

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HUMAN RESOURCE MANAGEMENT



Assuming Data Integrity and Empirical Evidence to The Contrary

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Keywords

Research ethics; Data integrity; Measurement invariance; Common method bias

Abstract

Background: Not all respondents to surveys apply their minds or understand the posed questions, and as such provide answers which lack coherence, and this threatens the integrity of the research. Casual inspection and limited research of the 10-item Big Five Inventory (BFI-10), included in the dataset of the World Values Survey (WVS), suggested that random responses may be common.

Objective: To specify the percentage of cases in the BFI-10 which include incoherent or contradictory responses and to test the extent to which the removal of these cases will improve the quality of the dataset.

Method: The WVS data on the BFI-10, measuring the Big Five Personality (B5P), in South Africa (N=3 531), was used. Incoherent or contradictory responses were removed. Then the cases from the cleaned-up dataset were analysed for their theoretical validity.

Results: Only 1 612 (45.7%) cases were identified as not including incoherent or contradictory responses. The cleaned-up data did not mirror the B5P-structure, as was envisaged. The test for common method bias was negative.

Conclusion: In most cases the responses were incoherent. Cleaning up the data did not improve the psychometric properties of the BFI-10. This raises concerns about the quality of the WVS data, the BFI-10, and the universality of B5P-theory. Given these results, it would be unwise to use the BFI-10 in South Africa. Researchers are alerted to do a proper assessment of the psychometric properties of instruments before they use it, particularly in a cross-cultural setting.

1. Introduction

When casually examining the items of the personality assessment part of the World Values Survey (WVS) (Inglehart et al., 2014), the data presented seemed to be at odds with the structure of the Big Five Personality (B5P) conceptualisation (Costa & Macrae, 1985). The instrument used in the WVS was the 10-item Big Five Inventory (BFI-10) (Rammstedt & John, 2007), which measures with two items each the constructs of extraversion, agreeableness, openness, conscientiousness, and neuroticism. When analysing the full data set on the BFI-10 for confirmatory as well as exploratory factor analyses, a very poor fit was found (Ndofirepi & Steyn, 2022b), even after removing cases based on literacy and language proficiency (Ndofirepi & Steyn, 2022a). The matter which leads to alarm was that respondents provided obviously contradictory answers to some questions. For example, on a question on extraversion, some respondents provide affirmative replies to two contrasting items, stating “I am reserved” and “I am outgoing”. This raises serious questions about the respondent’s motivation, the instrument properties, and the interaction between the two.

The BFI-10 seems to function in a manner contrary to the B5P theoretical structure in the South African context. Ignoring the possibility of differential functioning of an instrument has the potential to compromise any substantive interpretations and comparisons resulting from the measurement

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(Salzberger, Newton, & Ewing, 2014). Only once construct comparability is demonstrated does it become possible to interpret differences in test or scale scores as true representations of differences explained by group membership (Wu, Li, & Zumbo, 2007). This is referred to as measurement invariance, which reflects the extent to which an observed score on the measurement is reflective of an individual's standing on a construct, independent of his or her group membership (Meredith, 1993; Meredith & Millsap, 1992). The National Institute of Education and American Psychological Association Standards, for example, lists differential validity and differential prediction as a major concern of test fairness (Pässler, Beinicke & Hell, 2014). These concerns are in line with the requirements of the South African Employment Equity Act (Act 55 of 1998), which takes a strong stance against the adverse impact of psychometric testing.

The research aims to assess the magnitude of contradictory responses in the personality part of the VWS, and to assess whether the respondent who provide more coherent responses were more vigilant during the interviews, and whether the psychometric properties of the BFI-10 improves when the data was cleaned. Would removing the responses from clearly incoherent respondents assure that the remaining data is compatible with the B5P conceptualization?

2. Literature review

The Big Five Personality (B5P) (Costa & Macrae, 1985; McCrae & Costa, 1992) conceptualisation has a long history (Tupes & Christal, 1961/1992; Norman, 1963), and the five-factor structure has been proven as a robust predictor of individual differences in a variety of situations (Aglim & Horwood, 2021; Sun, Kaufman, & Smillie, 2018; Bui, 2017; Trapmann, Hell, Hirn, & Schuler, 2007; Vedel, 2016; Barrick & Mount, 1991; Pletzer, Bentvelzen, Oostrom, & De Vries, 2019; Van der Linden, te Nijenhuis, & Bakker, 2010). The B5P trait taxonomy is well established (John, 2021) and widely accepted, and at least at a configural level, a valid measure of personality in several, if not most contexts (Minkov, van de Vijver, & Schachner, 2019).

The items of the BFI-10 instrument (Rammstedt & John, 2007), as presented in the WVS, are shown in the table below. The BFI-10 form part of a new generation of short versions of the B5P assessment tools (Gosling, Rentfrow, & Swann, 2003; Langford, 2003; Soto & John, 2017), with other examples being Donnellan, Oswald, Baird, and Lucas's (2006) 20-item mini International Personality Item Pool-Five Factor Model (IPIP-FFM), and Gerlitz and Schupp's (2005) 15-item Big Five Personality Inventory (BFI-S).

Table 1: BFI-10 items and their quantification

Items: I see myself as someone who ...	B5P traits	Reverse coding
... is reserved	Extraversion	Yes
... is generally trusting	Agreeableness	No
... tends to be lazy	Conscientiousness	Yes
... is relaxed, handles stress well	Neuroticism	No
... has few artistic interests	Openness	Yes
... is outgoing, sociable	Extraversion	No
... tends to find fault with others	Agreeableness	Yes
... does a thorough job	Conscientiousness	No
... gets nervous easily	Neuroticism	Yes
... has an active imagination	Openness	No

Source: Adapted from Rammstedt and John (2007)

The BFI-10 is widely used (Balgiu, 2018; Kunnel John, Xavier, Waldmeier, Meyer, & Gaab, 2019; Sudzina, 2016) and was also included in the World Values Survey (6th Wave).

From table 1 it can be observed that half the items are reverse coded. It would thus be expected that those who answer affirmatively to "I am reserved" should answer disaffirming or negatively to "I am outgoing", if the responses are aligned to the B5P conceptualisation of Extraversion. Should the data not fit the conceptualisation, the theory, the motivation of the respondents, the quality of the

instrument, and the quality of the theory within the specific context where the instrument was used, should be questioned. One way of addressing this matter would be to consider measurement invariance testing. Do the people of a specific group perceive the questions in accordance with the proposed theory or is the theory applicable to the people from that group? This type of incomparability or inequivalence is an ever-present threat to the reliability and validity of personality scales in cross-cultural studies (Berry et al., 2011), and should be tested for. At a construct level, certain constructs may uniquely pertain to particular groups only; at a method level, the instrument may not measure the construct it is supposed to measure (due to translation errors, acquiescent responding, and group-influenced response patterns), and at an item and latent construct level, the construct indicator (the item) may systematically demonstrate a higher or lower score than expected with a particular group (Fontaine, Poortinga, Delbeke, & Schwartz, 2008; Meiring et al., 2005; Van de Vijver & Tanzer, 2004). The problem of group differences at item and construct level can be evaluated through test of measurement invariance (Jak et al., 2015).

A further concern in this study may be common method bias (CMB), where response patterns, rather than the respondents' standing on a construct, create systematic covariation between variables (Rodríguez-Ardura & Meseguer-Artola, 2020). Providing a high score at "I am reserved" and "I am outgoing" could be a perfect example of CMB, where respondents answer high on all items, irrespective of their standing on particular items. CMB may be present in the WVS as it is a lengthy questionnaire, which may lead to respondent fatigue, and subsequent systematic responses (Burisch, 1997; Podsakoff, MacKenzie, & Podsakoff, 2012). The questions in the BFI-10 may also be difficult to translate, and it is also known that ambiguity contributes to systematic answering of questions (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The fact that WVS data is collected through interviews, thus limiting anonymity of the respondents, may moderate the response patterns of the respondents, soliciting socially desirable responses, which is also associated with CMB (Steenkamp et al., 2010). To the credit of the WVS, it should be mentioned that the response format of the questions differed from section to section, which counters similarity in response patterns (Podsakoff et al., 2012). Given these concerns, it was decided to test for CMB as a possible reason for the incoherent and seemingly contradictory responses found in the WVS BFI-10 data.

3. Method

This section discusses the study's design, data gathering procedures, research methods used, and ethical concerns.

3.1 Design

This study is based on an analysis of cross-sectional data gathered in South Africa as part of the WVS, with the 10-item Big Five Inventory (BFI-10) of Rammstedt and John (2007), included in the survey, as the main focus of the study.

3.2 Sampling

The collection of data is described in detail on the WVS website, and data from South Africa was used in the study. The WVS, as well as the agencies used to collect the data, employed all reasonable resources to enable the random sampling of individuals.

3.3 Measurement instrument

The BFI-10 (Rammstedt & John, 2007) was used to collect data on B5P constructs. The items as well as their relationship to the five personality traits are clearly presented in table 1. Respondents were required to answer to statements with five response categories ranging from 1, "strongly disagree" to 5, "strongly agree".

One more measure was used, also from the WVS, namely item V251, where the interviewer needed to report on the respondent's level of interest during the interview. Here the reported responses varied from 1, "The respondent was very interested", to 2, "The respondent was somewhat interested", to 3, "The respondent was not interested". Thus, low score indicated high levels of interest.

3.4 Methodology

The first aim of the study was to identify the number of incoherent cases in the sample, and this was done through creating three subgroups, with only one representing the coherent cases. A new variable was created to identify incoherent cases. The reasoning behind creating the variable was as follows: “There are 10 items in the questionnaire, half of which requires reverse coding. Should a group of respondents have strong views about all their traits, their response patterns should include five affirming (with scores of 5) and five disaffirming (with scores of 1) responses (see table 1), which when added, leads to a score of 30. Also, should another group of respondents have moderate views on their traits, their response patterns should include five semi-affirming (with scores of 4) and five semi-disaffirming (with scores of 2) responses, which when added, leads to a score of 30, the same scores of those with stronger views. Responses incoherent with the B5P theory, and the method in which it was measured in the VWS, would be responses which adds up to, say 50, where all questions were answered affirmatively (with scores of 5 on each item). Also, total scores of 10, which would indicate that all items were responded to negatively (with scores of 1 on each item), would be counter to the dynamics or logic proposed in the instrument. In general, it could be expected that a considered interpretation of the questionnaire would result in a score of plus-minus 30”.

Three groups were created, based on the argument above: One group to include respondents with scores lower than 25 (25/50), one with scores around 30 (30/50), and one with scores higher than 35 (35/50). The middle group were considered as those who provided coherent responses. The number of respondents per group is presented in the results section.

Next, the level of interest in the interviews, for the newly developed groups, were calculated. This was presented as a cross tabulation, and the impact was assessed by calculating chi-square. The mean scores of this ordinal data were also calculated, and compared using analyses of variance (ANOVA), for statistical significance, and Cohen d-scores, for practical significance (Hair, Black, Babin, & Anderson, 2010).

Thereafter, exploratory factor analyses (EFA) were performed, as a first step in testing for measurement invariance. This was done for all three groups; the groups were based on their total personality score. The aim was to determine if the number of factors and their loading patterns are consistent with the theory and across groups (Bialosiewicz, Murphy, & Berry, 2013). These were done following Kaiser’s rule regarding eigenvalues, where the natural fit of the data will be obtained when only factors with values more than 1 is included in the explanatory model. Structural equation modelling (SEM), often used as a test for structural validity (Boer, Hanke, & He, 2018; De Roover & Vermunt, 2019; Putnick & Bornstein, 2016; Vandenberg & Lance, 2000), was also applied in the past to test for the B5P structure (Marsh, Lüdtke, Muthén, Asparouhov, Morin, Trautwein, & Nagengast, 2010). Confirmatory factor analyses (CFA) were thus performed next. No tests of measurement invariance were performed, as it was clear after performing the EFA and the CFA that, even at a configural level, the groups were not mirroring the B5P conceptualisation.

Lastly, the test for common method bias (CMB) was performed. The Harman’s single-factor test, which is widely used as a statistical tool that detects CMB (Fuller, Simmering, Atinc, Atinc, & Babin, 2016), was applied. Here the rule-of-thumb is that if no more than 50% of the variance is captured in the first factor created in an EFA (Fuller et al., 2016), the instrument is free of CMB.

4. Results

Data for the 6th wave of WVS were collected in South Africa in 2013, and 3 448 responses were collected. From these, 48.3% were men and the rest, 51.7% female. The average age was 37.72 years, with a standard deviation of 15.67. Regarding ethnicity, blacks were the largest group, with 76.5% of the respondents, followed by whites, which made up 12.1% of the sample.

After creating groups based on deducted response patterns, as explained in the method section, most of the responses seemed to fall outside what would be deemed reasonable responses.

Table 2: Groups created based on response patterns: Coherent and incoherent responses

Group	Frequency	Per cent	Valid Per cent	Cumulative Per cent
Less or = 25/50 (Incoherent responses)	324	9.2	9.7	9.7
Around 30 (Coherent responses)	1 612	45.7	48.4	58.2
More or = 35/50 (Incoherent responses)	1 391	39.4	41.8	100.0
Total	3 327	94.2	100.0	-
Missing	204	5.8	-	-

Source: Author's own work.

Next analyses were performed on the created groups (see table 2). Table 3 is about the interest shown during the interview, and in this table the level of interest, as assessed by the interviewer, is presented per group.

Table 3: Cross tabulation of response patterns and interest showed during the interview

Personality score		Respondent			Total
		was very interested	was somewhat interested	was not interested	
Less or = 25/50 (Incoherent responses)	Count	198	101	25	324
	E-Count	189.0	111.7	23.4	324.0
	Percentage	61.1%	31.2%	7.7%	100.0%
Around 30 (Coherent responses)	Count	843	631	138	1 612
	E-Count	940.2	555.6	116.3	1 612.0
	Percentage	52.3%	39.1%	8.6%	100.0%
More or = 35/50 (Incoherent responses)	Count	900	415	77	1392
	E-Count	811.9	479.8	100.4	1392.0
	Percentage	64.7%	29.8%	5.5%	100.0%
Total	Count	1 941	1 147	240	3 328
	E-Count	1 941.0	1 147.0	240.0	3 328.0
	Per cent	58.3%	34.5%	7.2%	100.0%

Note: E-Count is the expected count.

Source: Author's own work.

In total, 61.1% of respondents in the "Less or = 25/50" group were very interested in the interview, with only 52.3% in the "Around 30" group, and then again a high percentage, 64.7% of respondents in the "More or = 35/50". The same pattern repeats itself across the other dimensions of interest in the interview, which was surprising.

When performing the chi-square test on the table presented above, the chi-square value is 49.673, with $p < .001$ ($df=4$). This indicates differences across cells. To specify or affirm where these differences were most pronounced, the mean score on interest in interviews were calculated per group.

Table 4: Mean scores on interest in the interviews, per group

Group	N	Mean	Std. Dev.	Std. Error	95% CI Lower Bound	95% CI Upper Bound
Less or = 25/50 (Incoherent responses)	324	1.46	0.634	0.035	1.39	1.53
Around 30 (Coherent responses)	1 612	1.56	0.647	0.016	1.53	1.59

More or = 35/50 (Incoherent responses)	1 391	1.41	0.594	0.016	1.38	1.44
Total	3 327	1.49	0.628	0.011	1.47	1.51

Source: Author's own work.

The highest mean score on interest in the interview was in the "Around 30" group. High scores represent a low level of interest during the interview. When conducting an analyses of variance, differences seem clear in these scores ($F(2, 3324) = 23.137, p < .001$). "Less or = 25/50" was smaller than "Around 30", with Cohen d-values of .159, and "More or = 35/50" was also smaller than "Around 30", with a Cohen d-value of .238. The differences were small to medium, at a practical significance level. The group which thus showed the highest level of interest in the interviews were those in the "More or = 35/50" group, with the "Around 30" being the least interested.

These results were not expected, as the higher the score on interest in the interview, the lower actual interest is, given that "The respondent was very interested" were allocated a score of 1, "The respondent was somewhat interested" attracted a score of 2, and "The respondent was not interested" were allocated a score of 3.

Next measurement invariance and structural validity were addressed. To test if the BFI-10 structure is more pronounced in the data where coherent responses were provided ("Around 30"), EFA were performed, first for the "Less or = 25/50", "Around 30", and also "More or = 35/50" groups. For "Less or = 25/50" four factors had eigenvalues larger than 1, and these declared 60.99% of the variance in the data. With the "Around 30" group, three factors had eigenvalues larger than 1, explaining only 48.42% of the variance in the dataset. "More or = 35/50" also had three factors with eigenvalues larger than 1, explaining 46.80% of the variance. The results of the Principal Component Analysis extraction and the Varimax with Kaiser Normalization rotation for all three groups are presented. Only factor loadings of more than .4 are presented in table 5.

Table 5: Factor loadings for BFI-10 for "Less or = 25/50", "Around 30", and "More or = 35/50"

	Less or = 25/50 (Incoherent responses)				Around 30 (Coherent responses)			More or = 35/50 (Incoherent responses)		
	1	2	3	4	1	2	3	1	2	3
E(R)	.804	-	-	-	-.721	-	-	.741	-	-
A	.789	-	-	-	.655	-	-	.698	-	-
C(R)	.542	-	-	-	-.617	-	-	.657	-	-
N	-	.859	-	-	.616	-	-	-	.699	-
O(R)	-	.708	-	-	-.495	-	-	-	.682	-
E	-	-	.813	-	-	-	-	-	.567	-
A(R)	-	-	.681	-	-	.734	-	-	.430	-
C	-	-	-	.643	-	-.663	-	-	-	.754
N(R)	-	-	-	.599	-	-	.818	-	-	.747
O	-	-	-	-.577	-	-	.649	-	-	.488

Note: All values smaller than .04 were suppressed; E=Extraversion, A=Agreeableness, C=Conscientiousness, N=Neuroticism, O=Openness, R=Reverse coding

Source: Author's own work.

From the table above, three things can be observed. In the first place, the number of factors extracted, using the Keiser rule, did not end up at the theorised number of five. Secondly, the expected loading pairings of E(R) and E, A and A(R), C(R) and C, N and N(R), as well as O(R) and O, where both indicators of a personality dimension load on the same factor, did not materialise either. Thirdly, the positive-negative loading expected per pair of indicators did not materialise as expected, not even in the middle ("Around 30") model. Even when forcing the data into a five-factor solution (not reported here), the results did not resemble the theorised model. When performing CFA on this data, the results

were also dismal (see Ndofirepi and Steyn, 2022a). No specific tests on measurement invariance were performed, as it was evident that the B5P model were not observable in any of the groups.

For the test of CMB, the Harman's single-factor test (Fuller et al., 2016) was applied to the total group as well as the three sub-groups. For the whole group, the first factor attracted 41.88% of the variance in the data. For the subgroup "Less or = 25/50" it was 22.35%, for "Around 30" it was 23.67%, and for "More or = 35/50" it was 22.02%. All these values were significantly less than the rule-of-thumb of 50% (Fuller et al., 2016), and this suggests the absence of CMB.

5. Discussion

The aim of the study was to demonstrate how, through cleaning up data, and by discharging cases with incoherent responses, the quality of the data can be improved. In this study, the focus was on a small part of the WVS, namely the personality part of the survey, and particularly the BFI-10. The BFI-10 measures the B5P constructs, and incoherent responses on this instrument were used to divide the respondents into groups of those who were presumed to be attentive (providing coherent responses) and those who were not attentive (providing incoherent responses).

The sample was relatively large (N=3 531), and randomly drawn, representing a wide range of South African citizens. Using coherent and incoherent response patterns as a guideline, three groups were created. The group of coherent responses was smaller than that of the incoherent responses, with only 1 612 (45.7%) of the respondents judged as providing coherent responses on the BFI-10.

Contrary to what was expected, those who provided coherent answers were reported to show less interest during the interview. This was demonstrated using the chi-squared test as well as analyses of variance. These differences had a small to medium practical significance.

When using the data from the three created groups, in neither case did the data resemble the B5P structure, not in terms of the number of factors, nor on the factor loadings. These results were surprising, as in an earlier study Ndofirepi and Steyn (2022a) were able to find the B5P structure in WVS data collected in the Netherlands and Germany. The reasoning was that "cleaning up" the South African data would result in similar results. Cleaning up the data had no effect on exposing the B5P structure in BFI-10 data in South Africa. Ludeke and Larsen (2017) also expressed concerns regarding the BFI-10 in the WVS.

Problems with the application of the B5P in foreign contexts are not uncommon (Gurven, Von Rueden, Massenkoff, Kaplan, & Lero Vie, 2013; Meisenberg, 2015; Minkov, van de Vijver, & Schachner, 2019; Spector, Liu, & Sanchez, 2015), although in the South African context these problems seem minimal in previous studies (Abrahams & Mauer, 1999; Hill, Adams, De Bruin, Nel, Van de Vijver, Valchev, & Meiring, 2013; McDonald, 2011). This is somewhat understandable, as South Africa is firmly a non-Westernised, Educated, Individualistic, Rich and Democratic (WEIRD) country (see Steyn, 2022), and problems regarding replicating the B5P mostly occur in non-WEIRD populations (Doğruyol, Alper, & Yilmaz, 2019; Laajaj et al., 2019).

It was not possible to demonstrate that when incoherent cases are removed from the dataset, that the instruments' psychometric properties improved. The B5P configuration was not found using EFA nor CFA, in neither of the groups.

The matters presented in the previous paragraph relate to response style (Rammstedt & Krebs, 2007). However, it could also relate to the nature of short tests, where some suggest problems with short measures of the B5P (Chapman & Elliot, 2019; Rammstedt, Danner, Soto, & John, 2018). Here the misunderstanding or the incorrect translation of one item could have catastrophic consequences.

The unexpected results may also be that the strategy applied in this research, to eliminate incoherent responses failed to improve the quality of the dataset. The coherent responses were "Around 30", which reflects coherent scores (as explained in the method section of this article), but also sets of

middle scores, of 3, 3, 3 and 3, as an example. It could well be that interviewers who witness such response patterns would easily judge such a respondent as not interested in the interview. This may explain the only part of the “failed” results, hypothesising that the “Around 30” group showed real interest during the interviews. However, the argument that extreme high or low total scores are indicative of not comprehending the content of the questions is more viable than the argument that “Around 30” scores are exclusively the result of a 3, 3, 3 and 3 responses. No explanation for these results can be presented, apart from that the B5P concept or the BFI-10 methodology is foreign to the South African context.

Given these results, researchers are alerted not to use the BFI-10 data, which resulted from the WVS as administered in South Africa, as being credible and are encouraged not to proceed with analyses unless a proper assessment of psychometric instruments is done. On a broader and more general level, researchers are encouraged to do proper assessment of instruments before they use them, particularly in a cross-cultural context. Professional bodies and regulators of psychometric instruments could also enhance research integrity. This could be done through awareness programmes, setting clear operational guidelines or funding research which focus on the use of “imported” instruments in the local context.

6. Conclusions

Few people could argue that cleaning up data is important, as not all respondents apply their minds or understand the questions and will as such provide answers which lack coherence; this threatens the integrity of a research project. However, this study failed to provide evidence that removing cases with seemingly incoherent responses from the dataset improved the psychometric properties of the instrument. It was concluded that either the strategy used to remove cases failed, or alternatively, that the B5P theory, or most likely, the BFI-10 methodology is invalid in the South African context. Researchers interested in applying psychometric instruments in a cross-cultural context should take note of these findings and are cautioned not to use data without thoroughly testing the psychometric properties of the instrument, particularly when the instrument is short in length, and even if the instrument is based on well-established theories and is widely used.

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Developing Measures to Alleviate Graduate Unemployment in Mahikeng Municipality

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Keywords

employment, unemployment, graduates, skills, training, internship, government, work experience

Abstract

In South Africa, graduate unemployment is a serious problem, with many graduates finding it difficult to find employment in the mainstream sector. To address the issue, this study was aimed at developing measures to alleviate graduate unemployment in Mahikeng municipality. The Human Capital Theory asserts that formal education is highly helpful and appropriate for enhancing a population's productive potential, and this study is based on that theory. The study adopted a qualitative research method and a social constructivist paradigm. Unemployed graduates, employees of Local Economic Development (LED), Broad-Based Black Economic Empowerment (BBBEE), and Small, Medium, and Micro Enterprises (SMMEs) were among the 35 participants whose data were collected online. The findings show that the schools attended, work experience, educational qualifications, gender, skills and level of training, nepotism, and racism all have an impact on graduate employability. According to the findings, the South African government's initiatives to reduce graduate unemployment have not been productive. In this case, the study recommends that the government should get involved in career management, training and development, internship programmes, labour and legislative improvement, entrepreneurial development, youth development policies and public strategic management in a bid to address graduate unemployment in Mahikeng.

1. Introduction

Unemployment refers to those who are employable and actively looking for employment but are unable to find one when needed. South Africa's consistently rising unemployment rate is cause for concern, as few young people find employment in the mainstream sector (Shanker, Cooper & Koi, 2015:6). According to the Department of Trade and Industry (DTI) (2019:24), these jobless people will most likely rely on provincial survival funds to fulfil their basic needs. This socio-economic issue adversely affects the government's finances and raises questions about South Africa's social and economic viability. In 2015, the unemployment rate was 24.5 %; in 2016, it was 26.5 %; in 2017, it was 26.7 %; and in 2018, it was 27.1%, rate of unemployment has continued to rise, reaching 29.1% in 2019, 35.1 % in the second quarter of 2020, and 32.5 % at the end of the year (Statistics South Africa, 2020).

Unemployment among graduates is a global issue that affects both developing and developed countries. However, while the South African government is concerned about youth unemployment in general, it is less concerned about graduate unemployment, and research on the subject is scarce. As a result, the goal of this research is to look into potential measures to increase the employability of unemployed graduates in the Mahikeng municipality of the North-West Province of South Africa.

The labour force keeps on increasing every year, rising from 21 211 in 2015 and 23 452 in 2020. This suggests that more jobs should be created every year to accommodate the marked growth in the labour force. Also, the North-West province (the study area) is in the fourth position out of 9 provinces regarding the high unemployment rate.

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It is generally held that those with higher educational credentials have a competitive advantage in the labour market due to improved job opportunities. Often these graduates find it difficult to get into the South African graduate labour market since their skills do not match the market's requirements (Van Broekhuizen, 2015:5). While South Africa has undergone significant changes since 1994, South African graduates continue to face major job problems, endangering their own and the nation's futures.

A number of study gaps must be filled in order to determine if people who are unemployed are structurally or frictionally unemployed. Despite the contradictory claims, there is still a scarcity of research on graduate unemployment. There is a need for immediate strategies to alleviate graduate unemployment and to create jobs in all sectors so that the graduates could be absorbed immediately after graduation as graduate unemployment continues to rise in South Africa's North-West province.

2. Problem Investigated

It is generally held that those with higher educational credentials have a competitive advantage in the labour market due to improved job opportunities. Moreover, as Kraak (2013:77) points out, such an advantage is not always available to all graduates due to certain labour market factors. Often these graduates find it difficult to get into the South African graduate labour market since their skills do not match the market's requirements (Van Broekhuizen, 2015:5). While South Africa has undergone significant changes since 1994, South African graduates continue to face major job problems, endangering their own and the nation's future.

Therefore, some study gaps must be filled to determine if people who are unemployed are structurally or frictionally unemployed. There is a need for immediate strategies to alleviate graduate unemployment and to create jobs in all sectors so that the graduates could be absorbed immediately after graduation as graduate unemployment continues to rise in South Africa's North-West province.

3. Research Objectives

The research questions that this study seeks to address are as follows:

- What are the social-economic factors that act as a determinant of the employment status of graduates in Mahikeng municipality?
- What measures could be developed and adapted to enhance the employability of unemployed graduates in Mahikeng municipality?
- What recommendations could be made to alleviate graduate unemployment in Mahikeng municipality?

4. Hypotheses

The following hypotheses were formulated for the study:

- H1: Social-Economic factors are not adhered to when considering employment of graduates.
- H2: There are not sufficient measures to encourage employment of graduates.

5. Ethical considerations

A written consent letter was offered to each department to inform them about the proposed study. On acceptance, the details of the senior officials were collected for online interviews. Ethics clearance was obtained for this study and all Covid-19 protocols were adhered to.

6. Literature Review

6.1 Human Capital Theory

According to the Human Capital Theory, a country's performance is determined by its physical and human capital assets (McCracken *et al.*, 2017:49). The numerous investments in education and training that people create are explained in terms of projected returns. According to the Human Capital Theory, formal education is highly beneficial and suitable for increasing a population's productive capacity (Longley, 2019:1). The Human Capital Theory states that education increases the quantity of cognitive stock of economically viable human ability, which is a product of instinctive abilities and human investment. Longley (2019:1) affirms that human resource investment assists countries in achieving sustainable economic development. Individual rewards in the form of personal

economic achievements have been confirmed to be a result of these investments. Many economists argue that the character and speed of a country's economic and social growth are determined by its human resources rather than its capital or material resources. Human resources are therefore the most important component of a country's wealth (McCracken *et al.*, 2017:49).

The Human Capital Theory outlines how a worker's educational credentials correlate with increased income over the course of their career. The benefits of investing in education motivate individuals to set higher premiums on skills development through education. According to the human capital hypothesis, education boosts worker productivity (Holden & Biddle, 2017: 537). It accomplishes this through enhancing workers' knowledge and skills, which boosts the future wages of workers by increasing their lifetime earnings. According to Wright and Constantin (2021: 152), education and training improve future earnings. Also, according to Marginson (2019: 288), people with better education had higher age-earnings profiles with later peaks and steeper age earnings than those with less education.

Employees with more education, on the other hand, may start with lower pay than those with less education, but they quickly make up and earn more on average over the length of their careers. In addition to improved wages, Holden and Biddle, (2017:538) state that investing in education leads to enhanced work satisfaction throughout a person's lifetime as well as a stronger appreciation of non-market activities and hobbies.

6.2 Causes of graduate unemployment

Several factors are found to be central in graduate unemployment across the globe. In South Africa, Mncayi (2016: 64-66). Chinyamurindi and Mjoli (2018:3) identified, outlined and explained nine factors that determine the employment status of graduates. Jobs availability, wage expectations, insufficient labour market information, discouragement from the labour market, skills-education mismatches and types of jobs available, degree choices, job search activities, higher education institution attended, race, and gender are some of these factors. These factors include availability of jobs: employability, high wage expectations, economic circumstances, mismatches in skills, lack of experience in applying for jobs, inadequate labour market information, the quality of tertiary education received, forms of discrimination, and high expectations.

Furthermore, the lack of soft skills in graduates complicates the chances of their employment, limiting their performance in interviews and their respective positions. Many graduates, according to Mukasa (2019: 24), lack "soft skills," such as time management, communication, and creative thinking, or are unable to work independently. Higher education is regarded to create knowledge, skills, abilities, and beliefs (together referred to as "graduate-ness qualities") that are out of sync with employer standards and expectations, as well as the demands of a rapidly changing workplace, to varying degrees (Mncayi, 2016:68). Graduates' employability is determined by a number of criteria, including life skills, soft skills, work ethic, and independent thinking (Abel *et al.*, 2019:233). Employers respect higher education's conceptual basis, expertise, and intellectual approach to jobs, highlighting the need to address graduates' lack of soft skills.

Unemployment caused by a mismatch between job seekers' abilities and available positions on the market is referred to as structural unemployment. Structural unemployment refers to long-term unemployment induced by fundamental economic developments. Some of these economic changes are structural issues that often cause unemployment (Morsy & Mukasa, 2019:24).

According to Harry, Chinyamurindi, and Mjoli (2018:5), the push of globalisation to specialize in specific sectors of study in order to remain competitive is connected to the structural change in graduate demand. Demand shocks are transferred into graduate unemployment (Bushe, 2019:3), resulting in a shift in graduate demand and, as a result, a mismatch between demand and supply.

6.3 Consequences of graduate unemployment in South Africa

Unemployment has a variety of personal and negative social consequences. According to Matsilele (2015:5), these include severe financial hardship and poverty, debt, destitution and housing stress, family tensions and malfunction, boredom, alienation, shame and stigma, increased social isolation, crime, loss of confidence and self-esteem, deterioration of work skills, and illness. In addition, Leschke and Smith (2020:25) demonstrated in the findings of their study that unemployment is also the major cause of depression among young people across Europe. This form of depression is more common among young graduates who were unable to find jobs after graduation and those who were sacked from their jobs. In a study on the psychological consequences of unemployment in South Africa, Wilkinson *et al.* (2017: 18); Graham and Mlatsheni (2015:53); De Witte *et al.* (2012:236) report that physical effects of unemployment include, but are not limited to, headaches, sleep deprivation, heart diseases, lack of energy, and hypertension, while psychological effects include increased hostility, stress, anxiety, loneliness, emptiness, despair, fear, social isolation, and depression, suicidal thoughts.

Graduate unemployment also has an impact on not just the graduates, but also families, communities, and the country as a whole. De Witte *et al.* (2012:236) point out that unemployment has a negative impact on the family, resulting in increased parent-child conflict, emotional, mental, and physical abuse, family conflict, depression, and a decrease in family cohesiveness and financial well-being. Graduates represent hope for their families and communities to better their living standards, according to Wilkinson *et al.* (2017:21). When this hope is destroyed as a result of unemployment, Graham and Mlatsheni (2015:54) remark that a slew of negative health, social, and economic effects follow. Unemployment among young people has been linked to economic consequences. Long-term unemployment of university graduates, for example, has an influence on future earnings and hence the country's economic stability (Wilkinson *et al.*, 2017:22). Unemployment increases social inequality and alienation among the unemployed, resulting in a weak economy and lower government tax receipts in the future (Graham & Mlatsheni, 2015:54).

Numerous studies have been undertaken around the world to determine the factors that influence graduate job status. Many elements have been recognised as some of the factors that determine graduates' employment status in study areas in this regard. Authors such as Aloui, *et al.* (2020:6); Harry, Chinyamurindi and Mjoli (2018:3); Varathan, *et al.* (2018:139); Adejumo (2017:120-123); and Mncayi (2016:64-66) have spent time identifying various factors that influence graduate employment status in various countries around the world.

According to Patel and Chog (2018: 218-219), inequality, a high level of poverty, a bad education system, rural underdevelopment, and dysfunctional urban environments are all determinants of youth unemployment in South Africa. Patel and Chog (2018) posit that these factors arose from the apartheid history of the country. They argue that government could alleviate this situation when it takes certain decisive and proactive decisions and corresponding actions in the right direction. In this regard, Patel and Chog (2018) acknowledge numerous policy measures adopted by the government to adequately address these factors in the post-apartheid era.

7. Research Methodology

This research uses a non-empirical approach. The literature review is often used in non-empirical methodology. A qualitative research will be done where the researchers will conduct interviews with unemployed graduates, employees from Local Economic Development (LED), Broad-Based Black Economic Empowerment (BBBEE), and Small, Medium, and Micro Enterprise (SMMEs) through interviews, thereby obtaining detailed knowledge about their experiences.

An exploratory research design was used in this study. According to Baxter and Jack (2008:548) and Labaree (2013:6), an exploratory study is an investigation into a problem that provides a fresh viewpoint on the phenomenon under investigation. An exploratory study looks into a variety of factors to gain a deeper understanding of the phenomenon under investigation.

7.1 Sampling

The process of selecting credible participants to participate in a study to find solutions to the study's problem is known as participant selection. A total of thirty-five (35) participants participated in this study. Twenty (20) unemployed graduates were selected for this study through a purposive sampling technique. These are unemployed graduates that reside in Mahikeng municipality from ages 20-35 years. The unemployed graduates were South African graduates from diverse academic backgrounds. The researcher located the unemployed youths through the office of Broad-Based Black Economic Empowerment (BBBEE) and SMMEs. These participants were selected to know their experiences with unemployment and the major causes of unemployment. Twenty (20) unemployed graduates were selected for the study within the Mahikeng municipality area. The study included five employees each from the following departments: Local Economic Development (LED), Broad-Based Black Economic Empowerment (BBBEE), Small, Medium, and Micro Enterprise (SMMEs).

Table 1: Pseudo Names

PARTICIPANTS	PSEUDO NAMES	CODE
Participants 1-5	LED Pseudo names	LE1, LE2, LE3, LE4, LE5
Participants 6-10	BBBEE Pseudo names	BB1, BB2, BB3, BB4, BB5
Participants 11-15	SMME Pseudo names	SM1, SM2, SM 3, SM 4, SM 5
Participants 16-30	Graduates	UG1, UG2, UG3, UG4, UG5, UG6, UG6, UG7, UG8, UG9, UG10, UG11, UG12, UG13, UG14, UG15

7.2 Data collection

According to Gray (2014:352), data collection entails gathering raw responses from participants about how the study's problems might be solved. Data was collected using online interviews. This study's interview questions were divided into two sections, Sections A and B. The participants' biographical information was collected in Section A. Section B concentrated on the research questions. Open-ended questions were asked which gave the participants the freedom to express their opinions on the subject matter. Since the data collection was online, the researcher started sending the interview questions to all the participants as soon as the ethics was approved.

7.3 Data analysis

The data gathered through interviews was examined in accordance to the study's goal in this study. Atlas.Ti software (version 8.2) was used to analyse the data collected once it was transcribed into a readable form. Credibility, transferability, dependability, and confirmability were all preserved in this investigation as prescribed for a qualitative study.

8. Presentation and interpretation of results

Thirty participants completed the interviews. The biographical information collected in this study was further enhanced by the interview questions. From the analysis, 2 themes comprising of 4 categories each, were identified in Table 2 and will be discussed accordingly.

Table 2: Summary of themes and categories

NUMBER	THEME	CATEGORY
ONE	SOCIAL-ECONOMIC FACTORS	<ol style="list-style-type: none"> Choice of school/university Nepotism and race Training of graduates Choice of degree studied
TWO	EMPLOYABILITY	<ol style="list-style-type: none"> Policy implementation Government intervention Work experience and skills Internship and training programmes

8.1 Theme one: Social-economic factors

The purpose of this theme was to learn about the personal and socio-economic variables that influence graduates' employment status in Mahikeng municipality. The participants were asked to indicate the social-economic factors that determine the employment status of graduates. Their responses indicated that these determinants include the choice of school or university attended, nepotism and racial issues, training of graduates, and choice of degree studied.

Category 1: Choice of school/university

Participants confirmed that the choice of schools attended provides more opportunities to gain employment in the job sector. They further affirmed that employees tend to consider candidates who attended known universities more than those that attend universities in rural settings. Furthermore, few participants concurred that candidates that attended public universities are also preferred to those that attended FET colleges. Some excerpts from participants are as follows:

UG1 said "The choice of schools attended definitely determines the employees' choice to offer employment to the candidate".

UG6 affirmed "When you graduate from schools like Wits University or Stellenbosch, they will have more respect for you than when you graduate from local universities or FET schools".

LE2 said "From all indications, employees look for graduates from institutions of high repute. These graduates are viewed to be knowledgeable and exposed to their subject areas".

The findings from this section conform to that of Mncayi (2016: 70) who affirmed that the institution of higher learning one attends influences their employability. Mncayi (2016) further infers that most employers of labour are often on the lookout for fresh graduates from certain higher institutions, which they have developed special interest in their graduates, than others. However, the view of Baldry (2013:12) further confirms that employers accept more graduates from historically white universities than historically black universities as they are believed to provide more quality education.

Category 2: Nepotism and race

Concerning racism and nepotism, some participants indicated most jobs are given to some candidates without following due process and certain labour considerations. Some excerpts from the participants are as follows:

UG3 said "It is very hard to see whites who are unemployed in Mahikeng, we blacks, are unemployed...we are everywhere, we look for internships instead of main jobs...nobody is willing to take us."

UG13 said "They always allege that jobs are kept for the whites and Asians, I strongly disagree...the problem is that there are no jobs...only few whites and Asians reside here."

The findings of Mncayi (2016:70) affirm that most of white and Indian graduates and job seekers in South Africa stand a high opportunity to secure jobs than black or coloured South Africans and this is attributed to race which has continued to play a major role in influencing the social life in South Africa despite the end of apartheid. In confirmation, Morsy and Mukasa (2019:21), recognise that Black job searchers are the most likely to be unemployed for a relatively long period. Morsy and Mukasa (2019:21) further stated that race is situated as one of the strongest elements of employment of graduates in South Africa. However, Statistics Department affirms that Mahikeng is dominated by black people making 95% of the population. This depicts that racism induces unemployment as obtained in this section may not be logically applied to Mahikeng as most residents in Mahikeng are blacks.

Category 3: Training of graduates

This research question was directed only at the unemployed graduates. This section explored if the unemployed graduates have been involved in any training by any department or agency to help secure employment. It investigated the effectiveness of the implementation of the policies to enhance

graduate employment. Furthermore, this section explored if the unemployed graduates secured employment after completing the training or internship programmes.

The participants were asked if they have been involved in training programmes and most of them responded that they have neither been involved in training programmes nor internship programmes. Direct excerpts from the participants are as follows:

UG1 affirmed “I have never had any training or internship programmes”.

UG4 said “Since I graduated, I have been looking for a job...I have been so unlucky.... I cannot even get training or internship programmes.... It has not been easy for me”.

Category 4: Choice of degree studied

This section sought to know if the choice of degree plays a significant role in graduates' employment prospects in Mahikeng municipality. The participants indicated that the degree choice played significant roles in getting employment. Other participants concurred that the problem is not only the discipline of the candidate but availability of limited jobs. Few participants affirmed that there are high demands by the employers which makes it difficult to secure jobs in Mahikeng. Excerpts by the participants are as follows:

UG6 said “The degree choice plays a lot of roles in securing jobs”.

SM5 said “I like practical works, having twenty degrees does not make any sense if you cannot complete a task effectively”.

BB3 said “having good degrees from scarce skill discipline is very essential but having exceptional knowledge or skills are necessary to secure jobs”.

The findings from this section concur with Ryan (2013) who confirms that graduates who studied science and engineering do have greater opportunity to gain permanent employment, in contrast to those economics and management science, arts, humanities and languages. One of the most common reasons students continue their education beyond matriculation is the hope that higher education qualifications would improve their chances of landing a better-paying job. This is especially true in the case of South Africa, where labour demand is changing to highly qualified people. It is confirmed by ROA (2012:2) that arts and social science graduates experience more % age in the unemployment rate over the years which signifies more enduring challenges in entering the labour market with qualifications in these particular fields of study.

8.2 Theme 2: Employability

This section explored employability of graduates and identified 4 main categories: Policy implementation, government intervention, work experience, and, skills and internship and training programmes.

Category 1: Policy implementation

Participants indicated that the government do not implement these policies meant to alleviate unemployment effectively. Some of the participants concurred that the inability to effectively implement these policies are due to corruption of the people in charge of implementation. Some excerpts from the participants are as follows:

UG 15 affirmed “The implementation of policies is not effectively done”.

SM5 said “I think there is poor management in the implementation of the policies...the government should ensure that competent people are employed to ensure adequate implementation of policies”.

The findings of Ferreira and Rossouw (2016) affirmed that there were high expectations for the country's economic rebirth, which would be bolstered by supporting economic policies that prioritized job creation and the reduction of long-standing poverty and inequality. The effectiveness of economic policy in achieving these much-desired outcomes – particularly advances in employment – has gotten

little consideration until recently. In the same direction, Herwartz and Niebuhr (2011) point out that South African government have soluble policies to unravel the problem of unemployment but the issues rests on the management and implementation of the policies.

Category 2: Government intervention

Participants affirmed that the measures adopted by the government to alleviate graduate unemployment include Youth Employment Service, training programmes, adherence to Employment Equity Act, skills acquisition centres, internship programmes, and geographical subsidies. The participants concurred that Youth Employment Service (YES) is one of the policy measures adopted by the government to resolve graduate unemployment. Youth Employment Service is a government-led effort that encourages businesses to assist in the creation of important work experiences for young people in all parts of the country. YES aspires to generate one million job opportunities for unemployed black graduates and change their lives while assisting the businesses in which they are placed to develop. The excerpts from the participants are as follows:

UG7 said “The Youth Employment Service is implemented in all parts of South Africa but it is not really effective here in Mahikeng. We need to be the beneficiaries of this program”.

Concerning the training program, participants affirmed that it is one of the policy measures the government is using to alleviate graduate unemployment. Participants affirmed that training programme refers to series of activities that include taking one or more courses to improve with regard to performance, skills, and knowledge. Employees complete a defined curriculum as part of government training programmes to ensure compliance with legislation, policies, and procedures. Following the creation of content, it increases the level of awareness of the individual, also improves the abilities of candidates in one or more areas of competence and enhances candidates’ motivation to do a good job.

LE1 said “We train unemployed graduates in this office as a means to empower them till they get employed....we also pay them”.

UG3 confirms “I had the opportunity to be trained but afterwards, I was not given a full employment and this worsens my situation”.

The participants affirm that another policy measure adopted by the government to alleviate graduate unemployment is through the Employment Equity Act, No 55 of 1998. This Act was made to create workplace equity by fostering equal opportunity and fair treatment in employment by eliminating unjust discrimination and implementing affirmative action measures to address the disadvantages suffered by designated employees. Consultation and engagement between employers and unions are resolved under the Employment Equity Act. Excerpts from the participants are as follows:

UG2 said “Employment Equity Act has been the watchword of South African government in alleviating graduate unemployment but the issue is that we don’t see it effective in Mahikeng. They should make this program effective in every city/town”.

LE2 asserted “Employment Equity Act has been adopted as one of the measures by the government to curb the problem of unemployment”.

BB2 affirmed “This Act serves as a bedrock that eliminates unjust discrimination in providing employment opportunities for unemployed graduates”.

Category 3: Work experience and skills

Participants concurred that work experience is a high limitation towards the employability of graduates. They further affirm that employers need already experienced people to save time and costs of training. Regarding skills and training, participants confirmed that getting the right skills and training is the first step to securing a dream job. It was also highlighted by participants that employers tend to be interested in candidates that possess remarkable skills and those that have gone through intensive training. Concerning the level of education, participants concurred that possessing reputable

certificates matters a lot while searching for jobs as it is the first thing that an employer as about. Those without good level of education are abandoned. Excerpts from the participants are as follows:

UG1 Said “The truth is that skills and experiences are very vital to secure jobs. Employers sometimes get dissatisfied if applicants are not fully skilled and trained....

LE1 said “The level of education, acquisition of special skills, or other important training are highly needed during selection of candidates”.

SM2 affirms “You cannot hire a candidate who is not trained and abandon a candidate who holds a higher degree and highly skilled”.

BB3 concluded that apart from holding degrees, candidates need to be skilled and trained to secure meaningful jobs.

The findings in this section corroborate those of Farooq (2011:1) who indicated that the level of skills and experiences determines the employability of unemployed graduates. In the view of Shierholz *et al.* (2014:4), job mismatch, skills and experiences have added to the difficulties of unemployed youths to secure good jobs in South Africa. Mncayi (2016:70) further asserts that unemployed graduates should always equip themselves by gaining additional skills and other training remain employable in the mainstream economy.

Skills acquisition centres was also mentioned by the participants as one of the measures the government of South Africa adopts to combat unemployment. Skills acquisition refers to a learning programme in which a person's capacity to perform a task changes with time as a result of repetition. With enough practice, the task may eventually become improved which may demand little or no supervision. The participants attested:

UG1 said “Skill acquisition centres have been adopted to close the unemployment gap by the government over the years but the problem is that it is not effective in Mahikeng”.

UG3 confirms “I have not benefited from such programme; it needs to be effective. BB3 said... We have such programmes here but limited graduates are involved”.

Meyer (2014) further points out that South African government has been adopting legislative precepts such as Youth Employment Service, Employment Equity Act and other applicable Acts in the quest to alleviate unemployment. In the same view, Shanker *et al.* (2015) further confirm that South Africa's graduate unemployment rate has been on the rise over years despite the measures adopted by the government to resolve the social menace. Shanker *et al.* (2015) further state that the government of South Africa has introduced internship and training programmes, skills acquisition programmes and geographical subsidies with the view to reducing unemployment. Despite these initiatives, statistics show that unemployed youths are more than the available jobs and this is considered the greatest problem of unemployment. This calls for more government initiatives to create jobs to alleviate graduate unemployment.

Category 4: Internship and training programmes

In this section, the study wanted to determine whether the concerned departments ensure that graduates are employable after they have completed their internship/training programmes. The participants indicated that the concerned departments have implemented no soluble measures to alleviate unemployment. Most participants affirmed that they have never been lucky to be involved in internship programmes. Excerpts from the participants are as follows:

UG5 said “The departments do not have plans for us.... we have tried our best to be involved in active employment but there is no opportunity”.

It was noted that there are no plans by the departments to involve the unemployed graduates in active internships or skills development programmes. This conforms to the study of Meyer (2014) where it was highlighted that there is no goodwill by the concerned departments to resolve the problem of

unemployment in South Africa. Ferreira and Rossouw (2016) stated that there should be a serious intervention by the government to ensure that unemployment is resolved.

Internship programmes refers to a professional learning experience that provides meaningful, practical work relating to a candidate's area of study or career interest. The aims of internship programmes are to provide more experience and to put experiences into practice.

UG7 said "Internship programme is very necessary to transiently resolve the problem of unemployment and the government of South Africa has been adopting this measure in both urban and rural areas".

UG9 said "I have been involved in a paid internship but at the end of the day, I was not offered a permanent employment".

LE2 and BB3 confirms "We are running some internship programmes, we train and position some unemployed graduates to secure jobs".

The findings obtained in this section portray that the government of South Africa has been using diverse measures to combat unemployment in Mahikeng. The findings from this section conform to the study of Meyer (2014) who affirms that the creation of jobs enhances economic development and serves as a foundation of a booming economy. Despite various initiatives, statistics show that unemployed youths are more than the available jobs and this is considered the greatest problem of unemployment. This calls for more government initiatives to create jobs to alleviate graduate unemployment.

9. Recommendations and managerial implications

To alleviate graduate unemployment in Mahikeng, the following are the recommendations derived from the themes.

9.1 Theme 1: Socio-Economic Factors

Encouraging critical courses: The findings from the study verified that most graduates that studied critical courses have a high opportunity to secure good employment, the government should ensure adequate career management to encourage young school leavers to study critical courses.

Training and development: The government of South Africa should launch more paid training and development programmes for unemployed graduates to enable them to gain extra skills and professional development. This will aid in covering more graduates in Mahikeng who need to be engaged, also to improve them professionally and keep them focused in their areas of study.

9.2 Theme 2: Employability

Entrepreneurial development: Entrepreneurial development is considered essential for promoting job creation in the informal sector. Many unemployed graduates would be active in many dimensions of commerce and services only if the current government could alleviate unemployment through the funding of SMMEs.

Youth development policies: In order to increase youth empowerment, it is necessary for the politicians to enact policies that benefit youth. This study suggests that policies, rules, by-laws, and other actions be implemented to promote youth empowerment and job creation.

Sectoral development: According to the participants in this study, all sectors of the economy should be fully operational in order to create work for the unemployed graduates. There should be tremendous improvements and investments, particularly in black-dominated areas, to achieve a balance between white merchants and indigenous South Africans.

Establishment of an enabling business climate: According to this study, the government should enact legislation that offers a favourable environment for the survival of economic operations. Business activities, private and public investments, SMMEs, should all be supported through geographical subsidies to provide an enabling environment for job creation.

Strategic management: There should be adequate and proper management of unemployment programmes to ensure that it gets to the grass root level.

Encouragement of skills development for entrepreneurship: The government should make serious efforts to encourage craftsmanship, skills development, and entrepreneurial skills amongst youths so that they can be engaged in other practical skills rather than waiting for white collar jobs. It is discovered in the study that jobs are very few in Mahikeng, the encouragement of skills development/entrepreneurship will alleviate unemployment at a very quick rate.

10. Conclusion

According to reports by StatsSA, graduate unemployment has been on its rise in South Africa and the social menace puts pressure on the government's finances and raises concerns about South African social and economic stability. It was noted that the graduate unemployment rate as of 2021, has risen to 32.5%. This study, therefore, explored the measures to alleviate graduate unemployment in Mahikeng municipality. The prescripts of the study confirm that economic development leads to job creation and long-term employment, and jobs are the bedrock of any economy. Poverty, violence, and societal instability are all caused by the incompetence to create jobs for the youths. The study discovered that the government do not facilitate adequate training, internships, youth employment programmes, and skills acquisition programmes for unemployed graduates. Also, the government does not provide adequate sector-specific financial assistance to the private sector to ensure growth thereby improving the opportunities for job creation. As a result, the development of the informal sector has remained stagnant and the application of policies for improvement has been held in a very low esteem. To ensure reform in all facets of the economy, this social menace needs a new political dimension and policy overhaul. The study affirms that graduate unemployment could be alleviated by entry into the business sectors while entrepreneurship, skills acquisition, craftsmanship, and funding of business proposals must be promoted and supported by the government. Young graduates should be encouraged to improve their skills and engage in other entrepreneurial activities rather than waiting for white-collar jobs. The NDP's vision must be accepted and supported by all parties involved. Jobs for everyone as a strategy, as well as the recommendations of this study, should be applied to ensure job creation to alleviate unemployment in Mahikeng municipality.

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Leading Towards Voice and Innovation: The Role of Psychological Contract

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Keywords

Psychological contract, psychological contract breach, leadership styles, innovative work behaviour, employee voice

Abstract

Background: Empirical evidence generally suggests that psychological contract breach (PCB) leads to negative outcomes. However, some literature argues that, occasionally, PCB leads to positive outcomes.

Aim: To empirically determine when these positive outcomes occur, focusing on the role of psychological contract (PC) and leadership style (LS), and outcomes such as employee voice (EV) and innovative work behaviour (IWB).

Method: A cross-sectional survey design was adopted, using reputable questionnaires on PC, PCB, EV, IWB, and leadership styles. Correlation analyses were used to test direct links within the model, while regression analyses were used to test for the moderation effects.

Results: Data with acceptable psychometric properties were collected from 11 organisations (N=620). The results revealed that PCB does not lead to substantial changes in IWB. PCB correlated positively with prohibitive EV, but did not influence promotive EV, which was a significant driver of IWB. Leadership styles were weak predictors of EV and IWB, and LS only partially moderated the PCB-EV relationship.

Conclusion: PCB did not lead to positive outcomes. Neither did LS influence the relationships between PCB and EV or IWB. Further, LS only partially influenced the relationships between variables, and not in a manner which positively influence IWB.

1. Introduction

This article discusses a comprehensive model linking psychological contract (PC), psychological contract breach (PCB), employee voice (EV) with innovative work behaviour (IWB), and how leadership style (LS) influences these relationships. The aim of the study was to empirically determine how different leadership styles affect employee voice and innovation under conditions of PCB, and how these variables relate to each other.

2. Problem statement

Fostering innovation is an important managerial task (Bos-Nehles, Renkema, & Janssen, 2017) and, as PCB is perceived as the norm, rather than the exception (Robinson & Rousseau, 1994), innovative work behaviour may be withheld (Ng et al., 2010). Organisations would be in a more advantageous position when all employees are willing to share creative ideas and recommendations towards operational and product improvements and are encouraged and feel free to engage in innovative work behaviour (IWB) (Akhtar et al., 2016; Milliken et al., 2003; Morrison, 2011; Zagenczyk et al., 2015). Although PCB may theoretically lead to innovation (Kiazad et al., 2014), this is seldom empirically demonstrated (Zhao, Wayne, Glibkowski, & Bravo, 2007), and the conditions under which this occurs

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Note: This paper is a combination and a reworked version of the first and final chapters in the first author's doctoral thesis. Apart from it appearing in her thesis, it was not decimated in any other format

are largely unclear. Leadership is one way of influencing employees (Lee et al., 2020). As leadership is known to influence employee voice (Jada & Mukhopadhyay, 2018), and as employee voice relates to innovation (Zhou & George, 2001), soliciting appropriate employee voice via leadership may be the avenue to innovation, given PCB. However, the literature is silent on the complex relationship between PCB, employee voice, and innovation, and how leadership affects this relationship. Thus, managers are unclear as to how to apply themselves in an environment typified by PCB and where innovation is necessary. Given the dearth of literature, researchers and academics are ill-equipped to advise managers on how this dilemma might be resolved.

3. Goal of the study

The goal of the study was to empirically determine how different leadership styles affect employee voice and innovation under conditions of PCB, and how these variables relate to each other. As a result, the goal would be to advise managers on the appropriate leadership styles to employ, given the extent of PCB. Before activities to solve the empirical question could commence, intensive literature reviews were necessary, focusing on operationalising the variables and reporting on previous findings that specify the relationships between the variables.

4. Literature review

The literature review deals with the conceptualisation of PC, the link between PCB and IWB and the conceptualisation of EV. It is concluded with a comprehensive model linking these variables.

Present literature on psychological contracts is fragmented in many respects – this through being conceptualised in different ways across various studies – and thus poses a challenge to researchers and practitioners, as no conceptual standardisation exists. After reviewing reputable sources published between the years 1960 and 2020, a standard definition of the psychological contract is proposed, the most recognised typologies specified, and broad and sound measures identified. It was found that Rousseau's (1995) definition and typologies (transactional and relational contracts) are still widely used, and that the measuring scale for transactional and relational contracts by Millward and Hopkins (1998) demonstrates good psychometric properties and forms the basis for many research projects.

With PCB and IWB a systematic literature review methodology was followed to gather data, which were analysed focusing on broad adoption, theoretical coherency and, in the case of measurement, psychometric properties. In total, 14 articles were retrieved that measured the direct PCB-IWB link. PCB is most often defined and measured in terms of Robinson and Morrison's (2000) and Robinson and Rousseau's (1994) conceptualisations, while Janssen's (2000) framework is applied to IWB. Reliability information is reported for these measures. While many definitions and measures of the constructs are used, some are theoretically more comprehensive, while some are applied more often than others, and these are now specified.

With conceptualising EV, the aim was to present a review on the conceptualisation of voice, with the focus on the different ways in which the concept is defined, categorised and measured. Such a focus is required as a comprehensive and contemporary operationalisation of voice will ensure that future research is linked to the dominant body of knowledge. Subsequent to a review of a substantial number of the articles published in peer-reviewed journals between the years 1970 and 2019, the three most popular definitions of voice are presented, the three most common conceptualisations on the forms/types of voice identified, and the three most used measuring scales with acceptable reliability and validity acknowledged. Building on previous research, and considering recent publications, the comprehensive conceptualisation of voice is best described by the seminal work of Maynes and Podsakoff (2014), which integrates the extant knowledge on the topic and how it is operationalised. Their definition, typologies, and measuring instrument seems to be the standard in voice research. Maynes and Podsakoff's theorising on all three aspects is well accepted and forms the basis for many recent studies on voice.

As can be noted from the aforementioned, concepts were not only defined, but their typologies were provided, which made the operationalisation (and measurement) of the concepts in a model easier.

The identified measurement tools had acceptable psychometric properties and were suited for each construct.

Prior to commencing with the empirical investigations on the relationships between IWB and its antecedents, extensive foundational work was done in the form of literature reviews and linking the variables theoretically (using social exchange theory, psychological contract theory and conservation of resources theory). The conceptual work laid the foundation for empirical investigation, which collectively reports on the relative weighting of the different antecedents, information on what the main drivers of IWB were, and specifically, an explanation of how LS, which can be adjusted or modified, would influence these relationships. This is presented in Figure 1.

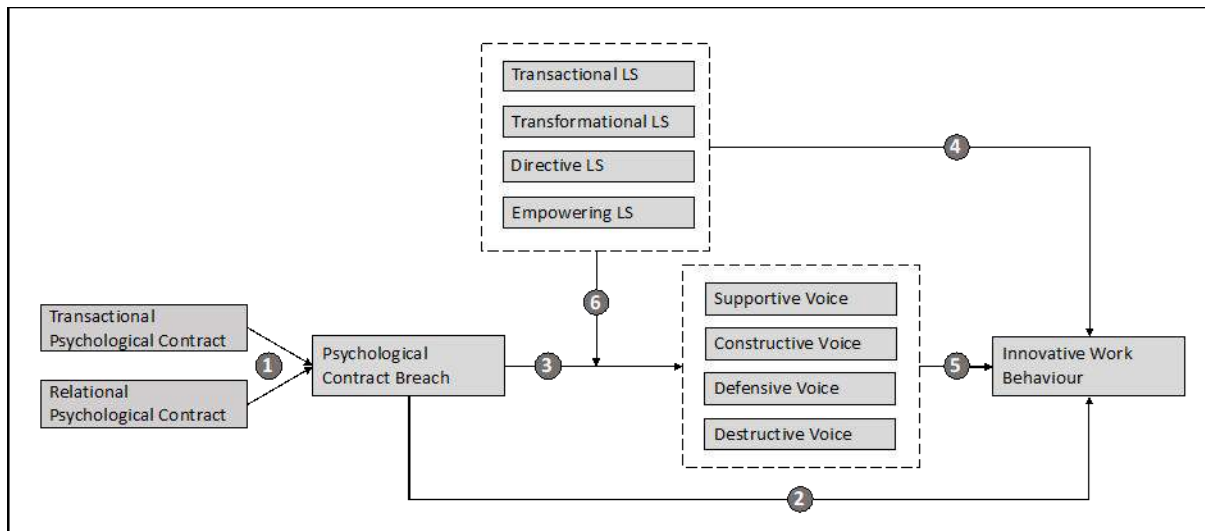


Figure 1: Unspecified conceptual framework. Source: Botha (2022)

The links within the model and how they were tested will be explained in the sections that follow.

5. Research methodology

5.1 Design

This study was carried out as a cross-sectional survey, and this design is appropriate where the intention is to describe the population and to investigate relationships between variables (Cooper & Schindler, 2011).

5.2 Respondents

The target population of this study were employees of medium-to-large South African organisations. Master of Business Leadership students were recruited to obtain access and gain permission to conduct research within these organisations. Given the existing relationships of students with specific organisations (some students were employees in these organisations), access to the organisations for the purposes of conducting surveys was, in general, obtained without difficulty. Therefore, the sampling of companies was based on convenience. The rationale behind the selection of medium-to-large organisations was based on the assumption that it is more likely that formalised processes and practices will exist in bigger organisations than in organisations of a smaller size, and that these organisational features and practices are typically observable, which might make reporting more uniform. The organisations that participated in the study represented a wide spectrum of state-owned and private sector companies.

The target population for this study included all employees, irrespective of race, ethnicity, gender, age, level of education and position in the company. There was only one exclusion criterion set for the sampling, and this was that all respondents should be able to converse adequately in English, as the questionnaire was composed in the English language only. Respondents (employees) were randomly selected from personnel lists provided by the staff in the human resources departments of the various

participating organisations. For each of the organisations, random samples were drawn until complete data had been collected for the target of 60 respondents. Although the sampling process was not perfect, an attempt was made to make the selection of respondents as random as possible, given the operational realities of recruiting respondents.

The final number of the respondents reflected in the different parts of this study is constant. Data was collected from 620 respondents, of which 313 were males (50.5%) and 301 were females (48.5%). Of this sample, most respondents, 440, were Black (71%), followed by 103 White respondents (16.6%), then by 42 Coloured respondents (6.8%) and finally, by 28 Asian respondents (4.5%).

In terms of education level, the majority in the sample, 254 respondents (41%), had a higher degree or diploma. Meanwhile, 203 respondents (32.7%) had obtained their first degree or diploma, 138 respondents (22.3%) had matric (senior certificate), and 19 respondents (3.1%) had less than 12 years of education. It could thus be reasonably expected that most of the respondents would be able to answer questionnaires with a high degree of comprehension.

The respondents were involved in core business (299 employees - 48.2%) and support services (311 employees – 50.2%). As far as positions in the company are concerned, the respondents were spread across all levels. The reported majority were employed in junior management roles (210 respondents – 33.9%), followed by middle managers (197 respondents – 31.8%), semi-skilled (34 respondents – 21.6%), and senior managers (45 respondents – 7.3%). Corresponding with educational level, 22 respondents (3.5%) indicated that they performed unskilled work.

The sample was also representative in terms of age. The youngest respondent was of 21 years of age and the oldest was 64 years of age, providing the sample's mean of 37.81 years old ($SD \approx 9$).

The respondents' tenure in their organisations ranged between 1 and 42 years, with an average of around seven years of service ($SD \approx 6$). This implies that most respondents were well capable of reporting on organisational practices.

It was concluded that the respondents in this study represented a wide spectrum of the South African workforce, demographically aligned with the data from Statistics South Africa (2020).

5.3 Research process

Following an extensive literature review (Botha & Steyn, 2020b, 2020a, 2021), several hypotheses were formulated. Testing these hypotheses unfolded systematically and incremental, firstly dealing with single antecedents before dealing with the antecedents as groups, and finally, combining groups of antecedents to predict the dependent variable. Once the data was collected (see section 3.2 above), these hypotheses were tested (see section 3.5 below), using research instruments identified in separate literature reviews (Botha & Steyn, 2020a, 2021).

5.4 Measurement

The identification of appropriate measuring instruments was based on their popularity in recent research, as well as their proven reliability and demonstrated validity. Table 1 presents the instruments selected for the study.

Table 1: Research constructs, instruments, and sources

Construct	Instrument	Source
Transactional psychological contract	20-item Psychological Contract Scale (PCS) (5 items retained)	Millward and Hopkins (1998)
Relational psychological contracts	13-item Psychological Contract Scale (PCS) (5 items retained)	Millward and Hopkins (1998)
Psychological contract breach and violation	9-item Psychological Contract Breach and Violation Scale	Robinson and Morrison (2000)
Supportive, constructive, defensive, and destructive employee voice	20-item Employee voice Questionnaire	Maynes and Podsakoff (2014)
Innovative work behaviour	14-item IWB questionnaire	Kleysen and Street (2001)
Transactional leadership style	5-item Transactional Leader Behaviour Factor	Podsakoff et al. (1990)
Transformational leadership style	24-item Transformational Leader Behaviour Factor (6 items retained)	Podsakoff et al. (1990)
Directive leadership style	10-item questionnaire comprised of two complementary (6-item and 4-item) measuring scales	Pearce and Sims (2003) (6-item) and Hwang et al. (2015) (4-item)
Empowering leadership style	10-item questionnaire	Ahearne et al. (2005)

Source: Botha (2022)

In order to decrease the length of the total questionnaire, the number of items in some of the instruments were reduced. This was achieved by selecting only those items which had the highest factor loadings within their respective scales. This procedure was also used by Bateman and Crant (1993), as well as by Strydom (2013) and Seibert et al. (2001), who reported evidence for the validity and reliability of the shortened scales.

5.5 Statistical analyses

The statistical analyses served three objectives, namely, to assess the suitability of the data for analysis, to test the reliability and validity of the data and to test the relationships between the independent and dependent variables. IBM SPSS Statistics was mostly used to perform these analyses (IBM Corp., 2020), apart from a few manual calculations. The calculation of descriptive statistics of the respondents were necessary to assess the extent to which the sample represented the population. This was done by mirroring obtained data with the information from Statistics South Africa (2020).

To test for the normality of the data, skewness and kurtosis data was generated and the data was found usable. With reliability, Cronbach's alpha coefficient larger than .7 was deemed as acceptable (Pallant, 2013), and this threshold was respected throughout the research. Factorial validity was assumed when items loaded in the expected manner, without significant cross-loadings. Common method bias was

managed using techniques proposed by Podsakoff, MacKenzie, Lee and Podsakoff (2003). When calculating correlations, the emphasis was on practical significance (medium effect $.30 < r > .49$ or $-.30 < r > -.49$; and large effect $.50 < r > 1.0$ or $-.50 < r > -1.0$) (Cohen, 1988).

Regression analyses were also performed. In this study, the total size of the regression coefficient was of less concern, with the focus primarily on the significance of the beta values of the different predictors. Significant predictors ($p < .01$) were considered as unique and substantial contributors to the variance in the dependent variable. Regression was also used to test for moderation, using the procedures suggested by Fairchild and MacKinnon (2009), which are well aligned with the recognised structure suggested by Baron and Kenny (1986). This method encompasses doing a regression without including the moderator in the model, adding the moderator, and finally adding the moderator and the predictor variable times the moderator. Here the interest is in ΔR^2 , and when interaction effect between the predictor and the moderator is significant, moderation is assumed.

All these analyses were combined to evaluate the proposed theoretical model in Figure 1. The subsequent data driven model is presented in Figure 2.

5.6 Ethical matters

All standard ethical guidelines regarding interaction with respondents, as well as the management of data collection and access to such data, were done in accordance with the requirements set out by University of South Africa's Graduate School of Business Leadership (GSBL). Once the researcher had obtained permission from the Research Ethics Review Committee of the GSBL (2019_SBL_001_CA dated 04 February 2019), the data collection has commenced. No adverse effects, nor incidents that could possibly threaten the integrity of the data collection process, were reported.

6. Results

The conceptual model in Figure 1 was tested sequentially. First, the effects of PC, and the breach thereof, on IWB was investigated (1 and 2 in Figure 1). Next, the effects of PCB on EV were tested (3 in Figure 1). The effects of LS on IWB were also assessed (4 in Figure 1). This was followed by testing which aspects of EV influence IWB (5 in Figure 1). This sequential testing of parts of the model was finalised by analysing how LS moderates the effects of PCB on EV (6 in Figure 1). The tests of each part of the model are presented below.

In the first part of the study the goal was to empirically determine how PCB affects the relationship between different PCs (relational and transactional) and IWB. Data were collected from 620 employees representing 11 South African organisations. The instruments showed acceptable psychometric characteristics. Three results were dominant: Transactional PC did not correlate with IWB, while relational PC did so in a significant way; PCB correlated positively and significantly with transactional PC, and negatively and significantly with relational PC, but not with IWB; PCB did not moderate the relationship between relational PC and IWB. It was evident that PC type (relational PC) has a direct effect on IWB, but PCB did not relate significantly with IWB. As PCB is known to affect discretionary behaviour, the last-mentioned result was surprising. Outside of the set hypotheses, it was found that PCB correlated positively and significantly with transactional PC, and negatively and significantly with relational PC. This suggests that, in transactional environments, PCBs are experienced more often, whereas perceptions of breach within relational environments are reported less often.

The next aim was to empirically determine how different types of PC are linked to different types of EV, and also, how PCBs affect these relationships. The paucity of literature on the relationship between the three variables necessitated this research. Relational PC correlates with promotive dimensions of EV, and similarly, though to a lesser extent, with prohibitive voice. Transactional PC and PCB, meanwhile, correlated with prohibitive dimensions of EV. The PC-EV relationship was moderated by PCB only in a transactional PC environment, and only for the prohibitive EV dimension. This could be explained by considering that, where interpersonal relations exist with higher levels of

RPC, and where non-monetizable issues are at play, PCB does not affect EV in a significant way. However, in the presence of strong transactional relations, where TPC levels are high, and where monetizable matters are a concern, PCB has a substantial effect on the prohibitive voices, and this occurs to a large extent. It is interesting to note the nature of moderation. The interaction effect was negative, which may suggest that when TPCs are breached, employees will be less willing to express their voices and may choose silence.

Furthermore, this research aimed to empirically determine how different dimensions of EV are linked to IWB, and also, to assess the relative importance of EV, compared to other two predictors of IWB, namely leadership styles and climate for innovation (Cfi). Supportive voice, and particularly constructive voice, positively correlated with IWB, while defensive and destructive voices had no effect on IWB. The model in which EV was used to predict IWB was superior to models that included leadership styles as well as Cfi. These results suggest that EV can contribute positively to IWB, depending on the type of EV expressed. In addition, EV, more than leadership styles and Cfi, predicts IWB.

Leaning on the social exchange and psychological contract theories, this research introduced the leadership style as the mechanism that may differentially buffer or exacerbate the effects of PCB on EV. With its aim to empirically determine how PCBs are linked to different types of EV, and also, how different leadership styles affect these relationships, this research reported the results that follow. The results pointed to three matters. Firstly, PCB correlates negatively with promotive types of EV, and positively with prohibitive types of EV. Secondly, leadership styles were a weaker predictor of EV than PCB. Finally, the PCB-EV relationship was, in most cases, partially moderated by leadership styles.

The results uncovered in these individual articles provide valuable insights into understanding the complexity of relationships between PC, PCB, EV, IWB and LS, and require further exploration. An integrated summary of the results, incorporating all the outcomes from different sub-studies, is provided in Figure 2.

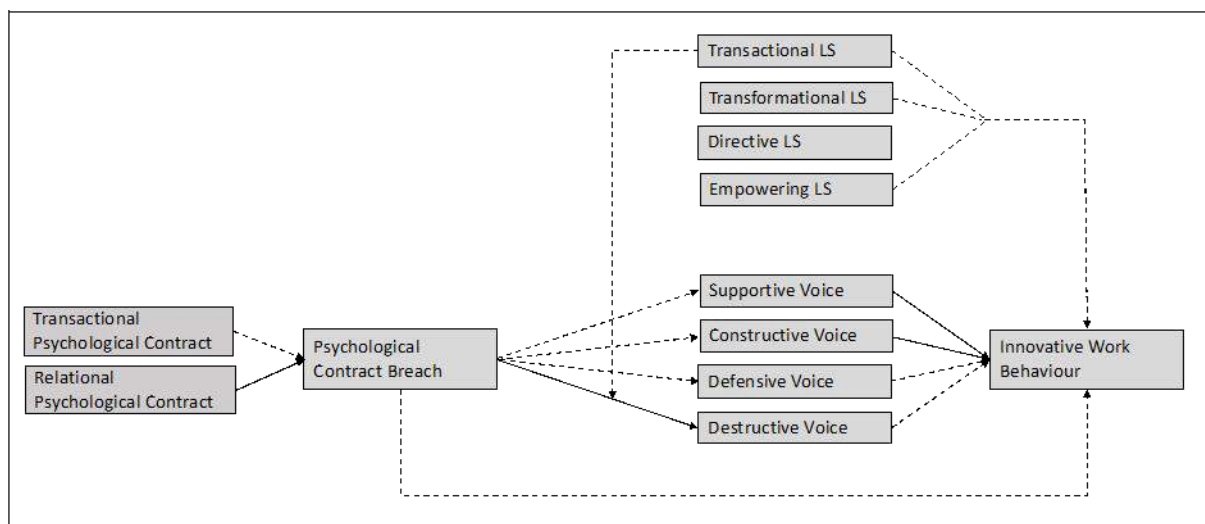


Figure 2: Specified conceptual framework. Source: Botha (2022)

Note: The statistically significant relationships between variables in Figure 2 are indicated with dotted lines ($p < .05$). The practically significant relationships between variables are indicated with solid lines ($r > .30$).

In terms of the overall results, this study revealed more than initially expected on the questions that the research aimed to answer. In brief, this additional information can be summarised as follows:

- According to the results, PCB does not lead to substantial changes in IWB. The relationship between breach and innovation was found to be very small.

- When EV was investigated as an antecedent of innovation, it was found that one particular type of voice, namely constructive voice, acted as a profound driver of innovation.
- Next, this research provided strong evidence that PCB influenced EV, particularly its prohibitive forms, namely defensive voice (DfV) and destructive voice (DsV), but not the promotive, particularly, constructive voice (CV) – the most critical in predicting IWB.
- Although leadership was found to influence the relationship between PCB and EV, it was not, however, shown to influence CV – the dimension of voice that would be beneficial in activating innovation.
- Finally, in comparing the relative strength of EV and LS as predictors for IWB, it appeared that LS acted as a less dominant predictor of IWB. The strongest predictor for innovation was EV, specifically, its constructive dimension.

Figure 2 provides a comprehensive integration of the results of this study. It is evident that the importance of EV, particularly its promotive forms, in predicting IWB outweighs the effects of LS on IWB. This makes a valuable contribution to understanding the complexities of the relationships between variables.

7. Conclusion

This research confirmed earlier results on the PC-IWB links, specifically, a negative relationship between TPC and IWB (Suh, 2002; Thompson & Heron, 2006) and a positive one between RPC and IWB (Chang et al., 2013; Thompson & Heron, 2006). Although in this study, the negative correlation between TPC and IWB is in line with previous research, its effect was statistically non-significant, which also confirmed results of the earlier investigations (Aggarwal & Bhargava, 2010). A surprising counter-intuitive finding in this study pertains to the relationship between PCB and IWB. Contrary to the existing evidence for the negative and statistically significant PCB-IWB link (Li et al., 2014; Vander Elst et al., 2016), in this study it was found that PCB had no effect on the innovative behaviour.

Outside of the original scope of this research, it also transpired that TPC correlated positively with PCB, while RPC correlated negatively with PCB. This leads to the conclusion that, under conditions of TPC, PCBs are experienced more often. The proposed explanation agrees with Zhao et al. (2007) who stated that, when employers fail to deliver on their explicit obligations, the PCB will result in immediate and extreme reactions from employees. The negative relationship between RPC and PCB suggests that, in situations where RPCs are observed, PCBs are experienced less often. This conclusion is in line with the assumption that employees often attribute the breach of the relational content of the PC to a miscommunication or bad luck, rather than to a deliberate breach on the part of the employer (Robinson & Morrison, 1995).

Rather surprisingly, this investigation illuminated the fact that no single leadership style was omnifluential. Nevertheless, it was found that transactional leadership style (TsL) had the most profound buffering effect on the PCB-EV links, for both defensive and destructive forms of voice. Furthermore, although the effect on constructive voice within a transactional environment was the opposite, TsL lessened the intensity of CV. This means that, within the transactional environments, when breaches happen, dealing with consequences of breach in an explicit manner will decrease prohibitive voices, but not necessarily increase promotive ones. Similar to the buffering effect of TsL on the PCB-EV link noted above, empowering leadership style (EL) also had a buffering effect on the PCB-EV link. This showed that, under transactional breaches, the empowering leader will lessen the expression of employees' destructive voice. These particular results are novel, as literature is scant on investigations of the effects of various leadership styles on multiple forms of employee voice.

8. Contribution

This research made a number of contributions. Firstly, this study attempted to solve the research problem, namely, that managers are unclear as to how to lead and apply themselves in environments typified by PCBs and where innovation is necessary. Given the paucity of the literature, researchers

and academics are ill-equipped to advise managers as to how this dilemma could be resolved. The literature provides extensive evidence that, when employees experience stress in their work environments, such as often stems from PCBs, they may withhold their discretionary efforts and extra-role behaviours, such as voice and innovation (Ng et al., 2010). However, achievement of employees behaving innovatively is an important managerial task (Bos-Nehles et al., 2017). There is no evidence of any studies that have attempted to investigate the issue of leading towards voice and innovation under conditions of PCB. The main contribution of this study is that it provided evidence that leadership style is not necessarily the first-choice remedy. As it turned out, there are more powerful factors involved in solving this research problem. One of these is the quality of the relationships between employers (with managers and supervisors as agents) and employees. Social exchange relationships, in the form of PCs, are fertile grounds for fostering discretionary actions of employees (Rousseau, 2004). In addition, the level of fulfilment of PCs by managers is a salient condition for activating the right employee voice, which leads to innovation. Practically, we saw that, particularly, constructive voice is the most powerful antecedent to innovation.

The second contribution pertains to the development of the conceptual Model, in which complex relationships between multidimensional constructs were explored. These relationships consisted of two types of PC (transactional and relational), two types of PCB (transactional and relational), four dimensions of EV (supportive, constructive, defensive and destructive) and four leadership styles (transactional, transformational, directive, and empowering). To the knowledge of the researcher, conceptually and theoretically, as well as methodologically, the relationships between these variables had not been investigated previously, and the set hypotheses had not been previously tested together, within one study.

Finally, the data for all tested models were collected from the same sample and analyses were done using the same measuring instruments. The similarity in the sourced data made it possible to compare as well as to combine models, which was essential to this study. When, for example, the links between leadership styles and innovation, organisational climate and innovation, and voice and innovation were tested, the same innovation construct was employed in each instance, along with the same measuring instrument, thus allowing for consistency in the results.

9. Limitations

The first limitation is that not all variables related to the dependent variables (IWB and EV) and independent variables (PC, PCB and leadership styles) were included in the research. For example, innovation or an expression of employee voice could be dependent on personality traits or individual characteristics, such as proactivity, that were not assessed in this study.

This study used a single source, single method approach. Data in a form of self-reported perceptions were collected from employees of organisations. Gaining information from managers as an additional source could be useful. Also, using interviews as an alternative source of data could be valid in establishing the links between variables.

The next limitation pertains to the researcher having limited the literature search to full-text articles in peer-reviewed and scholarly journals. These were retrieved from the four most popular and comprehensive academic databases in Business Management (EBSCOhost, Google Scholar, ProQuest and Sabinet). However, the fact that only these databases were searched could have resulted in pertinent literature being excluded from the search. Extending the search to other sources, such as conference papers and dissertations, could have yielded valuable and relevant information for this research study.

This study followed a cross-sectional design, which intends to describe the relationship between the variables. Using a longitudinal design, as suggested by Ployhart and Vandenberg (2010), would potentially add considerable value in investigating how changes in one variable (for example, in perceptions of PCB) relate to changes in other constructs, such as EV and IWB.

A final concern in this study relates to a common method bias (CMB), where the estimated relationship between constructs is inflated due to systematic covariation created by response patterns to questionnaires (Rodríguez-Ardura & Meseguer-Artola, 2020). At an ex-ante level, CMB was managed by making sure that the complete questionnaire provided to respondents was relatively short (Podsakoff et al., 2012) and was thus limited to 84 questions. Further, effort was made to select questions that were clearly and unambiguously worded (Podsakoff et al., 2003) so as to reduce the risk of CMB. The format of questions within the questionnaire differed from section to section, which counteracted similarity in response patterns (Podsakoff et al., 2012). As further ex-ante CMB management strategies, actual responses were solicited by asking respondents to answer all questions honestly, and by notifying the respondents in the informed consent form, that their anonymity (Steenkamp et al., 2010) would be safeguarded and that the research would have no direct impact on their lives (Steenkamp et al., 2010). These applied measures seemed to moderate possible CMB, as demonstrated in ex-post-tests. The Harman's single-factor test, which is widely used as a statistical tool that detects CMB (Fuller et al., 2016), revealed that factor 1 declared only 21.9% of the variance in the dataset, which is significant and is less than the rule-of-thumb of 50% (Fuller et al., 2016). Also, when considering the correlations between the constructs, all correlations were below the rule-of-thumb score, where correlations higher than .90 are a clear sign of CMB (Bagozzi, 1984; Bagozzi et al., 1991). The highest correlation ($r = .766$) was between TfL and TsL. The next highest correlation was .696, between TfL and EL. The average correlation between constructs was .208, with a standard deviation of .059. These results suggest that statistical CMB indicators in this study were below the thresholds, and it was concluded that CMB was not a concern in this investigation.

10. Recommendations and implications

Based on the research results, a number of recommendations can be put forward to academics as well as business practitioners.

To academics, this research offers a comprehensive model predicting IWB. The model provides the foundation for further research on this matter. From this research, it became apparent that PCB is not a dominant predictor of IWB, and that this may be excluded from further studies. Academics are, however, now informed that EV, more than LS, and more than PCB, is a dominant predictor of IWB. It is therefore suggested that models that aim at predicting IWB include EV construct, and models with other variables that may facilitate EV and IWB, be included in future research.

Secondly, researchers are advised to expand on the limitations of this study. The focus of this research was limited to employees' perceptions and behaviour, but it did not explore other possible influencing factors, such as personality traits of employees. Studying personality traits as a possible moderator could have shed light on the PCB-IWB link, which in this study was found to be non-significant. Alternatively, PCB could have led to innovation when proactive personalities or individuals with an internal locus of control were identified.

In terms of recommendations relevant to managers and business practitioners, many things can be done in order to foster their subordinates' voice and innovative behaviour. First and foremost, managers should maintain positive social exchange relationships with their employees. As the results show, regardless of the type of PC, managers should avoid breaching the contracts and endeavour to fulfil their promises and obligations to employees. Secondly, managers are advised to develop relational ties with employees, as these lead to higher levels of discretionary behaviours. The next suggestion is to create psychologically safe environments where employees will feel safe to speak up, and most importantly, when they do speak up, where employees' voices will be heard. Although this research found evidence of related importance of relational contracts in fostering EV and IWB, in the prevailing transactional environments, managers are advised to follow the "rulebook" – the fulfilment of explicit agreements. Finally, this study found no evidence of leadership style being a solution for enhancing promotive dimensions of EV – however, the results lead to a recommendation that applying transactional, transformational, and empowering leadership styles could buffer the levels of undesirable, prohibitive forms of employee voice behaviour.

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Design For The Environment: A Driver For The Implementation Of Green Initiatives

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Keywords

Supply chain, Green supply chain management, Green supply chain drivers, Green supply chain initiatives.

Abstract

The push for environmentally sensible supply chains (SC) has been inspired by the ecological impact of certain business activities. Environmental management has been recognised by companies as a key strategic issue that may have a lasting impact on organisational performance. In an effort to manage their environmental responsibility organisations have recognised that green supply chain management (GSCM) is an important approach. Green purchasing, green manufacturing, green packing, green distribution and marketing are core elements of GSCM. Although it has become apparent that easing environmental dilapidation and providing economic benefits is important, very little focus has been put on the drivers that do influence green supply chain initiatives (GSCI) particularly in Ekurhuleni. This study looks at the design for the environment as a driver that encourages green initiatives amongst manufacturers and endeavours to create awareness of the negative environmental effects associated with the entire life cycle of its products or services in Ekurhuleni.

1. Introduction

1.1. Problem Statement

Over the past three decades there has been increasing demand for manufacturing organisations to consider environmental aspects in their product's entire life cycle to improve environmental and economic performance of SC's. If actioned properly, this undertaking can reduce environmental degradation and drive GSCM practices. Green supply chain (GSC) adoption is driven by regulatory measures, competitor pressures, customer pressures and socio-cultural responsibility. These drivers ensure environmental compliance, healthy competition, customer satisfaction and socio-culturally responsible business practices in the SC. However, the influence of regulatory measures, competitor pressures, customer pressures and socio-cultural responsibility (GSC drivers) on manufacturing organisations' decision to adopt the Design for the environment (DfE) initiative has been under researched in South Africa, and not yet investigated in Ekurhuleni. This means that despite the importance of understanding these drivers, there is limited knowledge on SC drivers that foster the adoption of green initiatives in the South African context, particularly in Ekurhuleni. The Ekurhuleni municipality being one of three major metropolitan municipalities in the core of the Gauteng region. It covers an area of some 190147ha and has an estimated population of 2.5 million (SALGA, 2018).

1.2. Research aim and objectives

Based on the above problem statement, this study investigates the drivers that motivate manufacturers to adopt GSCM in Ekurhuleni. The objective is as follows:

Primary objective

- To determine the influence of GSC drivers on the company's decision to adopt DfE initiative. This study proposed the conceptual model, shown in **Figure 1.1**, to attempt to explain the influence of GSC drivers on the company's decisions to adopt the DfE initiative.

Secondary objective

- To explore the potential benefits derived from the use of the correct combination of green initiatives.

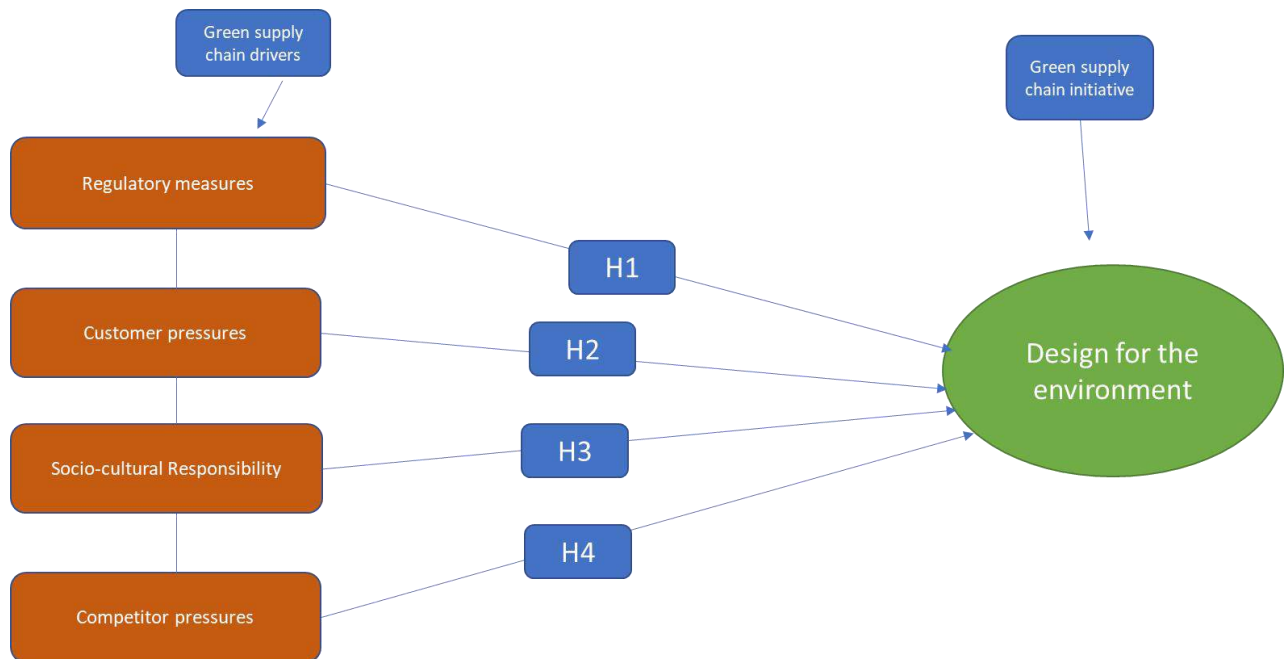


Figure 1.1: Conceptual model
Source: Researchers own compilation 2020.

1.3. Hypotheses

The following hypotheses were formulated for the study:

- H1: Regulatory measures have a positive influence on design for the environment.
- H2: Customer pressures have a positive influence on design for the environment.
- H3: Socio-cultural responsibility has a positive influence on design for the environment.
- H4: Competitor pressures have a positive influence on design for the environment.

2. Literature Review

2.1 Green supply chain management

Kirchoff, Tate and Mollenkopf (2016:3) define GSCM as a strategic capability because it is considered to be valuable, rare, inimitable, and able to be exploited by an organisation. McCarthy, Mohamed and Geng (2021) define GSCM as having numerous diverse aspects from, efficient buying, to the proper use of SC channels, to the manufacturing, as well as customer understanding and reverse logistics. Tumpa, Ali, Rahman, Paul, Chowdhury and Khan (2019:2) mention that GSCM contemplates the protection of the environment at every phase of the process, and is considered to be an effective technique in decreasing the adverse ecological impacts of the production of products. According to Baker and Hinton (2020), GSCM targets uninterrupted developments of manufacturing practices and products to reduce or stop pollution to air, water and land. Countries around the world are currently trying to address the negative impact of catastrophic levels of environmental contamination brought about by manufacturing activities. GSCM is seen as a forceful organisational concept to guide organisations in the management of key procedures that are aimed at plummeting ecological risks and improving environmental competence. Lee and Lim (2020) label GSCM as a notion that assimilates eco-friendly thinking into SCM whose activities are focused on plummeting or eradicating harmful chemicals, emissions and solid wastes generated in the SC process from product design, product purchase, the assembly process, and delivery to end users through the end of the product's life cycle. Vijayvargy, Thakkar and Agarwal (2017) indicate that the challenge in applying GSCM practices are due to its complexity, recourse needs and coordination issues and lower

inclination for adopting such practices. Previous studies showed that image of eco-friendly organisations was focused on marketing perspective or external GSCM practices.

2.2 Design for the environment

Somsuk and Laosirihongthong (2016:4) point to the understanding that experts and scholars recognise that the acceptance of GSCM practices can lead to sustainable competitive advantages, maintainable development and world-class performance. Mason and Norris (2018) ordered GSCM practices into four main groupings, namely internal environmental management, external GSCM practices, investment recovery, and eco-design dimensions. This study focuses on green supply chain initiatives GSCI, particularly the design for the environment (DfE). Thaib (2020) proposes that organisations currently face ample challenges from competitors to adopt GSCI's. Foo *et al.* (2019) stress that institutional pressures affect the consciousness of an organisation in determining its abilities to implement green purchasing practices that can lead to its competitiveness. According to Keivanpour and Ait Kad (2019), (DfE) 'is the environmental contemplation of the product development phase and the products whole life-cycle'. The International institute for sustainable development (IISD) (2020) recognise DfE as an umbrella term connected to procedures used to integrate an environmental component into products and services before they enter the production phase. Zheng, Govindan, Deng and Feng (2019) indicate that during the execution of DfE, organisations consider resource efficiency, environmental impact and remanufacturing during the design of products and furthermore organisations can decrease their resource consumption and production costs through effective implementation of the DfE for example, Canon has reduced its reliance on natural resources, waste and operation costs, and eventually provided a stable supply of resources through the improvement of technologies and product design (Zheng, Govindan, Deng & Feng, 2019). Burt and Sterling (2019) suggest that the main objective of DfE is to manufacture products in a way that, uses less energy, does not indirectly or directly contaminate the environment and can be reused or recycled at the end of their useful life. In line with Burt and Sterling (2019), the Product Design for the Environment (2020) suggest that DfE (which is also identified as green design) can be understood more entirely as a design method that must be considered for protecting and salvaging the earth's scarce resources, where energy and material consumption is optimised, minimal waste is produced and output waste streams from any procedure can be used as the raw material. According to Nambiar (2010), the DfE can be viewed as a manufactured goods design process that considers the potential environmental impact that assembled goods can prompt during its life-cycle and attempts to reduce the negative impact by addressing probable issues during the design stages of the product. Abdullah and Dawood (2017) point out that green product design concentrates on discovering a balance between man and nature, and takes into thought the possible negative impact to reduce the damage in the whole design process. The increased pressure from the public and ecologically mindful clients has led to certain environmental regulations or codes of practice being introduced (Azevedo, Carvalho & Machado, 2011). A case of such regulation in South Africa would be the Waste Classification and Management Regulation Act (Act 59 of 2008). Davis, Van Derk and Mahomed (2020) indicate that an organisation's market segment and profit aims, along with its manufacturing and financial performance, can be driven by an organisational product design and green activities. Hawkins and Mathews (2020) suggest that environmentally friendly natural resources, parts and components, should be used to design products. In light of this view Erkmen, Yavuz, Kavci and Sari (2020) state that in today's world the production of new eco-friendly raw materials is focused on the eradication of environmental pollution. South Africans generally do not take part in greening activities, particularly in the townships. So then what is the push for manufacturers to go green?

3. Research methodology

The target population for the study consisted of manufacturing organisations located in the EMM, particularly manufacturers of FMCG and pharmaceutical manufacturers because of their manufacturing environmental effects and geographical location. Within the abovementioned manufacturing organisations, the study focused on top and middle level management positions: production managers, supply chain managers, logistics managers, quality control managers and safety managers. The selected top and middle level management all had a direct or indirect influence on the product, be it before manufacturing, during manufacturing or post manufacturing. A probability

stratified sampling method was used to select managers within manufacturing organisations for this study. From the population size of 403 manufacturing organisations, an estimated sample size of 201 manufacturing organisations was determined. In this study, institutional theory is adopted to measure the extent to which a set of drivers motivate organisations to adopt GSCIs. The research objective for this study was based on theory development and prediction and thus employed the second-generation multivariate technique, structural equation modelling (SEM), to analyse data. The PLS-SEM reflective measurement was selected to conceptualise the measurement model reflectively. The study employed three indices to evaluate unidimensionality (outer model): Cronbach's alpha, Dillon-Goldstein's rho and eigen values. The quality of the inner model was assessed by examining the following indices: coefficient of determination (R^2), redundancy index, and the goodness-of-fit (GoF).

3.1 Measurement model evaluation

According to Ravand and Baghaei (2016), measurement model is evaluated in terms of the extent to which the indicators are unidimensional while the latent variables explain variations in the indicators and the constructs have discriminant validity. Van Niekerk (2019) suggests that a measurement model evaluation embraces evaluating the reliability and legitimacy of the manifest variables. Sanchez (2013) suggests that researchers can evaluate the measurement models using (PLS-PM) with the help of the PLS-PM package in R software environment. Hair, Hult, Ringle and Sarstedt (2017) suggest that to evaluate reflective measurement models, internal consistency as well as convergent and discriminant validity must be established. Each of these indicators was used in this study. The results of the unidimensionality of indicators is subsequently presented and interpreted.

3.2 Unidimensionality of indicators

The study employed three indices to evaluate unidimensionality: Cronbach's alpha, Dillon-Goldstein's rho and eigen values. The results, as presented in Table 1.1 indicate that the Cronbach's alpha for all the constructs were above the required cut-off point of 0.7, which indicate internal consistency. The Dillon-Goldstein's rho for all the constructs were above the recommended cut-off point of 0.7, which indicates homogeneity of the constructs. Therefore, the construct items are reliable and homogeneous.

Table 1.1: Unidimensionality assessment of measurement model 1

Model	Manifest variables (no of items)	Cronbach alpha	Dillon-Goldstein's rho
Regulatory measures	6	0,850	0.890
Customer pressures	5	0,805	0.865
Social-cultural responsibility	6	0,754	0.831
Competitor pressures	6	0,747	0.827
Design for the environment	7	0,869	0.901

Table 1.2 shows that the first eigen values of measurement model 1 were greater than 1, and the second eigen values were below 1 for only regulatory measures and customer pressures, while the remaining eigen values were above 1. This violated the unidimensionality thumb rule, which requires the second eigen values to be below 1. To address the violation of the unidimensionality thumb rule, a factor analysis of construct items is to be conducted.

Table 1.2: Unidimensionality eigen values

Unidimensionality			
Model	Manifest Variables (no of items)	1 st eigen value	2 nd eigen value
Regulatory measures	6	3.475	0.966
Customer pressures	5	2.816	0.876
Social-cultural responsibility	6	2.821	1.255
Competitor pressures	6	2.706	1.132
Design for the environment	7	3.990	1.332

Table 1.3 presents the factor loadings of measurement model 1. Items where factor loadings below 0.5 were dropped from the model as recommended by Van Staden (2014). This means that item V22 was dropped from the socio-cultural responsibility construct, and item V26 was dropped from the competitor pressure construct.

Table 1.3: Factor loadings of measurement model 1

Name	Block	Loading
V22	Socio-cultural responsibility	0.373
V26	Competitor pressure	0.418
V28	Competitor pressure	0.504
V35	Design for the environment	0.514
V23	Competitor pressure	0.549
V7	Regulatory measures	0.623
V13	Customer pressure	0.643
V17	Socio-cultural responsibility	0.645
V41	Design for the environment	0.656
V36	Design for the environment	0.661
V21	Socio-cultural responsibility	0.697
V6	Regulatory measures	0.699
V12	Customer pressure	0.702
V18	Socio-cultural responsibility	0.716
V14	Customer pressure	0.740
V10	Regulatory measures	0.743
V24	Competitor pressure	0.753
V19	Socio-cultural responsibility	0.760
V16	Customer pressure	0.776
V20	Socio-cultural responsibility	0.779
V25	Competitor pressure	0.779
V8	Regulatory measures	0.793
V27	Competitor pressure	0.797
V38	Design for the environment	0.800
V37	Design for the environment	0.812
V11	Regulatory measures	0.833
V15	Customer pressure	0.836
V9	Regulatory measures	0.837

After the dropping of the items with lower loadings (V26 and V22 for socio-cultural responsibility and competitor pressure, respectively) from the initial measurement model (measurement model 1) to ensure each item is unidimensional, the Cronbach's alpha values for all the constructs are above the suggested cut-off point of 0.7, as shown in Table 1.4. The results suggest that all the constructs are reliable with regards to internal consistency. Table 1.4 also shows that the Dillon-Goldstein's rho values for all the constructs are above 0.7, which indicates homogeneity of the constructs. The first eigen values of the measurement model are greater than 1, while the second eigen values are below 1

for all of the constructs, except for competitor pressures and design for the environment, which violates the unidimensionality thumb rule again. This requires the re-assessment of factor analysis of the items violating the unidimensionality rule to address the violation of the unidimensionality thumb rule. As shown in Table 1.4, the factor loadings of construct items were re-assessed to identify and drop the items of constructs that violate the unidimensionality rule.

Table 1.4: Unidimensionality assessment for Measurement model 2

Model	Manifest variables (no of item)	Cronbach's alpha	Dillon-Goldstein's rho	eigen. 1st	eigen. 2nd
Regulatory measures	6	0.850	0.890	3.475	0.966
Customer pressures	5	0.805	0.865	2.816	0.876
Socio-cultural responsibility	5	0.789	0.857	2.765	0.868
Competitor pressures	5	0.720	0.818	2.401	1.114
Design for the environment	7	0.869	0.901	3.990	1.332

Table 1.5 presents the factor loadings of measurement model 2 and items with factor loadings below 0.5 were dropped from the model as recommended by Van Staden (2014). The results show that all the items for the reflective blocks from V6 to V41 all scored above the cut off 0.5, meaning that they were acceptable.

Table 1.5: Factor loadings of measurement model 2

Name	Block	Loading
V6	Regulatory measures	0.696
V7	Regulatory measures	0.620
V8	Regulatory measures	0.790
V9	Regulatory measures	0.839
V10	Regulatory measures	0.746
V11	Regulatory measures	0.836
V12	Customer pressure	0.703
V13	Customer pressure	0.650
V14	Customer pressure	0.738
V15	Customer pressure	0.838
V16	Customer pressure	0.771
V17	Socio-cultural responsibility	0.666
V18	Socio-cultural responsibility	0.722
V19	Socio-cultural responsibility	0.798
V20	Socio-cultural responsibility	0.774
V21	Socio-cultural responsibility	0.681
V23	Competitor pressure	0.541
V24	Competitor pressure	0.753
V25	Competitor pressure	0.781
V27	Competitor pressure	0.805
V28	Competitor pressure	0.507
V35	Design for the environment	0.503
V36	Design for the environment	0.653
V37	Design for the environment	0.808
V38	Design for the environment	0.799
V39	Design for the environment	0.853
V40	Design for the environment	0.856
V41	Design for the environment	0.662

Since all the items for the reflective blocks of all constructs are above the cut-off point of 0.50, as shown Table 1.5, the unidimensionality of the measurement model was re-evaluated by means of principal component analysis (PCA) as some of the 2nd eigen values were above 1 rather than below 1. To achieve this end, factor analysis was once again performed using the Kaiser criterion to retain factors with 2nd eigen values greater than 1 for the competitor pressures, design for the environment constructs. Table 1.6 indicates the factor analysis results for design for the environment. The results show that two factors were retained as their eigen values are above 1 (factor 1 and factor 2) and accounted for 76% of the total variation for the design for the environment construct.

Table 1.6: Factor analysis Design for the environment

Factor analysis/correlation		Number of participants =	142	
Method: principal-component factors		Retained factors =	2	
Rotation: (un-rotated)		Number of parameters=	13	
Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	3.990	2.657	0.570	0.570
Factor 2	1.332	0.695	0.190	0.760
Factor 3	0.636	0.280	0.0909	0.851
Factor 4	0.356	0.056	0.050	0.902
Factor 5	0.299	0.068	0.042	0.945
Factor 6	0.231	0.077	0.033	0.978
Factor 7	0.153	.	0.021	1.000

After performing principal component factor analysis, the competitor pressures and design for the environment constructs were structured and reported according to sub themes. Hence, the results of the remaining items of the final measurement model, as shown by Table 1.7, indicate that Cronbach's alpha values for all the constructs are within the recommended cut-off of 0.70, except for the Cronbach's alpha for the competitor pressures construct that is slightly below 0.7 (0.68 and 0.69 for competitor pressures 1 and competitor pressures 2, respectively). The Dillon-Goldstein's rho values for all the constructs are above 0.7, which indicates homogeneity and unidimensionality of the constructs or indicators. The first eigen values of the measurement model is greater than 1 and the second eigen values for all of the constructs are below 1, indicating that they are unidimensional. Based on the results of Cronbach's alpha, Dillon-Goldstein's rho and eigenvalues, this study therefore indicates that the items of the final measurement model are unidimensional, as all the measures or indicators meet the suggested thresholds.

Table 1.7: Final measurement model

Constructs	Sub constructs	Manifest variables (no of item)	Cronbach's alpha	Dillon-Goldstein's rho	eig. 1st	eig. 2nd
Regulatory measures		6	0.850	0.890	3.475	0.966
Customer pressures		5	0.805	0.865	2.816	0.876
Social-cultural responsibility		5	0.789	0.857	2.765	0.868
Competitor pressures	Competitor pressures 1	3	0.680	0.825	1.844	0.766
	Competitor pressures 2	2	0.694	0.867	1.531	0.468
Design for the environment	Design for environment 1	3	0.869	0.920	2.382	0.443
	Design for environment 2	4	0.843	0.896	2.741	0.720

3.3 Convergent validity

The quality of the measurement model was inspected by checking the convergent validity which shows the degree to which the indicators the constructs are related. Table 1.8 presents the convergent validity results obtained. The AVE extracted indicate that all of the variables loaded higher than 0.5 which suggests that correlation between the constructs exists which means that the measurement model met the convergent validity requirement.

Table 1.8: Convergent validity

AVE (Average variance extracted)	
Regulatory measures	0.577
Customer pressures	0.550
Social-cultural responsibility	0.550
Competitor pressures	0.607
Design for the environment	0.793

3.4 Discriminant validity

Hair *et al.* (2011) proposed two measuring indicators of discriminant validity, which are the Fornell-Larcker criterion and the cross-loadings. The Fornell and Larcker (1981) criterion posits that ‘the square root of the AVE of each construct must be greater than its correlations with other constructs’. This study used both measuring indicators and Table 1.9 and Table 1.10 show that the measurement model met both the Fornell-Larcker and cross loading requirements for discriminant validity.

Table 1.9: Fornell-Larcker criterion of the measurement model

	Regulatory measures	Customer pressures	Socio-cultural responsibility	Competitor pressures 1	Competitor pressures 2	Design for the environment 1	Design for the environment 2
Regulatory measures	0.760						
Customer pressures	0.601	0.742					
Socio-cultural responsibility	0.343	0.419	0.742				
Competitor pressures 1	-0.199	-0.145	0.072	0.779			
Competitor pressures 2	-0.318	-0.335	-0.187	0.273	0.856		
Design for the environment 1	0.162	0.105	0.049	-0.202	0.114	0.891	
Design for the environment 2	0.216	0.249	-0.173	-0.114	-0.060	0.530	0.826

Note: Correlations among constructs in the lower area of the triangle; the squared AVE values bolded on the diagonal.

Table 1.10 presents the cross loadings depicting the discriminant validity. The results of Table 1.10 cross loadings indicate that all the indicators load higher on their respective latent construct than the other latent constructs supporting discriminant validity.

Table 1.10: Cross loadings

Constructs	Regulatory measures	Customer pressures	Socio-cultural responsibility	Competitor pressures 1	Competitor pressures 2	Design for the environment 1	Design for the environment 2
Regulatory measures	0.744	0.286	0.285	-0.174	-0.153	0.152	0.121
Regulatory measures	0.593	0.289	0.203	-0.200	-0.369	0.027	0.042
Regulatory measures	0.746	0.532	0.225	-0.103	-0.194	0.082	0.191
Regulatory measures	0.852	0.494	0.249	-0.149	-0.345	0.104	0.221
Regulatory measures	0.754	0.577	0.296	-0.176	-0.208	0.228	0.177
Regulatory measures	0.842	0.581	0.299	-0.113	-0.213	0.127	0.212
Customer pressures	0.655	0.772	0.365	-0.271	-0.290	0.166	0.190
Customer pressures	0.541	0.663	0.394	-0.199	-0.465	0.097	0.154
Customer pressures	0.381	0.762	0.168	-0.057	-0.208	0.037	0.194
Customer pressures	0.287	0.799	0.244	-0.045	-0.177	0.044	0.198
Customer pressures	0.350	0.707	0.425	0.086	-0.231	0.002	0.185
Socio-cultural responsibility	0.390	0.464	0.697	0.045	-0.144	0.018	-0.052
Socio-cultural responsibility	0.358	0.392	0.811	-0.078	-0.149	0.211	-0.168
Socio-cultural responsibility	0.379	0.429	0.820	-0.051	-0.160	0.072	-0.126
Socio-cultural responsibility	0.138	0.197	0.791	0.097	-0.095	0.038	-0.112
Socio-cultural responsibility	0.007	0.084	0.557	0.302	-0.149	-0.222	-0.162
Competitor pressures 1	-0.150	-0.180	0.025	0.633	0.170	-0.196	-0.098
Competitor pressures 1	-0.128	-0.108	0.113	0.928	0.160	-0.205	-0.159
Competitor pressures 1	-0.239	-0.079	-0.016	0.749	0.391	-0.052	0.044
Competitor pressures 2	-0.308	-0.277	-0.186	0.454	0.728	-0.086	-0.139
Competitor pressures 2	-0.280	-0.312	-0.162	0.170	0.968	0.172	-0.024
Design for the environment 1	0.131	0.045	0.158	-0.041	0.127	0.869	0.337
Design for the environment 1	0.125	0.093	0.072	-0.231	0.129	0.949	0.456
Design for the environment 1	0.184	0.142	-0.101	-0.253	0.045	0.852	0.629
Design for the environment 2	0.281	0.299	-0.040	-0.014	-0.037	0.545	0.787
Design for the environment 2	0.234	0.234	-0.020	-0.084	-0.069	0.532	0.863
Design for the environment 2	0.126	0.118	-0.188	-0.085	-0.056	0.456	0.895
Design for the environment 2	0.074	0.160	-0.300	-0.179	-0.039	0.235	0.753

3.5 Structural equation model assessment

The structural model was used to determine the model's explanatory power to test the developed hypothesis about the relationships among the constructs. The model's explanatory power was assessed through the coefficient of determination (R^2) redundancy index and goodness of fit (GoF) index and the significance of the path coefficients (Sanchez, 2013b, Ravand & Baghaei, 2016).

3.6. Coefficient of determination (R^2)

Hair, Hult, Ringle and Sarstedt (2014) state that 'this coefficient is a measure of the model's predictive accuracy and is calculated as the squared correlation between a specific endogenous construct's actual and predicted values'. Table 1.11 shows that the R^2 values for design for the environment 1 and design for the environment 2, are 0.107, 0.171, respectively. Based on Sanchez, Trinchera and Russolillo (2015)'s proposed threshold for R^2 values (above 0.60, between 0.30 and 0.60, and below 0.30 for high, moderate and low, respectively), the R^2 values, as shown in Table 1.11, are regarded as low results. This means they explain variations in the data to a low degree.

Table 1:11: Coefficient of determination (R²) and goodness of fit (GoF)

Constructs	R ²	GoF
Design for the environment 1	0.108	
Design for the environment 2	0.171	
		0.317

3.7. Goodness of fit

Sanchez (2013) indicates that there is no guidance about what number could be considered a good GoF value, but rather GoF can be used to gain better understanding of the models' predictive power. The GoF index of 0.317 for the whole model is well below the suggested cut-off of 0.70.

3.8. Significance of the path coefficients

The path coefficients act as determinants of relationships between the constructs, as hypothesised and are interpreted based on the range of -1 and 1, where coefficients nearing +1 indicate a strong positive relationship and -1 a strong negative relationship (Hair, Hult, Ringle, & Sarstedt, 2014). Bootstrapping was undertaken to determine the significance of each path coefficient using the confidence intervals, as recommended by several scholars such as Sanchez (2013) and Ravand and Baghaei (2016). The plspm algorithm output was used to examine relationships among constructs. However, in plspm in order to test the significance levels for each path estimate, 95% confidence intervals (with lower and upper percentiles) for all paths are generated by means of the bootstrapping function. Based on the output of 95% confidence intervals, the significance level of each path was determined. Table 1.12, indicates two positive significant paths which are: regulatory measures onto design for the environment 2, and customer pressures onto design for the environment 2. The table also shows two negative significant paths: socio-cultural responsibility onto design for the environment 2, competitor pressures 1 onto design for the environment 1 and the remaining six paths were no significant.

Table 1.12: Bootstrapping analysis of the structural model path coefficients

path	Original	Mean. Bootstrap Coefficient	Standard Error	95% Confidence Interval	
				perc.25	perc.975
Regulatory measures → Design for the environment 1	0.153	0.167	0.103	(-0.049, 0.371) ^{ns}	
Regulatory measures → Design for the environment 2	0.155	0.188	0.088	(0.029, 0.380)*	
Customer pressures → Design for the environment 1	0.044	0.047	0.112	(-0.170, 0.292) ^{ns}	
Customer pressures → Design for the environment 2	0.310	0.292	0.112	(0.054, 0.493) *	
Socio-cultural responsibility → Design for the environment 1	0.041	-0.005	0.149	(-0.282, 0.223) ^{ns}	
Socio-cultural responsibility → Design for the environment 2	-0.348	-0.353	0.080	(-0.504, -0.190) #	
Competitor pressures 1 → Design for the environment 1	-0.236	-0.218	0.091	(-0.373, -0.034) #	
Competitor pressures 1 → Design for the environment 2	-0.022	0.001	0.120	(-0.199, 0.243) ^{ns}	
Competitor pressures 2 → Design for the environment 1	0.250	0.206	0.140	(-0.103, 0.404) ^{ns}	
Competitor pressures 2 → Design for the environment 2	0.034	0.015	0.138	(-0.243, 0.245) ^{ns}	

p < 0.05, * denotes positive significant, # denotes negative significant, ns denotes no significant, perc.025 denotes lower percentile, perc.975 denotes upper percentile.

Figure 1.2 presents the measured research model indicating the paths with positive and negative significant relationships and non-significant relationships. The positive relationships are represented by solid bold lines while negative relationships are dashed bold lines and non-significant relationships are just dashed lines.

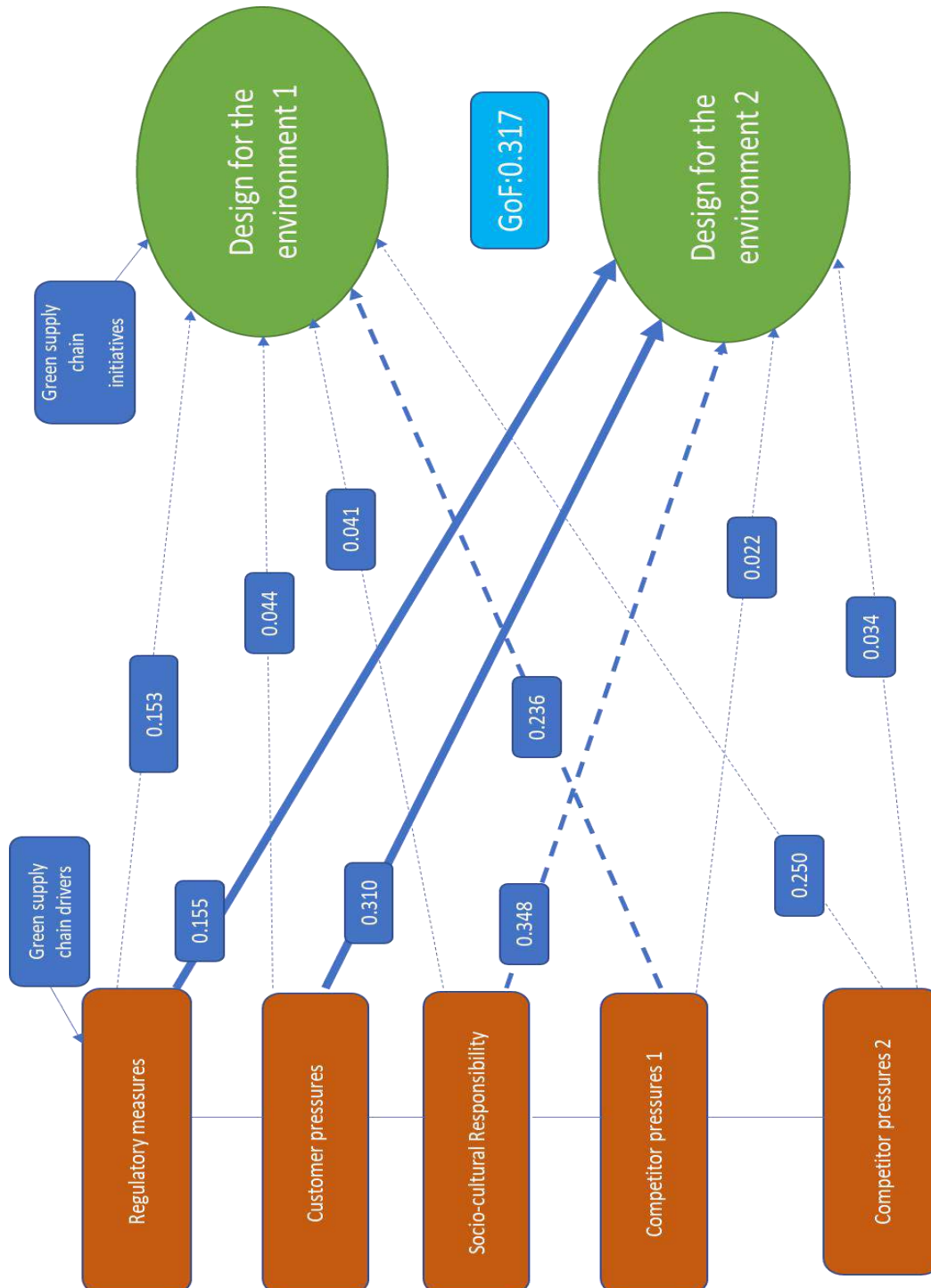


Figure 1.2 Measurement model

3.9 Hypotheses testing

This section tests the proposed hypotheses in relation to the bootstrapped results by assessing the path coefficient between two latent variables. The hypotheses testing was performed to determine the direction of the relationships (positive or negative) and the significance levels for each path estimate.

Several scholars (such as Wetzels *et al.*, 2009; Hair *et al.*, 2011) indicated that for the structural model to be accounted as having a certain impact, the path coefficient value (β) should be at 0.1. Table 1.20 presents the assessment outcome of the path coefficient and show that most proposed hypotheses are not supported (H1, H2, H3, H4) (refer to Table 1.19). The analysis of proposed hypotheses was performed using the 95% confidence interval (CI) and a path coefficient value (β) to determine the statistical significance and directional sign of the relationship (i.e. positive or negative).

Table 1.20: Hypotheses testing

Hypothesis statement		Path coefficient value (β)	Confidence intervals (.025, .95.7)	Results
H1	Regulatory measures have a positive influence on design for the environment	0.153 0.155	(-0.049, 0.371) (0.029, 0.380)	Supported
H2	Customer pressures have a positive influence on design for the environment	0.044 0.310	(-0.170, 0.292) (0.054, 0.493)	Supported
H3	Socio-cultural responsibility has a positive influence on design for the environment	0.041 -0.348	(-0.282, 0.223) (-0.504, -0.190)	Not supported
H4	Competitor pressures have a positive influence on design for the environment	-0.236 -0.022 0.250 0.034	(-0.373, -0.034) (-0.199, 0.243) (-0.103, 0.404) (-0.243, 0.245)	Not Supported

The analysis outcome shows that a positive influence of regulatory measures on design for the environment at two path coefficient values and two CI [$(\beta=0.153$ & 0.155 , $CI= (-0.049, 0.371)$ & $(0.029, 0.380)$]. The reason for using two path coefficient values and two CI is because the design for the environment construct was sub divided into two sub constructs (design for the environment 1 and design for the environment 2) in the search of unidimensionality of the final measurement model (refer to Table 1.14). As a result, hypothesis *H1 is supported*.

The analysis outcome shows that the positive influence of customer pressures on design for the environment at two path coefficient values and two CI [$(\beta= 0.044$ & 0.310 , $CI= (-0.170, 0.292)$ & $(0.054, 0.493)$]. The reason for using two path coefficient values and two CI is because the design for the environment construct was sub divided into two sub constructs (design for the environment 1 & design for the environment 2) in the search of unidimensionality of the final measurement model (refer to Table 1.14). As a result, hypothesis *H2 is supported*.

The analysis outcome shows that socio-cultural responsibility does not have a positive influence on design for the environment at two path coefficient values and two CI [$(\beta= 0.041$ & -0.348 , $CI= (-0.282, 0.223)$ & $(-0.504, -0.190)$]. The reason for using two path coefficient values and two CI is because the design for the environment construct was sub divided into two themes (design for the environment 1 & design for the environment 2) in the search of unidimensionality of the final measurement model (refer to Table 1.14). As a result, hypothesis *H3 is not supported*.

The analysis outcome shows that competitor pressures do not have a positive influence on design for the environment at four path coefficient values and four CI [$(\beta= -0.236, -0.022, 0.250$ & $0.034)$, $CI= (-0.373, -0.034)$, $(-0.199, 0.243)$, $(-0.103, 0.404)$ & $(-0.243, 0.245)$]. The reason for using four path coefficient values and four CI is because both the competitor pressures and design for the environment constructs was sub divided into two themes (competitor pressures 1, competitor pressures 2, design for the environment 1 & design for the environment 2) in the search of

unidimensionality of the final measurement model (refer to Table 1.14). As a result, hypothesis *H4* is *not supported*.

3.10 Data collection

To achieve the research objectives and test proposed hypotheses primary data was collected using self-administered in-person drop-off questionnaires, delivered to selected manufacturing organisations in the EMM. Prior to questionnaires administration to the respondents, they were pre-tested by twenty respondents from the EMM who were manufacturing or production personnel, logistics or operations managers, factory managers, procurement managers or quality control personnel in their companies. The pre-test enabled the researcher to determine whether the questionnaire instructions were clear and understandable and also know how much time it took to complete the questionnaire. The research instrument comprises two broad aspects: GSC drivers and GSCIs. It conceptualises the drivers of GSC adoption and GSCIs as multidimensional concepts. GSC drivers consisted of four constructs, namely, regulatory measures, competitor pressures, customer pressures and socio-cultural responsibility. A five-point Likert scale was used to measure both GSC drivers and GSCI as it assisted the researcher to determine the extent of the relationships. The measurement scales ranged from 1 – “strongly disagree” to 5 – “strongly agree” and from 1 – “does not exist at all” to 5 – “exists to a very high extent” for drivers of GSC adoption and GSCI constructs, respectively.

4. Results and Findings

The findings suggest that regulatory measures and customer pressures collectively measured a higher order GSC driver. These drivers serve to persuade manufacturing organisations’ in EMM to adopt various GSCI’s. The GSC drivers cause organisations to engage in green purchasing, green manufacturing and green packaging. This study argued that supply chain partners’ commitment to supporting greening endeavours of suppliers plays a vital role in ensuring mutually sought-after environmental benefits across the supply chain. To synergise such endeavour requires the design and monitoring of mutually managed environmental programmes across the supply chain. Arguably, this study points out that socio-cultural integration could streamline buyer-supplier relationships by supporting GSC practices and GSCIs. Most of studies have used CB-SEM to assess conceptual models on GSCM in both developed and developing economies because of its emphasis on multivariate normality. To the knowledge of the researcher, this study is the first to assess the conceptual model to test the relationships between drivers of GSC and GSCIs using PLS-PM. This study also argued that adopting GSC principles or initiatives can help organisations to build and maintain a healthy competitive advantage and improved organisational performance. It is also argued that mutual environmental benefits across the supply chain can only be ensured when supply chain partners commit to supporting suppliers’ greening efforts. This study’s data collection was restricted to FMCG and pharmaceutical manufacturing companies in the Ekurhuleni region, while other categories of manufacturing companies in the same region were not included.

5. Managerial Implications

Managers can use this study to assess the impact of adopting set regulations to stimulate customer purchases to gain a healthy competitive advantage using tactical resources to support strategic environmental management in their SC. Managers in EMM can adapt the green regulations set by governing bodies, this can have a positive impact on customer goodwill and further increase competitiveness. Managers can include customers in product development by conducting surveys directing the company to the kind of green footprint they want. Managers can uphold their social responsibility to ensure adherence to set regulations, whilst educating consumers about green practices in hopes of forcing the manufacturers to become responsible corporate citizens. The study also gives managers suitable ideas and courses of action to manage green practices in SC’s that eventually advance performance as well as give a clearer view of the potential GSCM strategies to increase organisational performance... Finally, managers could send selected staff members for training to better understand the new and advanced methods of green manufacturing.

Acknowledgments

A special thanks to Mrs Princess Ramokolo who ran the system to analyse the data as well as Dr. Francis Mpwanya who provided helpful insight on the topic.

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Examining the Perceived Influence of Remote Working on Employee Productivity in South Africa

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Keywords

Remote work(ing);
working from home;
traditional work;
employee productivity;
Covid-19 pandemic

Abstract

Remote work recently became the new normal globally in various organisations due to the Covid-19 pandemic, which forced organisations to adapt quickly and strategically. Non-essential workers were required to work from home to help slow the spread of Covid-19. Due to the pandemic's unforeseen changes in the business world, not all companies promptly adapted to remote work. The coronavirus changed industries from traditional to remote work and left companies lacking electronic resources to continue business online. This change brought many challenges to businesses globally and afforded both employees and employers opportunities such as reduced travel time for employees and access to broader talent pools for employers. This research aimed to investigate the perceived influence of working remotely on employee productivity in South Africa. A quantitative research approach was followed using a survey, and the sample population was 102 remote workers between the age of 18 and 65 within a specific sector. The sampling method adopted for this research was purposive sampling using a compliment sampling approach. The results revealed that respondents preferred traditional work over remote work due to convenience and cost-efficiency. Respondents indicated that working in isolation, working longer hours remotely than in the office, and not having a social life outside of work, made them focus more on their work; however, it made them less productive overall as it negatively affected their well-being.

1. Introduction

Remote working has been in existence even before the Covid-19 pandemic. Recently remote working is more in use in different organisations worldwide due to the Covid-19 pandemic, which forced these organisations to adapt swiftly. Remote work has been studied under various terminology, all connected and, to some extent, meaning the same thing. Benjamin (2020) states that remote working is when the employee resides outside of the organisation's main office's geographical location for work. A remote working employee works away from the office and uses telecommunication (Lopaz, 2020). According to Virtanen (2020), remote work is working from other premises rather than the employer's premises. The previous authors inferred that remote work has had both negative and positive effects on organisations and employees and that some employees enjoy remote work more than others.

Traditional work differs from remote work in that employees have face-to-face interactions, which improves productivity since there is guidance from other employees. During face-to-face meetings, colleagues can read each other's body language and facial expressions when ideas are shared during the meeting. There is also a chance for team building, and performance management is more straightforward when employees work traditionally (Saurombe & Barkhuizen, 2022; Shingenge & Saurombe, 2022). Now that many businesses have transitioned to remote working, work is performed differently. Employees do not have much engagement, and team-building meetings or exercises are not considered a priority anymore. As for employees who depend on interactions with fellow

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employees, it is difficult for them. According to Thorstensson (2020), remote working decreases costs for organisations and employees and increases spending time with families. In addition, costs are cut due to not commuting to work. Organisations provide technological equipment to employees so that work can continue to be performed effectively and efficiently at home.

Many organisations worldwide continue to face tremendous change and challenges internally and externally because of the Covid-19 outbreak. Therefore, it is crucial to identify and understand the shift from the traditional workforce to what we now know as the new normal of working remotely (Singh et al., 2017). Even though many adverse effects were listed at the start of the pandemic, such as companies being unable to adapt to the sudden changes and many employees finding it difficult to work from home, companies must be able to adapt and provide all the resources needed to uphold job productivity and performance levels (Jalagat & Jalagat, 2019). Despite many adverse effects that different organisations in their respective industries might experience, the adoption of remote work is advisable to keep up with the change in terms of employment policy adjustments, new technology provision, and support to ensure that they survive in the new normal of doing business (Lal et al., 2021; Li et al., 2022). The Covid-19 pandemic is, therefore, an eye-opener for every organisation to meet the requirements needed to identify any future problems that may arise so that they can quickly adapt and survive.

2. Problem Investigated

Technology introductions significantly affect the change management system in the global market economy. Remote working as a research phenomenon had previously been practiced by developed countries, especially in the United Kingdom, Germany, and the United States; however, in developing countries, such as Mozambique and China, this is a new concept (Jalagat & Jalagat, 2019). South Africa is no exception. The Covid-19 crisis highlights how organisations utilised remote working to ensure they are safe and provide economic activity continuity. At the early stage of the virus, several governments worldwide recommended that companies facilitate working remotely to avoid employees physically gathering in the same environment (Belzunegui-Eraso & Erro-Garcés, 2020). Due to the pandemic's unexpected and rapid changes in the business world, not all companies have adapted to remote working promptly. This is experienced more in developing countries as there is a shortage of electronic resources to continue business online (Ngobeni et al., 2022). The Covid-19 pandemic transformed industries from traditional to remote workspaces. It is therefore essential for organisations to monitor the productivity of employees - particularly those who may continue to work from home or in a hybrid fashion in the long-term - compared to when they were working from the office environment full-time, as such studies will inform the long-term receptiveness of working remotely, even after the Covid-19 pandemic has eventually abated or ended. This was the aim of this study.

3. Research Aim and Objectives

3.1. Research Aim

The study sought to investigate the perceived influence of working remotely on employee productivity in three South African provinces.

3.2. Research Objectives

- To investigate the perceived influence of working from home during the Covid-19 pandemic on overall employee well-being.
- To identify the advantages and disadvantages of employees working remotely.
- To propose recommendations regarding the remote working of employees.

4. Main and specific research questions

4.1. Main research question

The main research question of this study was: what is the perceived influence of remote working on employee productivity in South Africa?

4.2. Specific research questions

- How does working from home during the Covid-19 pandemic influence perceptions on overall employee well-being?
- What are the advantages and disadvantages of employees working remotely?
- What are best practices regarding the remote working of employees?

5. Literature Review

5.1. The theoretical framework of the study

5.1.1. The Agency Theory

Agency theory is a concept used to explain the critical relationships between principals and their relative agents. In the most basic sense, the principal heavily relies on an agent to execute specific transactions resulting in fluctuating outcomes (Serapicos et al., 2020). Agency theory is commonly utilised to understand and explain corporate governance phenomena, including executive incentive alignment, board monitoring, and control of top managers; this literature is founded in economics and represents the bulk of the research in business and management (Payne & Petrenko, 2019). The theory assumes that once principals delegate authority to agents, they often have problems controlling them because agents' goals often differ from their own, and agents often have better information about their capacity and activities than principals (Kivistö & Zalyevska, 2015). In this study, the researcher sought to assess how working from home affects employee productivity in South Africa, mainly because it is argued that the distractions associated with working from home (especially when transitioned abruptly) often render employees less productive as the tendency is for them to prioritise their own duties than the work of their employer when away from the office (Nguyen, 2021), as inferred by the agency theory.

White (2018) delineated that when an employee works in the office, the firm has perfect knowledge of the employee's productivity and therefore offers to pay a constant wage determined by that level of productivity. This constant wage is based on the expected output of high-effort workers. Because the firm can ideally monitor office workers, it can differentiate effort (denoting high and low effort, respectively) from the stochastic output based on that effort and offer a fixed wage to workers that supply high effort. Further, it is assumed that location can affect productivity independent of effort level, such that office workers may be more productive than home workers and vice versa (White, 2018). This implies that during the Covid-19 pandemic, the productivity of employees working remotely could either have increased or decreased compared to before (when they were working from the office), depending on work circumstances and individual resilience.

5.2. Advantages and disadvantages of remote work for employees

According to Nield (2016), people who work remotely are more productive and happier than traditional workers, even though remote workers are not physically present in the office. Like any other work arrangement, remote working has advantages and disadvantages.

5.2.1. Advantages of remote work

Recent research has indicated that there are many benefits of working from home. Jalagat and Jalagat (2019) state that flexible working hours are advantageous for remote working employees. Firstly, individuals working from home enjoy the freedom of managing their schedule and can attend other appointments while working, making them feel less under pressure and letting them complete tasks efficiently (Giguari, 2020a). The second advantage is cost-saving, which makes remote working beneficial to employees. Employees save on transportation costs, fuel, and traveling time to work. The third advantage is a change of environment; employees tend to work more freely without micromanagement (Singer-Velush et al., 2020). The fourth advantage of remote work for employees is low levels of stress. Individuals traveling to work daily and being in traffic for long hours tend to be stressed when they reach work, negatively influencing their productivity for the day (Purwanto et al., 2020). Lastly, there is an increase in productivity and motivation. Remote working may increase job satisfaction, leading to increased employee productivity and motivation (Jalagat & Jalagat, 2019; Lal et al., 2021).

5.2.2. Disadvantages of remote work

In contrast, there are also pitfalls that employees experience due to the transition to working remotely, including the loss of motivation, due to the different atmosphere of a house compared to the office (Singer-Velush et al., 2020). One can get distracted by social media, television shows, entertainment, and family at home. Further, there is less teamwork; working remotely has led to employees communicating less with each other, which might cause employees not to be updated with current events or issues in the organisation (Thorstensson, 2020). Isolation and the reduced ability to interact and brainstorm may also negatively impact employees' productivity and reduce their sense of belonging (Purwanto et al., 2020; Li et al., 2022). Another disadvantage is employee personal cost increases. Even though organisations may save costs on office space, electricity, water, telephone bills, and other overheads and employees might save on transport, employees' savings go back into ensuring an office space at home (van Zoonen et al., 2021). Employees' costs may increase due to increased electricity consumption at their homes, data costs, mobile bill increase, buying comfortable chairs and a table to turn their home into comfortable office space, and an increase in their groceries budget as employees tend to eat more while at home. Other distractions associated with remote working, such as noise in the neighbourhood or restaurants and noisy kids at home, may impact concentration levels and employees' productivity (Purwanto et al., 2020; van Zoonen et al., 2021).

5.3. Advantages and disadvantages of remote work for organisations

5.3.1. Advantages of remote work

Deloitte (2020) mentions that organisational expenditures such as rent, repairs, computers, telephones, offices, utilities, supplies, parking spaces, and other expenses are minimized when employees work remotely. Organisations may also experience increased productivity, according to Deloitte (2020), as long commutes are eliminated and workplace disturbances (coffee breaks, co-worker disruptions, etc.) are reduced. Working remotely may further result in reduced absenteeism. According to Lupu (2017), diseases, family gatherings, harsh weather conditions, and mental breakdowns usually increase absenteeism, especially when employees have fixed, full-time office schedules. Another benefit is that remote working allows the possibility of employing those who may otherwise be unable to come to work, such as mothers, the disabled, and workers who live far from the workplace and do not want to relocate (Lupu, 2017).

5.3.2. Disadvantages of remote work

Deloitte (2020) states that working remotely can present power, internet access, and hardware problems, which are more challenging to address at home, even with remote IT support. Another setback to remote work is the loss of control over the employees. According to Thorstensson (2020) and Gigauri (2020b), organisations are concerned that employees will prioritise personal errands overwork or give their tasks to others to complete on their behalf, further reducing organisational power, as supported by the agency theory. This could result in data protection issues. The third setback is productivity and work quality problems; supervisors reported distractions in the employees' home environments as a disadvantage. They also complained about a lack of good work-related tools, such as technical equipment and files stored at the primary worksite required to conduct work-related tasks when remote working (Nguyen, 2021).

Finally, according to Thorstesson (2020) and Lal et al. (2021), the company's disadvantage is the risk of harm or misuse of office equipment and the liability issue that arises when the office equipment is off-site. Other drawbacks include the cost of repairing and transporting broken office equipment, identifying who is responsible for the repair (the company or the individual), and deciding how to replace the broken equipment (Greer & Payne, 2014; Thorstesson, 2020).

6. Research Methodology

6.1. Research approach

This research aimed to investigate the perceived influence of working remotely on employee productivity in South Africa. The study followed a quantitative approach by distributing a survey/questionnaire to the pertinent research sample. Data collected was carefully selected and studied for each variable. Since the data was collected through survey responses, the variables were

neither controlled nor manipulated. Although a qualitative, exploratory study may have been more pertinent to the study, due to the national Covid-19 lockdown regulations in South Africa at the time of data collection, which prevented face-to-face interviews, a lack of the appropriate equipment and resources for remote interviewing resulted in the researcher opting for a quantitative research approach, using electronically distributed surveys.

6.2. Population and sampling

According to South African law, the Basic Conditions of Employment Act (BCEA) No. 75 of 1997 stipulates that no employer should employ an individual under 15 years. Therefore, the respondents included working individuals from 18 years of age up to the retirement age, as the shift from traditional work to remote working affects all generations of the current workforce. The number of respondents targeted for this research was initially 150, although only 102 questionnaire responses were ultimately obtained. Due to time and financial constraints, the researcher did not continue with data collection, especially since the study did not primarily seek to establish cause-effect relationships but rather descriptive statistics; hence, the sample size was deemed appropriate (Adhikari, 2021). The focus was on employees with a minimum of more than three years of work experience, particularly in various sectors within three South African provinces. The minimum work experience requirement was to get respondents with at least ample experience working remotely during the Covid-19 pandemic.

The sampling technique used was purposive sampling, whereby the researcher's experience and knowledge were used to create samples. Through the application of the purposive sampling technique, the sample chosen for the study consisted of an array of individuals in full-time, flexible, and part-time remote work who agreed to be part of the research. A complementary snowball sampling technique was further applied, whereby surveys were completed by initially selected respondents who referred the study to other remote workers. The researcher encouraged them to disseminate the survey link to others in their field or profession.

6.3. Data Collection

The measuring instrument for this research was an adapted version of previous questionnaires compiled by the researcher. The survey consisted of two sections. Section A was based on the biographical information of the respondents, and Section B included pertinent sub-sections about the teleworking experiences of the respondents. The ranges used for the survey questions were: strongly agree, agree, neutral, disagree, and strongly disagree for section B. The data was collected electronically using a Google form link disseminated among the respondents. This was to minimise physical contact with respondents in adherence to the Covid-19 protocols and national lockdown regulations at the time of data collection. The survey was closed-ended and took approximately 15-20 minutes to complete, as suggested by the pilot study, which was conducted before the official data collection.

6.4. Data Analysis

After collecting the data via google forms, the data was collated, coded, and cleaned in a Microsoft Excel spreadsheet (Pallant, 2016). Statistical analysis was then utilised to analyse the collected data. Statistical analysis is a method for carrying out numerous statistical operations, where the goal is to quantify the data using some form of statistical analysis. Descriptive data, such as surveys and observational data, are examples of quantitative data. The statistical analysis software used was the Statistical Package for the Social Sciences (SPSS) (IBM, 2012).

6.5. Measuring Instrument

Measuring instruments are tools professionals and researchers use to evaluate or assess subjects or respondents in a particular study. These tools include surveys, scales, indexes, interviews, and informal observations. The instrument used for this research was an adapted version of previous questionnaires compiled by the researcher. A survey consisting of two sections was conducted, including biographical information questions and questions related to the perceived influence of remote work on employee productivity in South Africa.

6.6. Ethical Considerations

A deontological approach was used as follows to protect the credibility of this research paper, ensuring that no respondents were negatively affected in any way (Drost, 2011):

Voluntary participation: No intimidation or manipulation was used, and respondents were not compelled to participate. Respondents were assured that they were not obligated to participate and that there were no negative consequences if they chose not to.

Informed consent: Respondents were briefed about the study's intent and the existence of any possible adverse effects of their involvement. Respondents were also allowed to withdraw from answering the survey if they wished to.

Confidentiality and anonymity: Respondents' information was kept anonymous, and their organisations were not mentioned to protect their identities and occupations. Respondents were also asked for permission to use their responses for the research paper.

Accuracy of information: The information provided by the respondents was not altered or changed in any way. All data were presented as it was provided.

The researcher also adhered to ethical conduct and standards in compliance with the University of Johannesburg's ethical policy. The names and details of the respondents were kept confidential. An information sheet in the form of a letter was also provided to respondents. The University of Johannesburg's research ethics committee approved the letter, which included the researcher's details and the purpose of the research. Respondents signed a consent form, which proved that respondents agreed to participate in the research.

7. Results

7.1. Biographical information of the sample

The most significant portion of the sample worked in Gauteng, 89.22 percent (n=91), followed by those who worked in Limpopo, 5.88 percent (n=6). Moreover, the remainder of the respondents, 4.90 percent (n=5), worked in the Free State province.

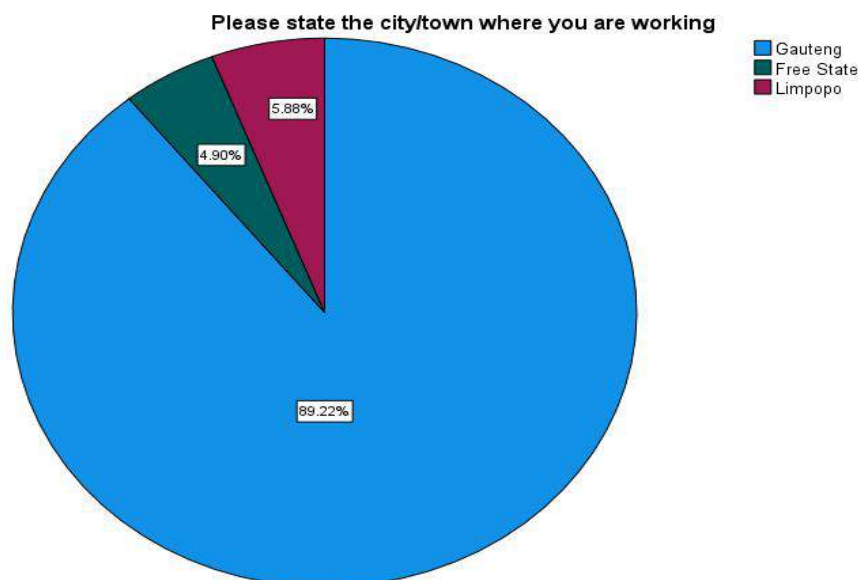


Figure 1: Province of employment (author's own compilation)

The most significant portion of the sample were females, 60.78 percent (n=62), followed by 39.22 percent (n=40) males.

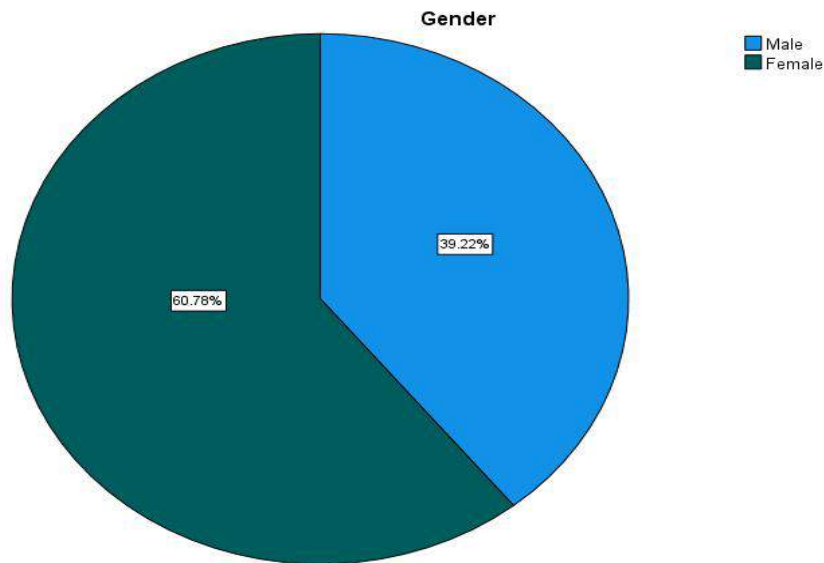


Figure 2: Gender (author's own compilation)

The most significant portion of the sample was from Generation Z, 49.02 percent (n=50), followed by 31,37 percent (n= 32) Millennials. Generation X comprised 16.67 percent (n=17) of the sample, and Baby boomers were 2.94 percent (n=3).

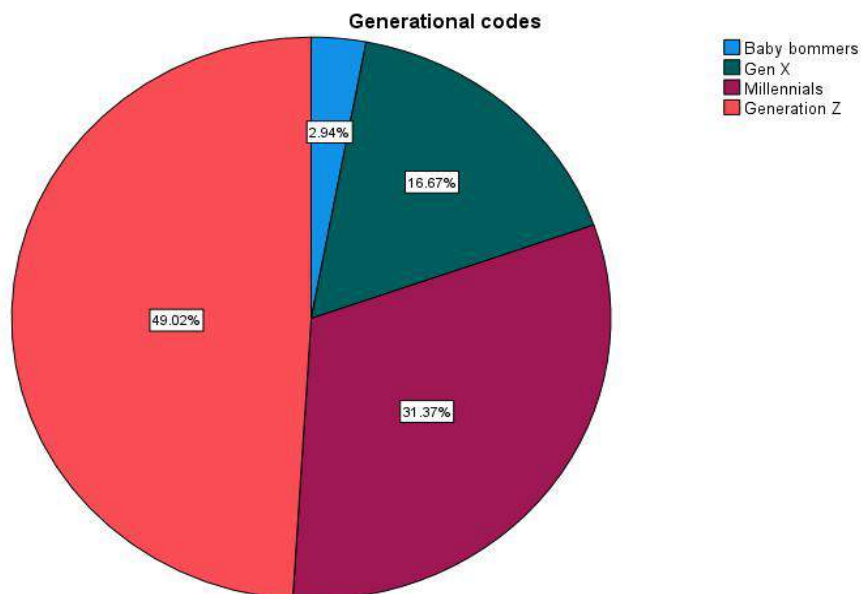


Figure 3: Generational codes (author's own compilation)

The most significant portion of the sample was Black with 58.82 percent (n=60), followed by Coloured with 26.47 percent (n=27). 4.90 percent (n=5) of the sample were whites, 4.90 percent (n=5) were Asian, and 4.90 percent (n=5) were from other ethnic groups that were not explicitly mentioned in the survey.

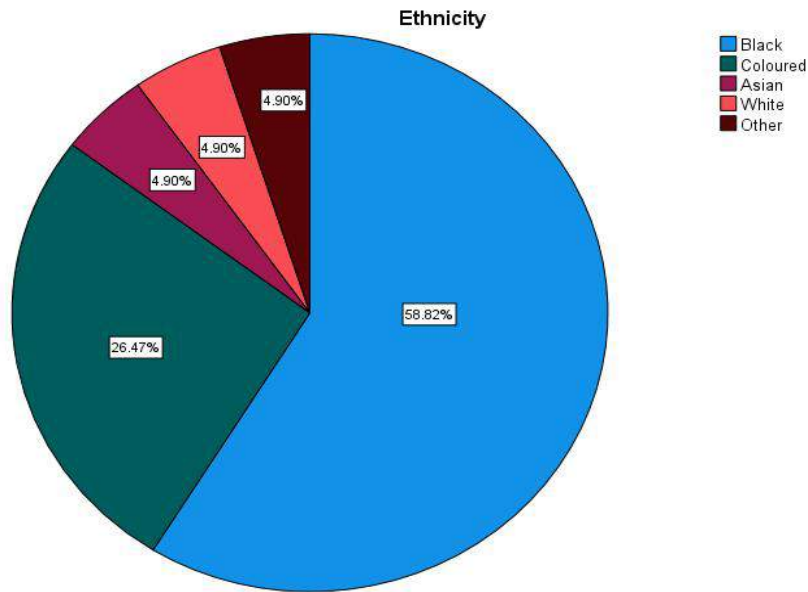


Figure 4: Ethnicity (author's own compilation)

The most significant portion of the sample, 59.80 percent (n=61), had 3-5 years' work experience; followed by 12.75 percent (n=13) who had 6-8 years' work experience; followed by 6.86 percent (n=7) who had 16-18 years' work experience; followed by 6.86 percent (n=7) who had 26+ years; followed by 4.90 percent (n=5) who had worked for 22-25 years; followed by 3.92 percent (n=4) who had worked for 9-15 years; followed by 3.92 percent (n=4) who had worked for 19-21 years. The remainder of the respondents, 0.98 percent (n=1), had 9-11 years of working experience.

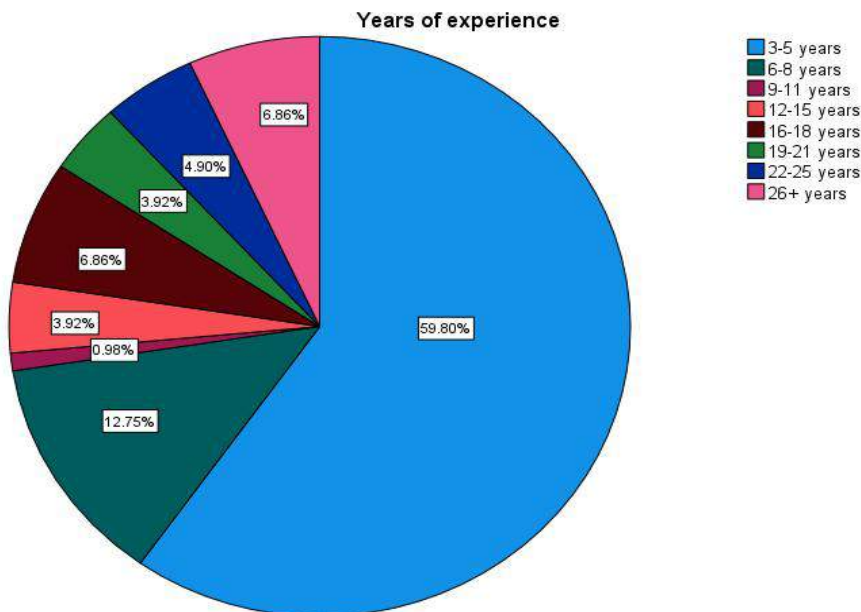


Figure 5: Years of experience (author's own compilation)

The most significant portion of the sample had Matric or Grade-12, 35.29 percent (n=36); followed by those who possessed a 3-year degree, 30.39 percent (n=31); followed by those who possessed a 4-year (Bachelor's) degree, 23.53 percent (n=24); followed by those who had a Diploma, 4.90 percent (n=5); followed by those who had a master's degree, 4.90 percent (n=5). The remainder of the respondents, 0.98 percent (n=1), possessed a Doctoral degree.

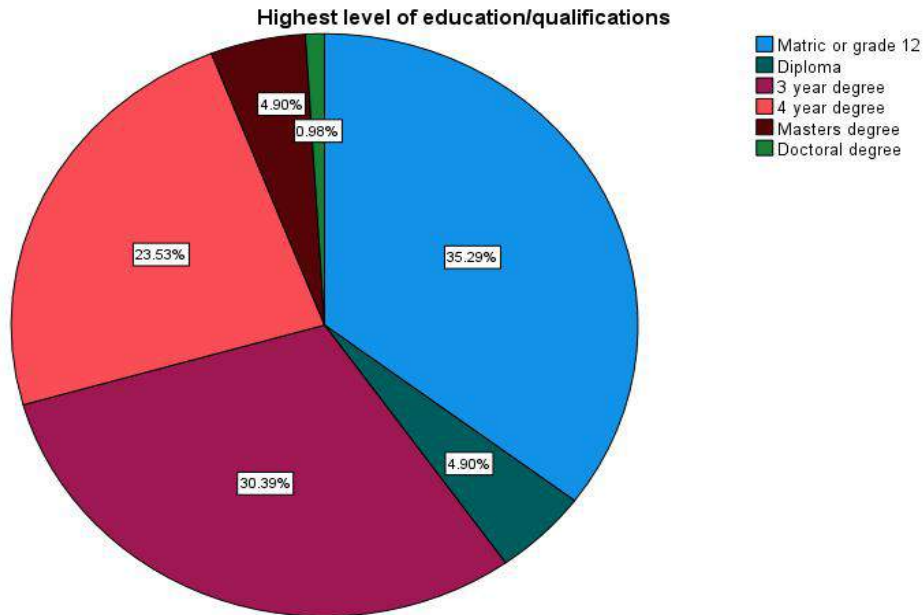


Figure 6: Highest level of education/qualification (author's own compilation)

The most significant portion of the sample worked in the Banking sector, 30.39 percent (n=31); followed by 24.51 percent (n=25) who worked in “other” fields; followed by those who worked in Marketing/Communications, 22.55 percent (n=23); followed by those who worked in IT, 12.75 percent (n=13). The remainder of the respondents, 9.80 percent (n=10), worked in education.

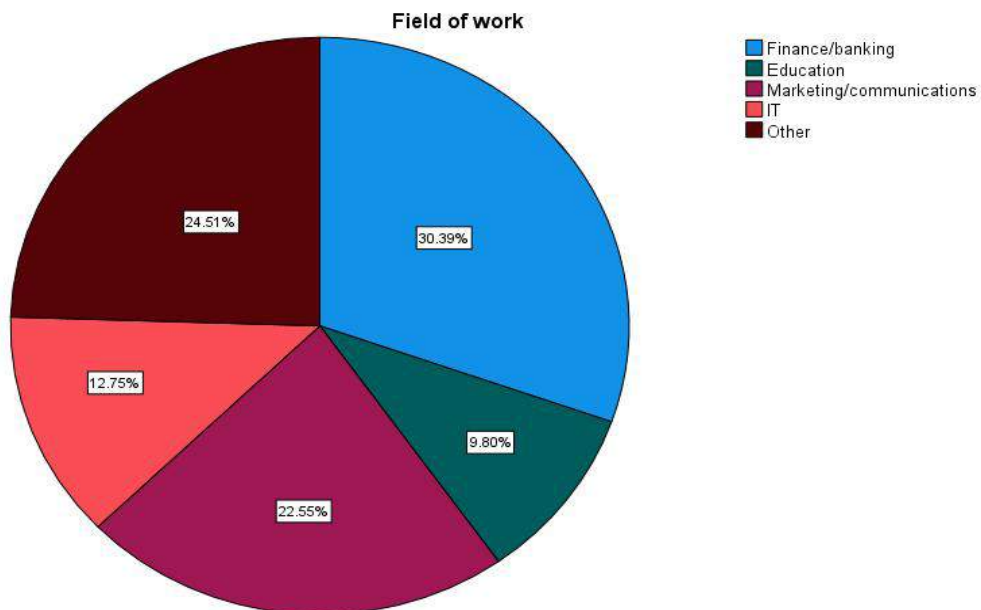


Figure 7: Field of Work (author's own compilation)

7.2. Descriptive Statistics

Tables 1, 2, 3, 4, and 5 account for the descriptive statistics, the means, and standard deviations of the constructs investigated. Mean values were computed as the measures of central tendency for this study. All the tables presented below disclose the mean values for all the objects ranging between three and four, indicating that most respondents had either an unbiased (neutral) standpoint or agreed with the information provided. Standard deviation values were processed to measure the difference in reactions on each variable. Hair et al. (2003) posited that the connection between the mean and the standard deviation is that a slight projected standard deviation (SD) implies that responses were

steady and that the response allocations lay close to the mean. Conversely, a substantial standard deviation indicates fluctuating responses, constructing the response dissemination values away from the mean (Drost, 2011). Moreover, the standard deviation value “should be less than one, but it is recommended to at least include a value of less than 2 to ensure that there is no issue of outliers” (Drost, 2011p. 87).

Table 1: Working Alone

	N	Minimum	Maximum	Mean	Std. Deviation
WA1	102	1	5	3.40	1.145
WA2	102	1	5	3.73	1.136
WA3	102	1	5	3.55	1.105
WA4	102	1	5	3.49	1.088
WA5	102	1	5	2.52	1.132
WA6	102	1	5	2.87	1.158

Source: Own compilation

"Working Alone" (WA), which constituted part 1 of section B of the questionnaire, had the highest mean score of 3.73 (Item WA2), and the lowest mean score was 2.52 (Item WA5), giving a range of 1.21. The lowest mean, 2.52 (Item WA5), indicated that respondents struggled to create/ keep up a social life outside of work, while results highlighted that the highest mean score was 3.73 (Item WA2). Most respondents admitted they could work in isolation without a manager or a supervisor's support. Table 1 reveals that the WA scale had the highest standard deviation value reported at 1.158 (Item WA6), and the lowest standard deviation value was 1.088 (Item WA4). This information indicates that the data points are clustered around the mean. The Standard Deviation values are below 2, indicating no presence of outliers.

Table 2: Keeping Work and Home Life Separate

	N	Minimum	Maximum	Mean	Std. Deviation
KWAHLS1	102	1	5	3.32	1.136
KWAHLS2	102	1	5	3.12	1.196
KWAHLS3	102	1	5	3.24	1.276
KWAHLS4	102	1	5	3.15	1.277
KWAHLS5	102	1	5	2.92	1.325
KWAHLS6	102	1	5	3.24	1.314

Source: Own compilation

This study gives descriptive statistics for the second part of Section B, "Keeping Work and Home Life Separate" (KWAHLS), in Table 2. As illustrated in Table 2, the highest mean score was 3.32 (Item KWAHLS1), while the lowest mean score was 2.92 (Item KWAHLS5), as considering the range value, this resulted in a complete range of 0.4. The lowest mean (Item KWAHLS5) from the statistic table indicated that some respondents could not separate regular work from overtime while working from home as asked in the questionnaire. While the highest mean (Item KWAHLS1) revealed that most respondents were able to keep work and home apart during their working hours. Table 2 demonstrates that the KWAHLS scale had the highest standard deviation value reported at 1.325 (KWAHLS5), and the lowest standard deviation value was 1.136 (KWAHLS1). This reveals that the data support the mean with no presence of outliers.

Table 3: Self-Motivation and Productivity

	N	Minimum	Maximum	Mean	Std. Deviation
SMAP1	102	1	5	3.32	.997
SMAP2	102	1	5	3.43	.907
SMAP3	102	1	5	3.47	1.141
SMAP4	102	1	5	2.42	1.156
SMAP5	102	1	5	3.34	1.239
SMAP6	102	1	5	3.67	1.056

Source: Own compilation

“Self-Motivation and Productivity” (SMAP) indicated the lowest mean score of 2.42 (Item SMAP4) while the highest mean score was 3.67 (Item SMAP6), resulting in a range of 1.25. The lowest mean of 2.42 (Item SMAP4) from the table indicated that few respondents struggled to perform their tasks when working from home than when working from the office, while results highlighted the fact that the highest mean which its score was 3.67 (Item SMAP6) is in support of the respondents to admit that they are still able to pull weight in a team when working from home as when working from the physical office. Additionally, Table 3 reveals that the SMAP scale had the highest standard deviation value reported at 1.239 (Item SMAP5), and the lowest standard deviation value was .907 (Item SMAP1). This information suggests that the data points are clustered around the mean, and there is no presence of outliers. This means that individuals easily motivate themselves and maintain work productivity.

Table 4: Work-Related Travel

	N	Minimum	Maximum	Mean	Std. Deviation
WRT1	102	1	5	3.89	1.134
WRT2	102	1	5	3.66	1.139
WRT3	102	1	5	3.93	1.074
WRT4	102	1	5	3.51	1.217

Source: Own compilation

The "Work-Related Travel" (WRT) scale had the highest mean score of 3.93 (Item WRT3), and the lowest mean score was 3.51 (Item WRT4), giving 0.42 in the entire range. Consequently, the lowest mean from the table Item WRT4 (3.51) indicated that despite respondents not having to travel to and from work, some still struggle to have a good start and finish work time. In contrast, the highest mean Item WRT3 (3.93) reveals that most respondents view this shift as beneficial in some cases because they believe it has significantly impacted household expenditure due to less traveling. Moreover, Table 4 also illustrated the different standard deviation WRT scale values, including the highest standard deviation value reported at 1.217 (Item WRT4) with the lowest standard deviation value of 1.074 (Item WRT3). The results indicated that the data points or the SD average distance to the mean are close as they are all below 2; hence, there is no presence of outliers.

7.3. Reliability

Reliability was measured by Cronbach’s Alpha, where the values are expected to reach 0.6 to confirm reliability (Pallant, 2016). The results presented in table 5 show these reliability scores. The perceived influence of remote work in the table can be reliable because the variables are all above 0.6 and closely related as a group, which shows consistency.

Table 5: Cronbach's Alpha Reliability Scores

Variable	Cronbach's Alpha
WA	.743
KWAHLS	.822
SMAP	.834
WRT	.617

Source: Own compilation

7.4. Discussion

This research aimed to investigate the perceived influence of remote working on employee productivity in South Africa. Different literature indicated that transitioning from traditional to remote work was difficult for many employees. Employees prefer to work in traditional offices because they can interact with their colleagues and make friends, and it is easier for them to ask for assistance face-to-face (Stat International Writing Staff, 2020).

Higher mean scores from the study indicated that most respondents could work in isolation without support from a manager or supervisor. Respondents could also keep work and home apart during their working hours. Most respondents indicated that they still must pull their weight in a team when working from home and the physical office. The highest mean scores revealed that most respondents viewed a shift from traditional work as beneficial in some cases because it significantly impacted household expenditure due to less travelling. This is similarly revealed in the study by (Singer-Velush et al., 2020). Lastly, the highest mean scores showed that respondents knew precisely what was expected of them even when working from home.

On the other hand, literature revealed that most employees do not prefer to work remotely because they become unproductive, they have separation anxiety from being far from their colleagues and cannot separate work and personal lives because of difficulty to organise work (Lal et al., 2021; Li et al., 2022; Nguyen, 2021). The results from the study indicated that the lowest mean scores in different sections of the questionnaire revealed that respondents struggle to create or keep a social life outside of work. The low mean scores showed that some respondents struggled to outperform their tasks when working from home rather than when working from the office. Even though respondents did not have to travel to and from the office, which saves money, some indicated that they struggled to have a good start and finish work time.

Respondents indicated that they could still stay productive and collaborate well with their team members while working remotely, although this meant putting in additional hours and effort, which would not have been necessary if they were working from the office with easier access to information and their colleagues. These results were supported by various studies, which posited that remote working employees often feel the increased burden of proving that they are working and not just lounging around at home (Brough et al., 2020; van der Lippe & Lippényi, 2020). This often leads to good productivity (and sometimes over-productivity), although possibly at the risk of employees burning out in the long run (Gigauri, 2020).

8. Managerial Implications

Based on the above discussion, the literature, and results, it is evident that organisations in South Africa still need to properly align their policies for remote working employees and find ways to maintain and enhance their productivity. It is recommended that South African organisations find ways to reconstruct or restructure their business operations. It is recommended that HR professionals develop policies aligned with remote work to provide and allocate employees with jobs with additional or entirely changed roles and responsibilities as remote work deals with the online environment. On the other hand, future research should be conducted on HR practitioners, focusing on the challenges associated with aligning remote work with company policies and how measurements are aligned with employee performance contracts. This paper further recommends that future researchers consult a larger sample, cutting across various sectors in the South African context and

possibly mainly focusing on baby boomers' views of remote work, as they are arguably faced with more challenges when working remotely due to the technological aspect of such a work setup.

9. Conclusion

In the global economy, technological advancements have a significant impact on the change management system and the operations of businesses, and the outbreak of the Covid-19 pandemic further exacerbated this effect. Remote work had previously been practiced, and it is likely unavoidable in the future considering the world's trajectory due to technology; even though people are resistant to acknowledging its effect, less can be achieved if we still rely on old fashion ways of conducting business. Consequently, organisations and managers in South Africa must adopt appropriate strategies for managing remote working employees and team performance in the most effective way possible to ensure and maintain optimal productivity.

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Analysing the Factors of Employees to Accept Change: A Case Study

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Keywords

Business Management, change, executive human management, management
Process readiness to change, employees, management, resource operational management

Abstract

Employees are seldom willing to accept change in the workplace. In an ongoing changing world with regular technological development, employees struggle to adapt with constant change. Resistance can be due to the lack of communication, technical skills or organisational maturity. The service industry continually goes through work cycles and needs to change regularly to keep up with technology, customer demands and continuous growth. Businesses, therefore, need to function optimally in order to gain maximum profit and remain viable. To do so, many companies implement new processes to improve the way they operate.

This research will implement a quantitative research design to evaluate the impact, climate and readiness to change of a unit within an institution. A single stage sampling procedure was used as the researchers had access to the names in the population and the people could be sampled directly. The findings indicate that cognitive readiness leads to emotional readiness because people believe that they can handle change and the challenges that it provides. The outcome will be that workshops explaining the importance of process management, which provide training about the new processes, can still make a difference in the way the employees perceive the change.

1. Introduction

Every business goes through phases or life cycles and needs to change regularly to keep up with technology, customer demands and continuous growth. Businesses, therefore, need to function optimally in order to gain maximum profit and remain viable. To do so, many companies implement new processes to improve the way they operate (Rizoto-Vidala-Pesoa & Kuzņecova, 2017).

The service industry continually goes through work cycles and needs to change regularly to keep up with technology, customer demands and continuous growth. Businesses, therefore, need to function optimally in order to gain maximum profit and remain viable. To do so, many companies implement new processes to improve the way they operate (Rizoto-Vidala-Pesoa & Kuzņecova, 2017).

In this fast-changing world, especially with regular technological developments, organisations need to modify themselves constantly as the success of an organisation largely depends on its ability to adapt and cope with the constant change (Hashem, 2019). Business processes must stay ahead of recent development to keep up with customer demands regarding communication and production. Unfortunately, these changes to processes are often met with resistance from employees. This resistance can be due to the lack of communication, technical skills or organisational maturity. It is therefore an emotional element and a critical factor in the success of process implementation.

As such, the importance of change is recognized and due to the many problems encountered within this section of work, this study was motivated to provide directives to specific factors to instigate positive change.

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2. Problem statement

Businesses are of the view that the regular evaluation and redesigning of processes will lead to the improvement of the organisation's performance, especially in this rapidly changing business environment (Hammer, 2007). Employees, on the other hand, may resist change. This article will focus on factors that will influence the attitudes of workers in an environment where constant change already occurred and where it is expected from workers to change the structure and organigramme of the work place, once again.

3. Aims

The aims are as follow:

1. To establish the process of change;
2. To identify the climate for successful change; in a service organization. and
3. To determine the readiness of employees to change within this specific sector and environment..

4. Limitations and assumptions of the study

This research is a case study of a unit consisting of 35 employees within a higher education institution. The limitation is that this type of research studies with small sample sizes run the risk of not gathering enough data to support expectations.

5. Applicable literature review in the service sector

5.1 Business Process Management (BPM)

Generally, the public considers BPM as similar to Information Technology (IT). IT, however, is just one aspect of BPM. The latter refers to a consolidation of disciplines and is roughly defined as “a process-centred approach that leads to substantial improvements in both performance and compliance of a system” (Vom Brocke & Rosemann, 2015:ix). Vom Brocke and Rosemann. (2015) believe that although the service sector has understood the importance of processes for a long time, these processes were only recognised in the service industry more recently.

Rummler and Ramias (in Vom Brocke & Rosemann, 2015), identified six core elements that are critical to the success of BPM. These elements are:

- **Strategic alignment**; defined as a tight link between the priorities and processes of a company.
- Governance; there should be a high level of transparency and accountability regarding the responsibilities of each level of the processes.
- In the context of BPM, methods are all the tools that are used throughout the entire process.
- The IT component of any modern business process is of great value, but it can be overwhelming, especially during this rapid development phase where new programs are developed daily.
- Any process needs people that are willing and able to manage and continually improve it.
- The importance of culture was recognised recently. Specific values must be present for BPM to succeed. This can be referred to as the **BPM-supportive business culture**.

Several authors investigated the development of certain capabilities structured around the core elements of BPM as mentioned above. These capabilities are structured in a capability framework as seen in Figure 1, which was proposed by De Bruin and Rosemann (2007). It is essential in creating process orientation in organisations (Kerpedzhiev *et al.*, 2020).

Strategic Alignment	Governance	Methods	Information Technology	People	Culture
Process Improvement Planning	Process Management Decision-Making	Process Design & Modeling	Process Design & Modeling	Process Skills & Expertise	Responsiveness to Process Change
Strategy & Process Capability Linkage	Process Roles and Responsibilities	Process Implementation & Execution	Process Implementation & Execution	Process Management Knowledge	Process Values & Beliefs
Enterprise Process Architecture	Process Metrics & Performance Linkage	Process Monitoring & Control	Process Monitoring & Control	Process Education	Process Attitudes & Behaviors
Process Measures	Process-Related Standards	Process Improvement & Innovation	Process Improvement & Innovation	Process Collaboration	Leadership Attention to Process
Process Customer & Stakeholders	Process Management Compliance	Process Program & Project Management	Process Program & Project Management	Process Management Leaders	Process Management Social Networks

Figure 1: The BPM capability framework (De Bruin & Rosemann, 2007)

5.2 BPM-supportive business culture

Literature emphasises the importance and effectiveness of BPM. In the end, it does not matter what techniques organisations use to implement or improve these processes, they will not succeed without the cooperation of their employees (Dinçer *et al.*, 2018).

Where social culture evaluates the norms and acceptability of behaviours, business or organisational culture evaluates and regulates the acceptability of behaviours within the organisation. The term ‘organisational culture’ refers to general ideas, traditions and rules that regulate the relationship between employees. A positive organisational culture is what brings employees together as a team and it is the reason why they support each other, whereas a favourable business culture affects the operations of an organisation positively and plays a big part in its success. Business cultures combine the organisation’s values with the employees’ personal values (Dinçer *et al.*, 2018).

Organisational culture is defined by Edgar Schein in his book *Organisational Culture and Leadership* (Schein, 2010) (cited by Wu *et al.*, 2019) as an invisible yet powerful ‘social force’ that drives the direction of the organisation. Three main types of organisational cultures have been identified in the past and are used widely in the analyses of organisational cultures. These are Innovative Organisational Culture (IOC), Bureaucratic Organisational Culture (BOC) and Trust and Supportive Organisational Culture (TOC).

With IOC, the emphasis is on creativity and opportunities which encourage employees to investigate new ways to do their work (Hogan & Coote, 2014). BOC is more hierarchical, with clear responsibilities; it focuses more on structure, rules and regulations. This type of culture involves centralisation and consistency, predictability and efficiency (Jie *et al.*, 2017). TOC focuses on teamwork, support and building trusting relationships with employees within the organisational setting (Ismail *et al.*, 2020).

Summarily, a BPM-supportive business culture is an organisational culture which supports and embraces the achievement of BPM (Schmiedel *et al.*, 2019). A study conducted by Schmiedel *et al.* (2019) found that a BPM culture, together with the method of implementation of a new business process, enhances the performance of the process. These authors identify several values that are important in a BPM culture, as can be seen in Table 1.

Table 1: Values specifying the BPM culture concept (Schmiedel et al., 2019)

Value	Customer orientation	Excellence	Responsibility	Teamwork
Sub-dimensions	The proactive and responsive attitude toward the needs of process output recipients; external customer orientation; and internal customer orientation	The orientation towards continuous improvement and innovation to achieve superior process performance; continuous process improvement; and process innovation	The commitment to process objectives and the accountability for process decisions; accountability for process objectives; and commitment to process objectives.	The positive attitude toward cross-functional collaboration; formal cross-functional teamwork; and informal cross-functional teamwork.

5.3 Process maturity

Process maturity entails the constant and systematic improvement of business processes and skills and is measured by the extent of the definition, measurement, management, control and effectiveness of the processes (Kucińska-Landwójtowicz, 2019). Hammer’s 2007 article *The Process Audit* (as cited by Vom Brocke & Rosemann, 2015), identified two groups of characteristics needed for business processes to perform well and to keep performing well. He referred to these groups as *process enablers* and *enterprise capabilities*. These groups create a framework that Hammer uses in his Process and Enterprise Maturity Model (PEMM). Hammer created this framework as an evaluation tool that any organisation can use to evaluate the maturity of their process as well as the receptiveness from the organisation.

5.4 Climate of change

The most significant purpose of all the change management models is inherently the same, namely, to create an organisational climate or culture where change is welcomed and embraced. Organisational climate or culture, refers to the perceptions and norms of the work environment and focuses mainly on the relationship between the organisation and its employees. The organisational climate has a significant influence on the motivation and job satisfaction of employees and therefore also influences the efficiency of the employees. When an organisation has a strong BPM-supportive culture, the climate of change is present, and change is welcomed and supported. Employees will have an “openness to change” and will be active participants of the change. Yue *et al.* (2019:2) regard openness to change as a precursor to readiness to change.

5.5 The role of leadership

A vital component in organisational change is leadership. With the perceived risks associated with change, employees are more reluctant to change unless they feel secure. Therefore, trust among employees and their management is vital when it comes to change readiness (Matthysen & Harris, 2018). Successful leaders understand that change is not only necessary but vital for organisations to be sustainable and thrive. In their book, *Making sense of change management*, Cameron and Green (2019) identified three dimensions of leadership that are important in change management. Leaders naturally concentrate on outcomes and results, however, they need to realise that underlying emotions, authority and power play an equally important role in change management.

5.6 Readiness for change

The term ‘readiness to change’ can be defined as the employees’ willingness, ability and preparedness to change. When readiness for change is present in the employees of an organisation, they will embrace change and resistance to change is reduced significantly. In their article *Cognitive beliefs and positive emotions about change: Relationships with employee change readiness and change-supportive behaviours*, Rafferty and Minbashian (2019) focussed specifically on “change recipients’ change attitudes” and “change readiness”. They identified change readiness as a mix of change beliefs,

positive attitudes towards change and behaviours that are supportive of change. They further identified five cognitive beliefs as an essential belief preceding the readiness to change. These five beliefs are:

- The **discrepancy belief** refers to a belief that change is needed to address a deficiency in the organisation.
- The **belief of appropriateness** is the belief that the specific change is the most appropriate step in rectifying an issue in the organisation.
- The **belief of self-efficacy** refers to the employee's belief that he is capable of implementing the change.
- The **belief of principal support** refers to the perceived support that the employees will receive from the leaders in the organisation.
- The **valence belief** can be defined as a belief that the change will have benefits, extrinsic as well as intrinsic.

It is evident that when change management is done correctly (as seen in the previously discussed models of change), these beliefs are all addressed during the different phases or stages of change management. Therefore, it is safe to assume that when an organisation has a BPM-supportive culture and change management is correctly applied, the stage of readiness to change will be reached much easier and the possibility of the successful implementation of change is much higher.

Emotional readiness to change is often also referred to as effective readiness and relates to the adaptability of employees. It implies that the employees will have a positive reaction to the implementation of change.

Cognitive readiness is defined by Fletcher and Wind (2014:27) as “the mental preparation (including skills, knowledge, abilities, motivations and personal disposition) an individual need to establish and sustain competent performance.” Cognitive readiness originated in the Department of Defence, when the department queried how to prepare soldiers to ensure that, while they were dealing with rapid change, they would take the best possible decision on the battlefield (Belack *et al.*, 2019). Cognitive readiness is associated with change efficacy or the perception of employees of certain capabilities, such as resource availability, task demands and outcomes of the change.

Intentional readiness for change refers to the effort that employees are willing to invest in the process of change (Bogan, 2017). Employees often realise that change is necessary and are willing to invest in it but due to other factors present in the organisation, they do not have confidence in the change process. This will negatively influence their readiness to change.

Using a change model when implementing change will therefore assist the organisation to fulfil the requirements necessary to ensure that employees are ready for change. Any one or a combination of the models examined in this section would thus be beneficial to the HEI unit currently under study.

5.7 Organisational change

Lewis and Sahay (2019:29) define organisational change as “any alteration or modification of organisational structures or processes” (Lewis & Sahay, 2019:29). The essence of Business Process Management (BPM) is to embrace and accept constant change in processes for the sake of the growth and prosperity within an organisation.

Before looking at the range of models to organisational change, it is valuable to consider the four key approaches to individual change. These approaches are the behavioural approach, the cognitive approach, the psychodynamic approach and the humanistic psychology approach:

5.7.1 The behavioural approach

The behavioural approach implies that the behaviours of others can be changed through reward and punishment. This approach supports the theory developed in 1957, McGregor's Theory X, which

assumes people are self-centred and will resist change unless they are persuaded by being rewarded or punished (Grigorov, 2020).

5.7.2 The cognitive approach

The cognitive approach is based on the assumption that a person's way of thinking is the main reason for their emotions and problems. This is based on self-conditioning and positive reframing to achieve results and focusses more on building positive attitudes and outcomes (Corr, 2020).

5.7.3 The psychodynamic approach

The psychodynamic approach focuses on the psychological process that people go through during change. Kubler-Ross identified five stages that people go through in her publication *On Death and Dying* in 1969 (Corr, 2020). These stages are denial (where people do not want to accept that there once again will be change as was the case with this service sector), anger (where people needed to get use to a new way of operating and change), bargaining (workers wanted to find a way not to change once again as the whole process is very stressful), depression (there is always the fear that people may lose their jobs and constant change within this sector leads to depression in some instances) and acceptance (eventually, workers "give-up" and they know they need to accept the changing environment. This approach will assist organisations in understanding the reactions of their employees during the process of change.

5.7.4 The humanistic psychology

The humanistic psychology approach focuses on and believes in healthy development and growth to achieve optimal potential. This approach follows the same beliefs as Maslow's hierarchy of needs, where the basic needs are the first to be met and the need for self-actualisation or the desire to succeed over and above basic survival, are at the top of the pyramid.

5.8 Change management models

There is a wide range of models and approaches to organisational change; many of which relate to specific metaphors. This paper will focus on Lewin's three-step model, Kotter's eight-step model and Bullock and Batten's phases of planned change.

5.8.1 Lewin's change management model

In as early as the 1940s, Lewin introduced the three-step model of change. These three steps consist of unfreeze, move and refreeze (Manzano, 2020). During the unfreezing stage, the motivation for change is created, bringing with it the psychological safety that enables employees to overcome anxiety about learning new skills. According to Manzano (2020), the second stage, 'move', is the most difficult stage. This is the stage that has the greatest impact on the employees, as it is also when the implementation of the change starts and where solutions are found in trial-and-error learning. During the refreezing stage, the new concepts are internalised. This model further suggests that the perception that change is necessary, in other words, change readiness, needs to be present before the change can be initiated.

Lewin's model is based on the idea of an organisation as an organism. The force field analysis was also introduced by Lewin. Managers should also use this form of analysis during the 'unfreeze' stage of Lewin's model, for the planning session. The implementation happens during the 'move' stage and the 'refreeze' stage is used as a 'post-implementation' review. Lewin's model can be time-consuming but is ideal for large scale changes in organisations.

5.8.2 Kotter's theory

In 1995, Kotter analysed 100 different organisations going through change (Kotter, 1995). It was during this analysis that he compiled eight crucial steps to ensuring that transformational efforts do not fail. These eight steps are:

1. **Establish a sense of urgency:** When a sense of urgency is created to initiate change, it will provide the energy necessary to get everybody on board and motivated. This can start with a

small group of employees who will in turn discuss the change with others and encourage each other.

2. **Form a powerful guiding coalition:** A strong core team is needed, creating cohesion, consisting of people from various levels of experience and skillsets that can reach out to every employee in the organisation.
3. **Create a vision:** The vision needs to be simple, short and definable. A clear description of the values that the change will achieve is necessary in simple enough language that everyone understands what is meant.
4. **Communicate the vision:** Regular meetings are suggested where management should not only share the vision but where feedback and discussions around the change are encouraged. This will not only encourage the employees but will also make them part of the change and may produce another angle of looking at the change to be initiated.
5. **Empower others to act on the vision:** One of the barriers to change is the lack of skills necessary when implementing change in processes. It is vital to develop the necessary skills needed for the change to be effective before implementing change.
6. **Plan for and create short-term wins:** When the initial motivation for change wears off, it is often difficult for employees to persist with the change if they do not see immediate results. Management must acknowledge and celebrate milestones to keep employees motivated.
7. **Consolidate improvements and produce more change:** During this stage, management takes stock of the change already initiated, evaluates the change and outcomes thereof and suggests improvements where necessary.
8. **Institutionalise new approaches:** New processes need to be documented in the organisation's quality manual and must become part of the culture of the organisation. A simple way to do this is to recognise the contributions of the original team responsible for the change process and to encourage feedback on the outcomes of the change.

The essence of the success of this model is not to lose traction after stage five. Thereafter, everyone involved should follow-through with as much enthusiasm as possible right to the end.

5.8.3 Bullock and Batten's phases of planned change

Bullock and Batten's model is based on a project management approach and implies that change is planned in four identified stages (Bullock & Batten, 1985). Their model is similar to Lewin's three-step model, with the difference in the 'unfreezing' stage of Lewin split into two phases, namely exploration and planning. The four stages of Bullock and Batten's model are:

1. **Exploration:** During this stage, the need for change is explored and resources are acquired to make the change.
2. **Planning:** During the planning stage, key decision-makers and technical experts are involved to make a diagnosis and a change plan is formulated.
3. **Action:** The change plan is implemented and constant feedback is given which will indicate if re-planning is necessary.
4. **Integration:** During integration, the change is aligned with other areas in the organisation and is formalised in the organisation's policies.

This model simplifies the change process by isolating the area in the organisation where the change will take place.

6. The research design

This section presents the research design and methodology used to collect data. It will also describe how the data was analysed to achieve the objectives and aim of this study. It should be noted that all ethical protocols were strictly adhered to throughout the study.

For this study, the data is collected via a quantitative research approach as quantitative research studies variables with the primary role of testing hypotheses.

Although the research design has most of the qualities of a conclusive design (with structured questions, quantitative data analysis and a specific purpose), the small sample size may influence the accuracy of the results. The next sections will focus in more detail on the research design.

6.1 Population

The population studied was selected using the convenience procedure of data sampling, which implies the sampling of data from a readily available population. The population of this study consists of a select group of support personnel in the operations management segment of a unit within an HEI in South Africa. The HEI established this unit in order to support faculties with the coordination and administration of all non-formal academic programmes that are not listed on the University PQM as formal programmes. These programmes may include short courses, workshops and short learning programmes and are referred to as Continuous Education (CEd) offerings. This self-sustaining unit within the University reports to the Deputy Vice-Chancellor: Teaching and Learning (DVC: T-L).

The population of the participants in this study consists of a select group of 35 support personnel in the operations management segment of a unit within an HEI in South Africa. These personnel are based on three sites within the HEI. Of the 35 employees in this unit, 26 employees agreed to participate in this study.

6.2 Data collection

Data was gathered by the distribution of structured quantitative questionnaires with close-ended questions to the employees in the unit. A Likert-type scale was used to evaluate each answer. The questionnaire was developed by Bouckenooghe, Devos and Van den Broeck (2009), as an instrument to specifically measure the climate of change or internal context, the process of change and the readiness for change (Bouckenooghe et al., 2009).

In designing the questionnaire as a measuring instrument, the researchers followed a step-by-step procedure. These steps were recommended by Hinkin (1998), who specified the content dimensions of climate of change. Hinkin conducted three independent field studies to examine the reliability and validity of the scales and concluded with the 10 dimensions and 53 items in the self-report battery, namely the OCQ-C, P, R (Organisational Change Questionnaire-Climate of Change, Processes and Readiness). This psychometrically sound instrument measures three dimensions, namely 1) Process of change; 2) Climate of change and 3) Readiness for change.

The researchers tested the items and scales in the organisations just before and during the implementation of change. They suggested that this tool be administered in the same conditions of change, before and during change implementation. This makes the questionnaire ideal for the current unit under study, as it needs to implement the newly developed QMS.

A summary of the dimensions and questions of the questionnaire is displayed in Table 2.

Dimension	Sub-dimension	Item on survey
Process of change	Quality of change communication	Questions 3, 12, 22, 36, 47, 65, 76, 20
	Participation	Questions 5, 11, 25, 34, 35, 42, 50, 51, 71, 74, 77
	Attitude of top management	Questions 17, 66, 69
	Support by supervisors	Questions 101, 37, 38, 15, 31, 40, 60
Climate of change / Internal Context	Trust in leadership	Questions 19, 44, 58
	Politicking	Questions 8, 9, 30
	Cohesion	Questions 2, 14, 24, 48, 61
Readiness for change	Emotional readiness for change EMRE	Questions 4, 33, 75, 55, 73
	Cognitive readiness for change COGRE	Questions 41, 59, 62, 39, 56
	Intentional readiness for change INRE	Questions 18, 57, 67

6.3 The positioning structure

In this HEI, the Council for Teaching and Learning (CTL) is responsible for governance, while the University Management Committee (UMC) is responsible for executive management of the HEI. The DVC: T-L, a member of the UMC, is responsible for teaching and learning. CED forms part of Teaching-Learning and as such the unit reports to the DVC: T-L. The DVC: T-L is supported by the Continuing Education Advisory Committee, composed of the executive deans of all faculties, in the alignment of CED across faculties, campuses and delivery sites. The position of this unit within the organisational structure is indicated in Figure 3.

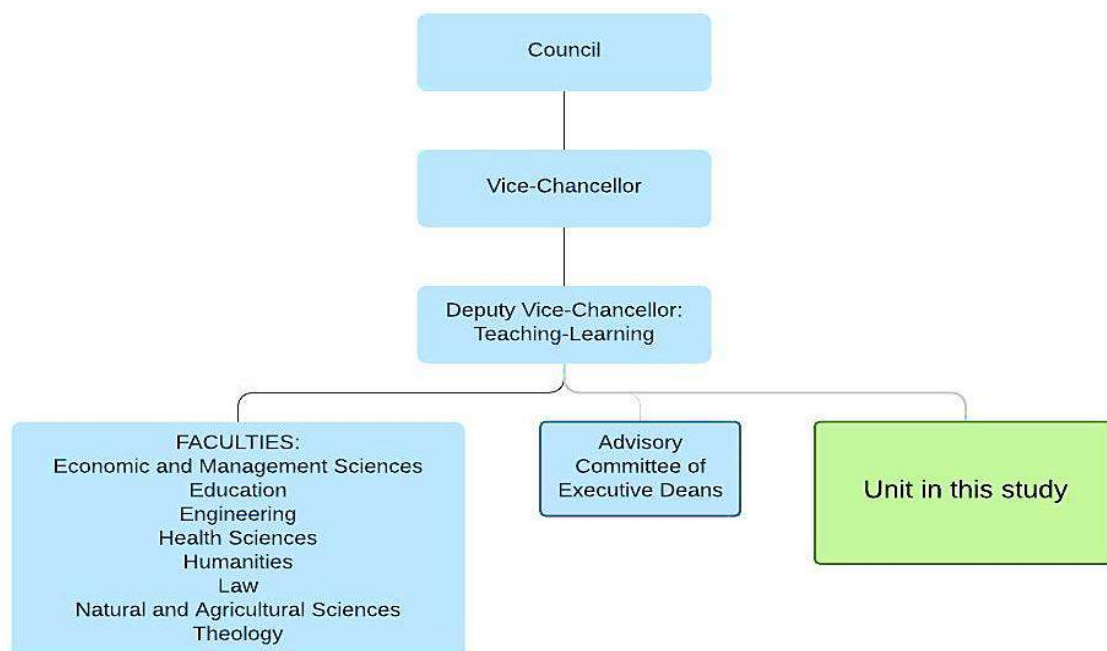


Figure 3: The position of the unit in the HEI

6.4 Data Analysis

Quantitative research transforms raw data into meaningful information which can be interpreted. The first step is data tabulation, where the responses (raw data) to the questionnaires were imported into an Excel spreadsheet and data cleaning was performed. Data cleaning is the process whereby the researcher removes any incorrect, duplicate or corrupted data. Coding was done by assigning values to the answers. The questions in the questionnaire were sorted according to the dimension which they

represent. The data were imported into SPSS and analysed to calculate the mean for each question. The mean refers to the average score when the sum of scores for each question is added and then divided by the number of participants. Once the data were analysed, patterns emerged and from these, the summaries in the next chapter were obtained.

6.5 Reliability and validity

Reliability occurs when the same answer is achieved multiple times when using the same instrument to measure something; the results are thus stable and consistent. Validity refers to the degree to which an instrument measures what it is intended to measure (Dudovskiy, 2018). Instruments used in the research therefore needed to adhere to reliability as well as validity.

In designing the questionnaire as a measuring instrument, the authors followed a step-by-step procedure. These steps were recommended by Hinkin (1998), who specified the content dimensions of climate of change. He developed items that would measure the domain as well as the extent of this measurement, which resulted in 63 items in 12 dimensions. In consultation with 10 experts, Hinkin conducted three independent field studies to examine the reliability and validity of the scales and concluded with the 10 dimensions and 53 items in the self-report battery, namely the OCQ-C, P, R (Organisational Change Questionnaire-Climate of Change, Processes and Readiness). This psychometrically sound instrument measures three dimensions, namely 1) Process of change; 2) Climate of change and 3) Readiness for change. Therefore, it can be concluded that the questionnaire adheres to the specifications needed to provide reliability and validity.

The authors of this questionnaire tested the items and scales in organisations just before and during the implementation of change. They suggested that this tool be administered in the same conditions of change, before and during change implementation. This makes the questionnaire ideal for the current unit under study, as it needs to implement the newly developed QMS.

When using a Likert-type scale in research questionnaires, the calculation of Cronbach's alpha coefficient is vital for internal consistency and reliability. Cronbach's alpha reliability coefficient ranges between 0 and 1, with greater internal consistency closer to 1.

The formula for Cronbach's alpha is $\alpha = \frac{rk}{[1+(k-1)r]}$ (Gliem & Gliem, 2003); where: k = the number of items considered and r = the mean of the inter-item.

Tables 4.4 to Table 4.7 display the Cronbach's alpha value for this study, as calculated using SPSS. When looking at the Cronbach's alpha in Table 4.4 for the whole questionnaire, the value of $\alpha=0.842$ implies that this questionnaire is reliable. If the Cronbach's alpha is calculated for the different dimensions that were measured separately, the dimensions of Process of change and Readiness for change still show reliability with $\alpha = 0.884$ and $\alpha = 0.817$, respectively. However, the dimension Climate of change shows a value of $\alpha = -0.36$. This value might be due to the small number of participants that were used in this study.

Table 2: Cronbach's alpha for questionnaire combined

Reliability Statistics			
Cronbach's alpha	Cronbach's alpha based on standardised items	N of items	
0.842	0.851	53	
Mean	Variance	Std. Deviation	N of Items
160.35	288.635	16.989	53

Table 3: Cronbach's alpha inter-item correlation: Process of change

Reliability Statistics			
Cronbach's alpha	Cronbach's alpha based on standardised items	N of items	
0.884	0.884	29	
	Mean	Minimum	Maximum
Inter-item correlations	0.2950	2.154	4.000

Table 4: Cronbach's alpha inter-item correlation: Climate of change

Reliability Statistics			
Cronbach's alpha ^a	Cronbach's alpha based on standardised items ^a	N of items	
-0.360	-0.302	11	
	Mean	Minimum	Maximum
Inter-item correlations	0.257	-0.242	0.733

Table 5: Cronbach's alpha inter-item correlation: Readiness for change

Reliability Statistics			
Cronbach's alpha	Cronbach's alpha based on standardised items	N of items	
0.817	0.818	13	
	Mean	Minimum	Maximum
Inter-item correlations	0.257	-0.242	0.733

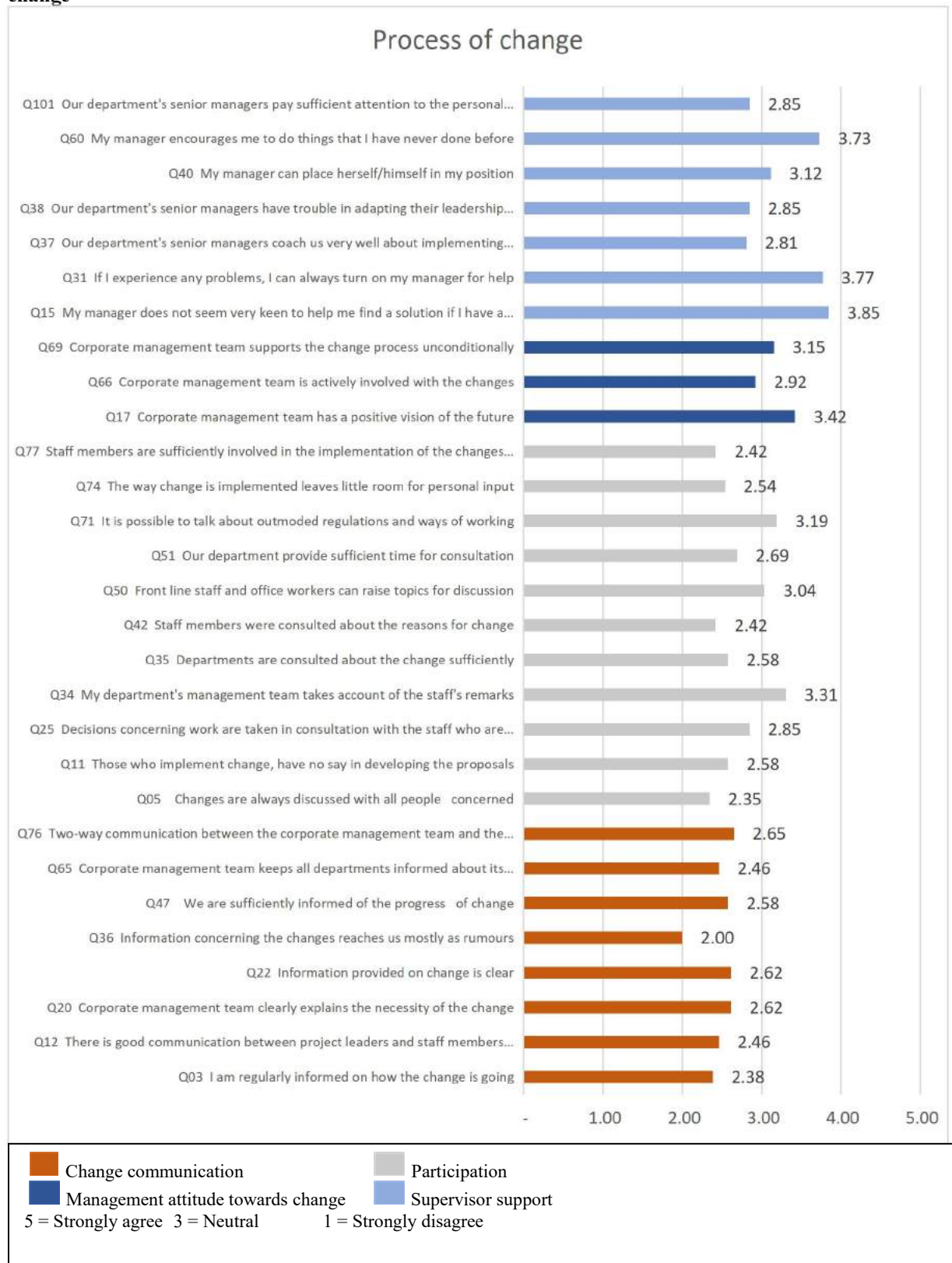
6.3.1 Analysis of process of change

The process of change was divided into four sub-dimensions, namely

1. Quality of change communication;
2. Participation;
3. Attitude of management towards change; and
4. Support provided by supervisors.

The mean values for these dimensions are displayed in Table 6 and the sub-dimensions are colour coded for convenience.

Table 6: Analysis for the dimension: Process of change



With an average score of 2.47 for change communication and 2.72 for participation, it was evident that the employees felt excluded in communication and did not feel part of the implementation of

change. According to Question 36, most employees felt that they heard about the change from a third party.

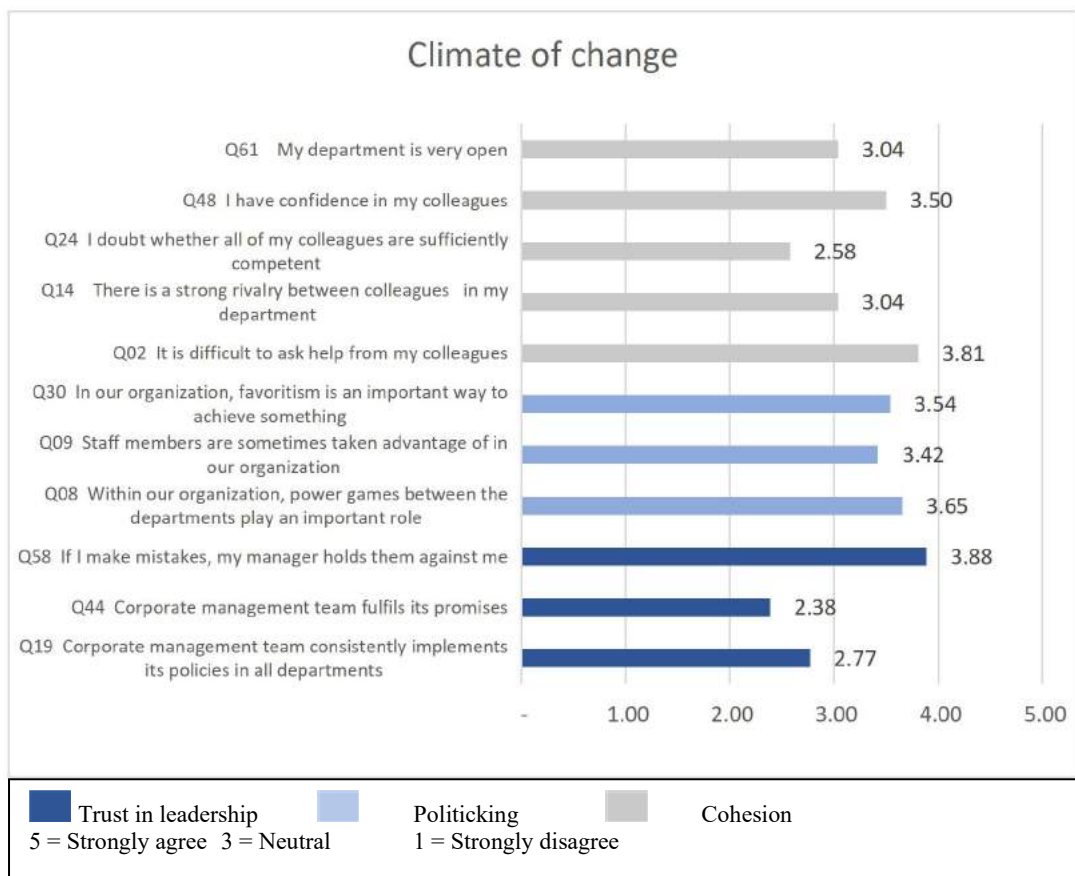
Management’s attitude towards change and supervisor support scored slightly higher. However, it was still a significantly low score and added to the presumption that the employees felt that change management was not properly handled in the unit.

The scores on Questions 34, 50, 71, 17, 69, 31, 60 showed that a significant number of employees felt that their line management or supervisors were open for discussion. This created the perception that the lack of communication stemmed largely from top management.

6.3.2 Analysis of climate of change

Table 7 below indicates the results for the dimension climate of change, which refers to the internal circumstances of the unit. The average score for trust in leadership was a concerning 3.01; Question 44 indicated that corporate management did not fulfil their promises. Although the score for politicking was still below 4 (average of 3.54), it should have raised red flags for management. The low average of cohesion indicated a lack of teamwork and team spirit in the unit.

Table 7: Analysis for the dimension: Climate of change

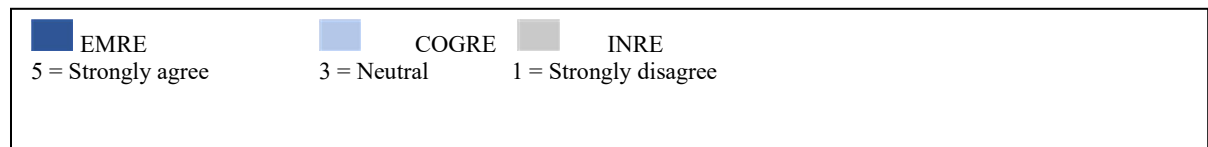
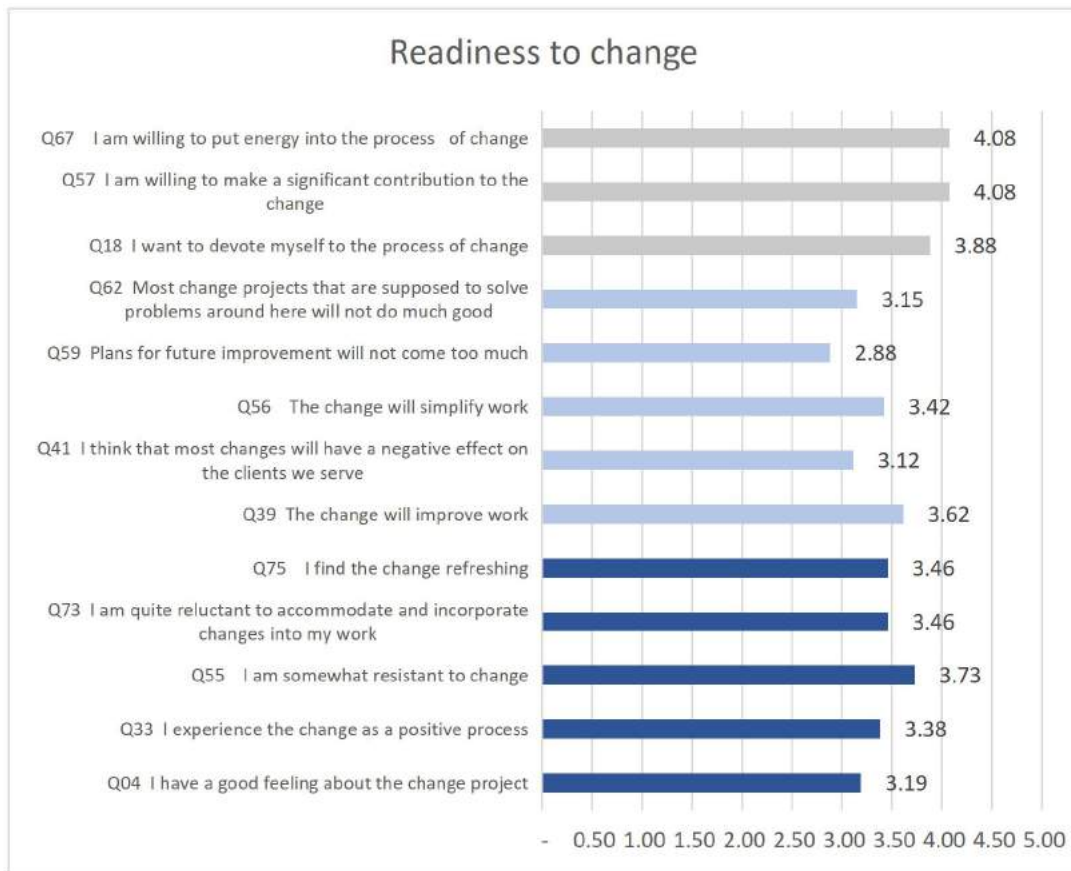


6.3.3 Analysis of readiness to change

Table 8 displays the average scores for the dimension readiness to change. Readiness to change is measured in three sub-dimensions, namely Emotional, Cognitive and Intentional readiness to change. Emotional readiness to change (EMRE) refers to the employees’ emotional reaction towards the implementation of change. With an average of 3.45 and the highest score of 3.73 for question Q55, there was a definite indication that the employees did experience some anxiety towards change. Cognitive readiness to change (COGRE) refers to the employees’ thoughts and beliefs about change. With an average of 3.24, it was evident that the employees did not feel very positive about change. Intentional readiness to change (INRE) refers to the employees’ willingness to put the effort into

change. INRE had the highest score of all the dimensions. With an average of 4.01, it was evident that the employees were willing to put effort into change.

Table 8: Analysis for the dimension: Readiness to change



7. Findings

Based on the analysis as stated in the previous sections, the following can be finding with regard to the process -, climate – and readiness to change were reached:

7.1 Process of change

The correct way to handle the process of change is to ensure readiness to change. Engaging employees in the process of change and regular communication regarding the change is vital to guarantee the participation of the employees. In the unit that was studied, change communication was not optimal and caused the employees to lose confidence and trust in management.

7.2 Climate of change

Creating cohesion in an organisation ensures that the employees work together as a team towards a common goal. When employees do not trust their leaders and the decisions made by them or communication provided by them, they do not feel loyal towards the organisation. In the unit that was studied, the lack of cohesion was evident in the research and has a negative influence on teamwork.

7.3 Readiness to change

Readiness to change is considered one of the core attributes in the successful implementation of change. Cognitive readiness leads to emotional readiness because people believe that they can handle change and the challenges that it provides.

When looking at the history of the unit, the lack of trust in management is no surprise. The lack of leadership contributes a great deal towards the lack of consistency and therefore the low score for the process of change is understandable. This is because employees who have trust in leadership feel secure and are more likely to accept change. The researchers found that the history of the unit created a culture where management was inconsistent and not trusted.

8. Recommendations

8.1 Process of change

It is crucial that employees should be engaged in the whole process. They should be included in discussions and communication. It is also vital that they are provided with a platform where their inputs can be discussed.

8.2 Climate of change

Teamwork is of utmost importance. It is also important that there is consistency and trust in leadership. Leadership should first be established prior to initiating change.

8.3 Readiness to change

It is important that the above two recommendations must first be established. After this is done, staff will feel more comfortable to venture on a changing process. Throughout this process, it is vital that there should be ongoing discussions and communication. It is also strongly recommended that the emotions and fears of staff should be considered.

9. Conclusion

Readiness to change is dependent on the process of change, as employees who are prepared for change will perceive change positively and will not resist change. This study can conclude that the employees in this unit were not ready for the implementation of change. Management needs to tread cautiously and provide the employees with a better understanding of the change that needs to be implemented. Workshops explaining the importance of process management, which provide training about the new processes, can still make a difference in the way the employees perceive the change.

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The Compliance of South African Public Companies With IFRS 13 in Relation to Biological Assets

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Keywords

Agriculture; biological assets; disclosure; fair value; IAS 41; IFRS 13; valuation

Abstract

The agricultural sector, historically a significant contributor to the South African economy has shrunk in recent years from representing more than 10% of the economy in the 1960s to below 2.5% today. The agricultural sector plays a significant stabilising role in emerging economies and is linked to overcoming poverty and enhancing food security. This study analyses the financial statements of nineteen South African agricultural companies listed on the Johannesburg Stock Exchange (JSE) in order to determine their compliance with the requirements of International Financial Reporting Standards (IFRS) 13, Fair Value Measurement. It was found that all companies but one stated that they had applied IFRS 13, and that all companies had applied level 3 inputs to the valuation of their biological assets. In terms of the valuation techniques used, the results indicate that there was significant consistency within the four categories of biological assets. The study concludes that, while agricultural companies are attempting to comply with the recognition, measurement and disclosure requirements of IFRS 13, it is debatable whether this compliance is adding value, particularly in an industry already faced with many challenges and financial constraints. This study is aligned with the findings of other researchers who have called for the International Accounting Standards Board to reconsider the implementation of fair value accounting in the agricultural sector.

1. Introduction

In South Africa, the agricultural sector has been a significant contributor to the economy historically but, in recent years, this sector has shrunk from representing more than 10% of the economy in the 1960s to below 2.5% in more recent times (Greyling, 2015). The sector's contribution to the economy can be evaluated according to five main themes, namely as a provider of food, an earner of foreign exchange, an employment provider, a source of capital, and as a buyer of goods or provider of inputs to the manufacturing sector (Agri SA, 2021). Even today, the agricultural sector uses more than 80% of available land and around 60% of available water. In developing countries, the agricultural sector plays a vital stabilising role: "In much of Sub-Saharan Africa, agriculture is a strong option for spurring growth, overcoming poverty, and enhancing food security." (World Bank, 2008).

A significant contributor to the decline in the agricultural sector in South Africa in recent years has been the deregulation of agricultural markets as well as the signing of international trade agreements. This has had a very negative impact on the agricultural sector, most notably the poultry industry. A recent report by the Bureau for Food and Agricultural Policy (2019) has indicated that an increase in imports has led many to question the competitiveness and sustainability of the domestic industry. In addition to a significant increase in chicken imports, South Africa also currently imports over 50% of its annual wheat consumption (Grain SA, 2017).

Food security is a goal that has been mentioned by President Cyril Ramaphosa in every State of the Nation Address (SONA) since his election as president. In a speech in October 2020, he reiterated that "broadening access to agricultural land for commercial production and subsistence farming is a

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national priority” (news24, 2020). Since the declaration of Covid-19 as a global pandemic in March 2020, the South African Agricultural sector has benefitted from being classified as an essential service. While the economy as a whole declined by 7% during 2020, due significantly to lockdown restrictions in many sectors of the economy, the agricultural sector achieved an overall growth of 13,1% over this period. This despite the challenges experienced in the alcohol and tobacco sub-sectors, due to restrictions on sales and consumption of these products at various stages of the lockdown (Agri SA, 2021).

The World Wildlife Fund (WWF) (2010:4) describes agriculture as the foundation of a developing economy. As a developing economy, it is essential that South Africa maintains a healthy agricultural industry that contributes to the country's gross domestic product (GDP). In addition, an active agricultural sector also plays a significant role in relation to food security, social welfare, job creation and ecotourism.

International Accounting Standard (IAS) 41 Agriculture, issued by the International Accounting Standards Board (IASB), provides guidance on how to account for, present and disclose biological assets in financial reporting (IASB, 2001: IN1) and requires entities to measure biological assets at initial and subsequent recognition, and agricultural produce at point of harvest, at fair value less costs to sell. Cairns (2006) identifies IAS 41 as the first accounting standard issued by the International Accounting Standards Committee (IASC) that required the use of fair value accounting for the subsequent measurement of non-financial assets.

2. Problem Investigated

Like many of the existing accounting standards, IAS 41 offered users a number of different options for the fair value measurement of biological assets, which resulted in a lack of comparability between entities within the same agricultural sub-sector (Baigrie & Coetsee, 2016). The IASB also reached the conclusion that the fair value guidance provided in the various accounting standards was not consistent and that inconsistencies in the measurement and disclosure of items measured at fair value contributed significantly to diversity in practice and impeded comparability of information contained in financial statements (IASB, 2011: BC5).

In an attempt to improve comparability and to increase standardisation of disclosure, the IASB issued International Financial Reporting Standard (IFRS) 13, Fair Value Measurement, in May 2011 as a single source of fair value measurement guidance. IFRS 13 is applicable in all situations where a specific International Accounting Standard or an International Financial Reporting Standard requires an entity to measure assets or liabilities at fair value (IASB, 2011: 5). The financial reporting standards issued by the IASB were developed over many years, which has resulted in these standards containing varying measurement and disclosure requirements, which in turn has led to a lack of comparability. (IASB, 2011: BC4).

IFRS 13 clarifies the definition of fair value and contains a fair value hierarchy consisting of three distinct levels. While level 1 gives highest priority to unadjusted, quoted market prices for identical assets, level 2 inputs reflect prices for similar assets observable from the market, and level 3 inputs are unobservable inputs, that is valuation techniques and inputs not directly observable in the market (IASB, 2011: 72-90). In addition, IFRS 13 provides guidance on the disclosure requirements for items measured at fair value, with increased disclosure required where items are categorised within levels two and three of the fair value hierarchy (IASB 2011: 91-93). The aim of this additional disclosure is to increase comparability where market-based prices are not used.

There has been considerable international research on financial reporting by entities engaged in agricultural activities in various part of the world (Argilés, Aliberch. & Blandon, 2012; Argilés, Blandon & Monllau, 2011; Argilés & Solf, 2001; Baigrie & Coetsee, 2016; Cristea, 2017; Dowling & Godfrey, 2001; Elad, 2004; Elad & Herbohn, 2011; Grege-Staltmane, 2010; He, Wright & Evans, 2018; Herbohn, 2006; Herbohn & Herbohn, 2006; Perry, 2008 & Waine, 2009), but, since the

introduction of IFRS 13 in January 2011, there has not been much research on how this standard impacts on entities with biological asset holdings.

3. Research Objectives

The aim of this study is therefore to determine the extent to which South African companies listed on the Johannesburg Stock Exchange (JSE) with significant holding of biological assets are complying with the recognition, measurement and disclosure requirements of IFRS 13. The financial statements of companies listed on the JSE were scrutinised and nineteen companies were identified with biological assets in their statements of financial position. This study therefore includes all JSE-listed agricultural companies, that is, companies with biological assets in their financial statements. This study aimed to determine whether or not these companies were applying IFRS 13 to the valuation of their biological assets and, if so, the level at which their biological assets were classified. In addition, the valuation technique applied to the valuation of these biological assets and the extent of their compliance with the required IFRS 13 disclosures applicable to the level at which their biological assets were classified in terms of the IFRS 13 fair value hierarchy were also analysed.

IAS 41 identifies four discrete categories of biological assets, namely bearer plants, consumable plants, bearer livestock, and consumable livestock. A content analysis of the annual financial statements of the selected companies identified holdings of all four categories of biological assets across the different companies. The analysis of the companies' compliance with the recognition, measurement and disclosure requirements of IAS 41 was undertaken based on these four distinct categories.

This paper begins by looking at recent literature related to the reporting of fair value, particularly in relation to biological assets, and goes on to describe the research methodology used in more detail. The results of the research are then discussed, followed by a discussion of conclusions drawn from the research findings and the implications of these findings.

4. Contribution

This paper provides an analysis of South African listed companies' compliance with the recognition, disclosure and measurement requirements of IFRS 13 in relation to their holdings of biological assets which are required, in terms of IAS 41, to be measured at fair value. While other research has looked at the compliance of other South African companies with the requirements of IFRS 13 (Razak & Stainbank, 2018), no research has yet been done in relation to entities with material holdings of biological assets. The research took place after the implementation of IFRS 13 in January 2013 and before the amendments to IAS 41 came in to effect in January 2016. As such, in addition to providing a snapshot of the compliance of these companies over this period, it also provides foundational information with which future research may be compared.

5. Literature Review

Previous Accounting studies have focused on the compliance of entities holding biological assets with the disclosure requirement of IAS 41 in various countries. In South Africa, an article by Baigrie and Coetsee (2016) looked at the compliance of JSE-listed entities with the disclosure requirements of IAS 41. This study focusses on the compliance of companies holding biological assets with the valuation and disclosure requirements of IFRS 13.

IFRS 13 is applicable in all situations where a specific International Accounting Standard or an International Financial Reporting Standard requires an entity to measure assets or liabilities at fair value (IASB, 2011: 5). Among others, IFRS 13 is applicable to entities that are required to apply IAS 41, Agriculture, to the fair value measurement of their biological assets.

IAS 41 provides guidance on how to account for, present and disclose biological assets for the purpose of financial reporting (IASB, 2001: IN1). IAS 41 requires entities to measure biological assets at initial and subsequent recognition, and agricultural produce at point of harvest, at fair value less costs to sell. When IAS 41 was issued it contained guidance on how the fair value of biological

assets should be determined. IAS 41 suggests a number of different methods for the measurement of fair value while movements in the fair value are required to be accounted for in profit or loss. The fair value requirements contained in IFRS 13 have replaced those in IAS 41 for reporting periods beginning on or after 1 January 2013 (IASB, 2011: C1).

The IASB had a number of objectives in issuing IFRS 13. IFRS 13 was intended to provide preparers of financial statements with a single set of requirements for all fair value measurements in the hope of improving the comparability of financial statements. In addition, it aimed to provide preparers with a single definition of fair value applicable across all financial reporting standards as well as with fair value disclosure requirements intended to assist users to assess the valuation techniques and inputs used in the calculation of the fair values of assets and liabilities (IASB, 2011: BC6).

The revised Conceptual Framework for financial reporting (IASB, 2018: 1.2) states that the objective of financial reporting is to provide the users of an entity's annual financial statements with useful financial information about the entity, and identifies relevance and faithful representation as the two fundamental qualitative characteristics of useful financial information. In reviewing the literature around the fair value reporting of biological assets, four significant themes were identified, namely the relevance of financial information, the faithful representation of this information, the comparability of financial statements, and the standardisation of disclosure of biological assets in the financial statements.

5.1 Relevance of fair value reporting of biological assets

Financial information is relevant when it can be used to predict future outcomes and when it provides useful feedback to users about previous financial performances (IASB, 2018: 2.6-2.9). Relevant information is also determined by how material a particular piece of information is to those using it. Information is material, and therefore also relevant, if misstating or omitting this information will have an impact on the decisions that will be taken by users regarding the reporting entity (IASB, 2018: 2.11). Cristea (2017), in a discussion of the advantages and disadvantages of both fair value and historical-cost accounting of biological assets, concludes by saying that fair value is irrelevant, because it lacks verifiability, while historical cost is relevant because it is precise and cost computations are certain.

Argilés-Bosch, Miarons, García-Blandon, Benavente and Ravenda (2018), in their empirical analysis of the relevance of accounting information when biological assets are measured at fair value as compared to historical cost, report that the fair value valuation of biological assets is more reliable when predicting future cash flows. This is because the proportion of biological assets to total assets increases compared to historical cost valuations. However, they found that this does not apply to bearer plant holdings.

Da Silva, Rezende and Braunbeck (2016) conclude that the use of the fair value measurement of biological assets is more relevant than historical cost. They also point out that reliability is still a concern because of the different approaches used to determine the fair value of assets when there is no active market.

5.2 Faithful representation of biological assets

The usefulness of financial information is enhanced by its faithful representation. To satisfy the qualitative characteristic of faithful representation, information needs to be complete, neutral and free from error (IASB, 2018: 2.13). Elad (2004) states that the value of biological transformation is better reflected when net market value is used, which faithfully represents a biological asset's future economic benefits.

Abdullatif (2016), who researched the issues faced by external auditors in Jordan, found that auditors were concerned that companies took advantage of fair value estimates to overvalue their assets, which would make fair value information less reliable. Filip, Hammami, Huang, Jeny, Magnan and Moldovan (2017) conclude that while the application of the IFRS 13 fair value hierarchy will benefit

capital market participants, the fair value hierarchy is not sufficiently stable at levels 2 and 3 and the use of level 3 allows managers to manipulate financial information.

Landsman (2007) warns of the potential of management deliberately to manipulate fair values within any fair value methodology, as well as the problem of measurement error in the fair valuing of assets and liabilities. While a certain amount of earnings volatility can be directly attributed to the underlying economic volatility inherent in agricultural activities, the use of fair values in an industry like the agricultural sector exacerbates the problem of earnings volatility, which in turn reduces the faithful representation of these assets. Users of financial information will have more confidence in this information if they know that it is both relevant and faithfully reported: The Conceptual Framework emphasises that financial information that is both relevant and faithfully represented assists users in the decision-making process (IASB, 2018: 2.41).

The Conceptual Framework states that “although a single economic phenomenon can be faithfully represented in multiple ways, permitting alternative accounting methods for the same economic phenomenon diminishes comparability” (IASB, 2018: 2.29). One of the main reasons for the introduction of IFRS 13 in 2011 was to increase comparability through greater consistency in fair value measurement and disclosure (IASB, 2011: 72).

5.3 Comparability of financial statements

The IASB states that information reported in financial statements “is more useful if it can be compared with similar information about other entities and with similar information about the same entity for another period or another date” (IASB 2018: 2.24). Elad and Herbohn (2011) state that IAS 41, instead of enhancing comparability and changing accounting practices, created an illusion of comparability. This is because, prior to the implementation of IFRS 13, IAS 41 provided too many alternative valuation methods and allowed management too much room to apply different methods of estimation. These authors conclude that it is almost impossible for the application of IAS 41 to improve comparability unless entities within the same industry agree to use similar valuation methods. Comparability is compromised by allowing different accounting methods to be used by entities in the same industry (IASB, 2018: 2.26-2.27). Van Biljon (2016) states that the use of IAS 41 on its own leads to financial statements that cannot usefully be compared, because the standard does not have a single detailed valuation method. Van Biljon (2016) also states that because a number of alternative valuation methods are permitted in IAS 41, comparability will be directly affected by the method a particular entity uses. She highlights the fact that the valuation methods in IAS 41 allow for the extensive use of estimates, and that this will impact on the credibility of the information produced, because inconsistencies in estimates among entities will also impair comparability.

The consensus to date seems to be that IAS 41 has failed to enhance comparability among agricultural entities (Aryanto, 2011; Elad & Herbohn, 2011; Fisher, Mortensen & Webber, 2010; Herbohn, 2006; Ore, 2011). While Baigrie and Coetsee (2016) suggest that entities in the same economic sub-sectors need to agree to apply similar valuation methods for biological assets if they want to increase comparability, it remains to be seen whether the introduction of IFRS 13 and its application to agricultural entities have resolved this problem.

5.4 Standardisation of disclosure

The aim of standardised disclosure is to make financial statements more easily understandable by diverse users across the globe. An increase in the standardisation of disclosure requirements will make it easier for users to know what to expect and how to read and interpret the financial information of any entity, which in turn will enable them to make more informed decisions.

Maina and Wingard (2013) discuss the problems associated with the increased costs of obtaining fair values for biological assets under financially constrained circumstances, particularly in developing economies. Van Biljon (2016) states that most agricultural organisations face challenges such as the cost of obtaining valuations, a lack of understanding of the valuation model, and issues relating to the measuring of the age and condition of plants and bearer livestock. She further states that most

companies struggle with the valuation of biological assets because they only perform such a valuation once a year. She suggests that if valuations were done more frequently, it would enhance the skills and experience required to perform these valuations, which would in turn make fair value reporting more accurate and less burdensome.

A correlation between compliance with IFRS 13 and the size of both the firm and its auditors was also identified. Clavano (2014) mentions that, while there is a positive correlation between firm size and the valuation methods used, it is the perceived importance of any required disclosure by the audit firm that determines whether or not the disclosure is included in the entity's financial statements.

Baigrie and Coetsee (2016) found greater consistency in disclosure between companies in the same industry sector. They conclude that standardisation of disclosure is intended to improve the comparability of financial statements of different entities, and that the introduction of more extensive compulsory disclosures in the accounting standards will lead to greater standardisation of disclosure. This in turn should lead to greater comparability within economic sectors and across economic regions (Baigrie & Coetsee, 2016: 835). Philander (2016: 16) argues that "usefulness can be measured as the degree or extent to which financial information provides a sound basis to make informed decisions". A greater emphasis on the standardisation of disclosure should lead to the increased usefulness of financial information.

IFRS 13, through increased comparability of disclosure and more accurate use of fair value in financial statements, has the potential to enhance the qualitative characteristics of relevance and faithful representation. Faithful representation is enhanced when financial information is comparable and disclosed in a standardised way. Prior to the implementation of IFRS 13, IAS 41 made it difficult to compare financial information across entities, because it allowed for the use of many different valuation methods (Baigrie & Coetsee, 2016). IFRS 13, with its increased emphasis on the use of market-based valuations combined with greater disclosure requirements when other valuation methods are used, should lead to an increase in the standardisation of disclosure. However, there is a concern that disclosing too much information will not always be value relevant and it is hoped that standardised disclosure can be achieved through the use of minimal but relevant information.

6 Research Methodology

In June 2014 the IASB issued a paper entitled "Agriculture: Bearer Plants" (IASB, 2014) as an amendment to IAS 41 and IAS 16, Property, Plant and Equipment (IASB, 2003). This amendment removes bearer plants from the scope of IAS 41 and places them within the scope of IAS 16 (IASB, 2014: 1). Companies are required to apply these amendments to their financial statements for financial periods beginning on or after 1 January 2016 (IASB, 2014: 81K).

It is a JSE requirement that all JSE-listed companies comply fully with IFRS. In addition, the South African Companies Act 71 of 2008 (South Africa, 2008) requires all public companies to be fully IFRS-compliant. The financial statements of JSE-listed companies were carefully scrutinised to identify companies with holdings of biological assets in their statements of financial position.

Nineteen JSE-listed companies were identified as holding biological assets and were therefore selected for inclusion in this study. Financial statements analysed were for the first reporting periods beginning on or after 1 January 2015 since, while this was not the first reporting period in which IFRS 13 was applicable, it represents the period after which the application of IFRS 13 became mandatory and before the amendments removing bearer plants from the scope of IAS 41 came in to effect.

A qualitative approach was adopted which involved a content analysis of the annual financial statements of the selected companies. In terms of IAS 41, entities with biological assets are required to record these assets at fair value at the end of every reporting period. Previous research (Baigrie & Coetsee, 2016) looked at the compliance of South African companies with material holdings of biological assets with the disclosure requirement of IAS 41. Subsequent to this research, the IASB issued IFRS 13 Fair Value Measurement, which requires entities that hold assets and liabilities which

must be carried at fair value to apply the valuation and additional disclosure requirements of this standard (IASB, 2011: 5). In addition, IFRS 13 recommends three different valuation techniques, namely the market approach, the cost approach and the income approach (IASB, 2011: 62).

The research for this study seeks to determine the extent to which South African public companies with material holdings of biological assets have complied with the valuation and disclosure requirements of IFRS 13 in relation to these assets.

To achieve this, the following analyses were undertaken:

- an analysis of the annual financial statements of the selected companies to identify whether or not they indicated that they applied IFRS 13 to their biological assets;
- an identification of the level of the IFRS 13 fair value hierarchy to which these biological assets were assigned;
- a categorisation of the valuation techniques used for the recognition and measurement of these biological assets; and
- an analysis of the compliance of these companies with the disclosure requirements of IFRS 13 applicable to the level at which their biological assets were classified.

A detailed analysis of the accounting policies and biological assets notes to the financial statements of the selected companies was conducted. The results were collected and analysed using Microsoft Excel. For the purposes of this analysis, companies were divided into those with plants as biological assets and those with livestock as biological assets. A further sub-division within the category of plants was made between bearer plants and consumable plants, and in the category of livestock between bearer livestock and consumable livestock. Bearer plants included assets like fruit trees, vineyards and root stocks with a life of over twelve months, while consumable plants would be crops like vegetables, sugar cane and wheat that are harvested annually. Similarly, bearer livestock included dairy cows, laying poultry kept to produce eggs and abalone stock kept for breeding purposes, while consumable livestock included animals like sheep, poultry and perlemoen. Timber plantations would also be considered consumable plants because, although they have a life span of more than twelve months, in the end they are used and not the fruit they bear.

Although all the data used for this research was publically available secondary data, ethical clearance for this research was obtained from the relevant research ethics committee of the university at which this research was conducted (SAREC20181010-010).

7 Results and Findings

Of the nineteen companies selected, it was found that thirteen had plants as biological assets and nine had livestock. Some companies therefore had both plants and livestock as biological assets and were included in both categories. Table 1 shows the number of companies found to hold the different categories of biological assets used in this study.

Table 1 Breakdown of companies according to categories of biological assets

Plants		Livestock	
Bearer	Consumable	Bearer	Consumable
10	11	9	8

Source: Own analysis

7.1 Application of IFRS 13

Of the nineteen companies selected for this study, only one provided no indication of whether or not it applied either IAS 41 or IFRS 13 to the valuation of its biological assets. The remaining eighteen companies, making up 95% of those selected, indicated that they applied IFRS 13 to their biological assets.

7.2 Categorisation within IFRS 13 Fair Value Hierarchy

The IFRS 13 fair value hierarchy favours the use of level 1 inputs, which are quoted prices in active markets, followed by level 2 inputs, which are either directly or indirectly observable inputs, followed by level 3 inputs, which consist of unobservable inputs (IASB, 2011: 72). Depending on the level at which the assets are categorised, IFRS 13 requires different levels of disclosure (IASB, 2011: 91-93). IFRS 13 requires all companies that measure assets or liabilities at fair value to disclose the fair value measurement at the end of the reporting period, as well as the level of the fair value hierarchy at which the fair value measurements are categorised (IASB, 2011: 91-93). An initial analysis of the financial statements of the selected companies showed that all companies that applied IFRS 13 to the valuation of their biological assets, categorised these biological assets at level 3 of the IFRS 13 fair value hierarchy. A summary of the IFRS 13 compulsory disclosures was developed and used in the analysis to ascertain whether companies with biological assets complied with these requirements during the financial reporting period analysed. This detail is provided in Tables 4 and 5 to follow.

Table 2 IFRS 13 disclosures excluded from analysis

Paragraph	IFRS 13 requirement	Reason for exclusion
93(c)	Transfer between levels 1 and 2, and reasons for transfers	Not applicable, all biological assets classified as level 3
93(d)	Any changes in valuation techniques if applicable, and reasons for changes	No way of knowing if disclosure is applicable or not
93(e)	Total gains and losses included in other comprehensive income (OCI) per line item	IAS 41 does not permit use of OCI
93(h)(i)	A narrative description of the sensitivity of the fair value measurement to changes in unobservable inputs if a change in those inputs could result in a significantly higher or lower fair value measurement	No way of knowing whether or not disclosure is applicable
93(h)(ii)	For financial assets and financial liabilities, effect of change of reasonably possible alternative assumptions on fair value	Not applicable to IAS 41
93(i)	If highest and best use differs from current use, the fact that the asset is not being valued according to its highest and best use, and the reason why it is being used in a manner that differs from its highest and best use	No way of knowing whether or not disclosure is applicable

Source: Own construction

Six of the disclosures were found either not to be applicable or not to be testable since it was not possible from a quantitative content analysis to identify if their omission was due to the fact that the disclosure was not applicable or if it had been omitted in error. Table 2 shows the disclosures excluded from the analysis and the reasons for their exclusion. The disclosures which were included in the analysis are shown in detail in Tables 4 and 5 with the results of the analysis.

7.3 Valuation techniques applied

The results of the analysis that was carried out to identify the various categories of biological assets held by each company and the valuation techniques used by these companies are shown in Table 3. The three valuation techniques identified in IFRS 13 that may be used to establish fair value are the market approach, the cost approach and the income approach. The differences between these methods are that the market approach uses information from transactions of similar or identical assets and liabilities in the market to establish fair value, while the cost approach uses current replacement cost and the income approach uses discounted future cash flows to estimate current fair value (IASB, 2011: B5-B11). One of the companies used different measurement approaches to sub-divide its bearer plant holdings, namely replacement cost for banana plants and deciduous and macadamia trees, and amortised cost for sugarcane roots. This company has been listed under the cost approach in Table 3.

Table 3 Valuation techniques applied to biological assets

	Market approach	Cost approach	Income approach	Amortised cost
Bearer plants	10%	50%	20%	20%
Consumable plants	27%	18%	55%	0%
Bearer livestock	67%	11%	0%	22%
Consumable livestock	75%	12.5%	0%	12.5%

Source: Own analysis

The first three approaches listed in Table 3 are fair value approaches as defined in IFRS 13. The last classification, amortised cost, is not a fair value measurement and does not form part of IFRS 13. There is no broad definition of amortised cost in any of the IFRS statements except for the definition relating to financial assets and liabilities in IFRS 9 and the definition of amortisation contained in IAS 38 *Intangible Assets*. IAS 39 defines amortisation as “the systematic allocation of the depreciable amount of an asset to profit or loss over its useful life” (IASB, 2010: 8). The analysis in Table 3 shows that a number of companies are still using amortised cost to measure their biological assets. These companies are therefore not compliant with IAS 41.

The results show that, for companies with holdings of bearer plants, 50% used the cost approach and 20% measured these assets at amortised cost. The majority of these companies (70%) were already using a cost basis prior to the amendments to IAS 14 and IAS 16, which remove bearer plants from IAS 41 and require them to be measured using the cost model in IAS 16. This would indicate that companies in this sector support the IASB decision to remove bearer plants from IAS 41.

While companies with consumable plant holdings are fully compliant with IAS 41 and IFRS 13 in terms of the measurement of their biological assets, the analysis found that 22% of companies with bearer livestock holdings and 12.5% of companies with consumable livestock holdings were non-compliant with IAS 41, electing to measure these biological assets at amortised cost.

It is clear from the results shown in Table 3 that companies with different categories of biological assets use different valuation techniques. While there is very little consistency across the different categories, there is relative consistency within each category. It may still be, however, that each company is using the approach that it finds the most practical, regardless of what is seen as the best measure within the industry sector in question.

7.4 Disclosure

Using the framework described earlier, a further analysis was carried out on the compliance of the selected companies with the IFRS 13 required disclosures. The results of this analysis are shown in Tables 4 and 5.

Table 4 Compliance with IFRS 13 disclosures by companies with plant holdings

Par.	IFRS 13 requirement	Bearer	Consumable
91(a)	Identification of valuation technique and inputs used	100%	100%
91(b)	Effect on profit or loss for the period	80%	100%
93(a)	Fair value at the end of the period	80%	100%
93(b)	Level in fair value hierarchy	80%	100%
93(d)	Description of valuation techniques and inputs used	80%	100%
93(d)	Quantitative details of significant unobservable inputs used and their impact on fair value	40%	55%
93(e)	Total gains or losses recognised in profit or loss and the line item in which those gains or losses are recognised	50%	73%
93(e)	Reconciliation of opening to closing balances showing purchases and sales	80%	100%
93(f)	Total gains and losses attributable to unrealised gains and losses in profit or loss	0%	0%
93(g)	Detailed description of valuation processes used	10%	9%

Source: Own analysis

As seen in Table 4, all of the companies with bearer and consumable plants identified the valuation techniques used to measure these assets. While 80% of companies with bearer plant holdings provided 60% or more of the compulsory disclosures required by IFRS 13, 100% of the companies with consumable plants provided 60% or more of these disclosures. The disclosures with which companies were less compliant were those relating to the quantitative details of unobservable inputs used and the separate disclosure of the unrealised gains and losses for the period. In addition, only one of these companies provided a detailed description of the valuation processes used to measure their bearer and consumable plants.

As indicated earlier and as seen in Table 5, one of the companies with bearer and consumable livestock did not indicate whether it applied either IAS 41 or IFRS 13 to these assets. Apart from this, 78% of companies with bearer livestock provided 70% or more of the compulsory disclosures required by IFRS 13, and 88% of the companies with consumable livestock provided 70% or more of these disclosures.

Table 5 Compliance with IFRS 13 disclosures by companies with livestock holdings

Par.	IFRS 13 requirement	Bearer	Consumable
91(a)	Identification of valuation technique and inputs used	89%	88%
91(b)	Effect on profit or loss for the period	78%	88%
93(a)	Fair value at the end of the period	78%	88%
93(b)	Level in fair value hierarchy	78%	88%
93(d)	Description of valuation techniques and inputs used	78%	88%
93(d)	Quantitative details of significant unobservable inputs used and their impact on fair value	56%	63%
93(e)	Total gains and losses in profit or loss per line item	78%	88%
93(e)	Reconciliation of opening to closing balances showing purchases and sales	78%	88%
93(f)	Total gains and losses attributable to unrealised gains and losses in profit or loss	11%	13%
93(g)	Detailed description of valuation processes used	11%	13%

Source: Own analysis

A similar picture emerges in relation to companies with plants, in that the disclosures with which companies with livestock were less compliant were those relating to the quantitative details of unobservable inputs used and the separate disclosure of the unrealised gains and losses for the period, as shown in Table 5. Like companies with plants, only one of these companies provided a detailed description of the valuation processes used to measure their bearer and consumable plants.

Overall, these results show that the JSE-listed companies selected for this study complied with most of the disclosure requirements of IFRS 13. Four companies used amortised cost to value one or more category of biological assets and were therefore compliant with neither IAS 41 nor IFRS 13 in relation to these assets. The one disclosure with which 90% of the companies were non-compliant relates to providing a detailed description of the valuation processes used in arriving at the level 3 valuations of their biological assets. In addition, there was only one company that split the gains or losses for the period into realised and unrealised gains. This separation of realised and unrealised gains is something that should add value to biological asset reporting, especially in a volatile economic climate like South Africa.

These results show greater consistency of compliance across the different categories of biological assets than previous research as well as increased disclosure compliance by companies with livestock (Baigrie & Coetsee, 2016). It would seem therefore that IFRS 13 has led to increased consistency of disclosure by South African listed companies with biological asset holdings.

8 Conclusion

The purpose of this research was to assess the extent to which the nineteen JSE-listed companies selected for this study applied IFRS 13 to their biological assets, to determine the valuation techniques used by these companies to value their biological assets, and to determine the extent of these companies' compliance with the disclosure requirements of IFRS 13.

As indicated in Section 5 of this paper, recent literature suggests that a lack of disclosure of relevant information combined with a lack of standardisation of disclosure has led to a lack of comparability between the financial statements of different entities in the agricultural sector. In addition, the usefulness of financial information is enhanced by the faithful representation of information as well as by the disclosure of information relevant to the decisions users need to make in relation to the financial statements.

The current study found that the majority of companies with bearer plant holdings used a replacement cost approach for the valuation of these assets, while the majority of companies with consumable plant holdings used an income approach to measure these assets. However, three companies still used amortised cost to measure their bearer plant holdings, while none of the companies used amortised cost to measure its consumable plant holdings. As long as companies in the same industry continue to use different valuation techniques to measure the fair value of their holdings, a comparison of companies for decision-making purposes will remain difficult.

There was greater consistency in the valuation techniques used among companies with livestock holdings, with the majority of companies with both bearer and consumable livestock holdings using a market approach to value these assets. However, two companies still used amortised cost, one to measure its bearer livestock holdings only and the other to measure both bearer and consumable livestock holdings. Comparison among companies with livestock holdings for decision-making purposes is therefore more reliable than among companies with plant holdings.

In terms of the IFRS 13 minimum disclosure requirements, all of the companies that used one of the methods for assessing fair value advocated in IFRS 13 complied with the majority of the standard's disclosure requirements. Disappointingly, only 10% of companies with bearer plant holdings, 9% of companies with consumable plant holdings, 11% of companies with bearer livestock holdings, and 13% of companies with consumable livestock holdings complied with the IFRS 13 disclosure

requirement to provide a detailed description of the valuation process applied to arrive at the level 3 valuation used.

This research has shown that JSE-listed companies with material holdings of biological assets are, with a few exceptions, applying IFRS 13 to their biological assets and are compliant with most of the standard's disclosure requirements. Companies should ensure that they consider all factors affecting the biological asset in question in determining its fair value. Increased disclosure relating to the valuation methods used will achieve value relevance for many different types of biological assets, particularly those like forests and plantations, which require several inputs in order to arrive at a fair value. Companies with biological assets will need to achieve a balance between over-disclosure and under-disclosure. This can be done by disclosing more technical information about biological assets when market values are not available.

The objective behind the issuing of IFRS 13 was to provide preparers of financial statements with a single set of requirements and disclosures for all items measured at fair value, with the intention of increasing comparability of financial statements between entities with similar assets. While IFRS 13 and IAS 41 have encouraged entities to disclose more information about their biological assets, many preparers are still struggling with the cost of obtaining these fair values as well as issues relating to the various inputs required to value items classified at level 3 of the IFRS 13 fair value hierarchy. A 2018 study by Razak and Stainbank (2018: 19), which interestingly did not include companies with biological assets, concluded that where JSE-listed companies have the option of applying fair value to the valuation of their assets and liabilities, they are still avoiding fair value accounting, preferring to value these assets at historical cost. In addition, a recent study by He, Wright and Evans (2018) concluded that the fair value of biological assets does not provide incremental forecasting power for future operating cash flows.

The findings of this study are consistent with the findings of previous studies which provide "empirical support for the call by Elad and Herbohn in 2011 for the International Accounting Standards Board to revisit the implementation of fair value accounting in the agricultural sector" (He, Wright & Evans, 2018: 555). In an industry already faced with many challenges and financial constraints, the illusion of compliance with the fair value requirements of International Financial Reporting Standards may be a cost that they should not have to bear.

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NOTE: All website citations are accurate as at 31 December 2021.

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A Motorcycle Manufacturer's Strategic Positioning – Past and Present

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Keywords

Case study; strategy; strategic position and environment

Abstract

This study investigated the case of a motorcycle manufacturer in South Africa, and the relevant strategic positioning for change, as the motorcycle industry faces a market decline. As the changes in environment become more apparent in our daily lives, the literature provides evidence of the need for strategy modifications, thus allowing the manufacturer to realise a continuously strong strategic positioning.

The aim of this study was to determine the past and current strategies that the motorcycle manufacturer has implemented. This further led to the identification of strategies to improve its strategic positioning and simultaneously, a competitive advantage is thus maintained for the brand among competitors.

Using a qualitative research approach, 29 interviewees were purposively sampled with an element of convenience sampling. Making use of the interpretive paradigm allowed for semi-structured interviews to be held, thus allowing for an in-depth understanding of interviewee perceptions, opinions and experiences to be derived. Once the data had been collected, a process of transcribing followed, which allowed for the coding of multiple emerging themes from the interviews.

It was established that further training is required for the staff to ensure the equal understanding and knowledge of decisions and strategic implementations, while keeping up to date with the increasing technologies. Additionally, it is deemed necessary for the manufacturer to modify and incorporate the necessary strategies to target and acquire new markets.

1. Introduction

Through the evolution of the manufacturing of motorcycles, it is evident that we are surrounded by continuous change in the business world. Therefore, organisations, such as motorcycle manufacturers, need to redefine, adapt and modify strategy and strategic positioning continuously in order to keep up with the inevitable changes and challenges that are presented on a daily basis in the business environment (Alexander, 2015).

The motorcycle industry within South Africa faces a new arduous challenge. At the end of March 2020, a national lockdown was implemented, restricting movement and travel, owing to the rapidly spreading respiratory virus COVID-19 (About COVID-19, 2020). During this lockdown, only essential services were permitted to operate, which left motorcycle manufacturers applying for permits to perform strictly essential services only, for example in the case of the breakdown of an essential service provider. This pandemic would change the course of business, and increasingly, the economy, on a national and global scale, leaving motorcycle manufacturers unable to operate at full capacity (Masuku, 2020).

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During level 5, severe lockdown was implemented. Only essential services were allowed to operate and the rest of the population were forced to remain at home restricting trade, business and social gatherings. Additionally, a national curfew was implemented. At alert level 3, resumption of further economic activity was allowed, with the exception of those sectors and businesses where the risk of transmission remained high. At this level, the automotive sector was able to operate again, including the motorcycle industry. Alert level 2 called for the further easing of restrictions, with the interprovincial travel ban lifted and tourism operations resuming to cater for leisure tourists between provinces only, as international travel remained prohibited (Friedman, 2020).

During COVID-19, businesses were obligated to look into a crisis response as a method of survival, as most countries globally were faced with lockdown regulations, strict laws and, for some, the decline of business. Based on the direction of the market, organisations were required to follow health and safety protocols, perhaps even providing more for the community, as a way of setting a favourable image for customers. Financials needed to be remodelled as circumstances and the state of affairs remained unstable, including the incorporation of new models into the strategy as a safety net for the recurrence of a similar situation (Butler and Rivera, 2020). Decreased business activities led to the loss of employment, the reduction in national content of all vehicles within the automotive sector and the loss of any localisation benefits gained in the two years prior to the pandemic (West, 2020). Limited business led to the struggle of many motorcycle manufacturers to generate a profitable income. However, distributors remained optimistic about the situation, and about the recovery following the lockdown in South Africa and throughout the rest of the world (Masuku, 2020).

2. Problem Investigated

From literature, the problem that applies to the motorcycle manufacturer is the apparent decrease in motorcycle sales in South Africa. This requires the manufacturer to make certain changes to position themselves better in the market. The marketing gap allows for an understanding to be developed of how the brand needs to modify, adjust and implement strategies

The main principle of the study revolves around the declining market - in terms of sales - of the motorcycle industry within Gauteng. The focus of the study was on a particular motorcycle manufacturer and their dealerships across the Gauteng province. It is evident that a change is required in its strategic positioning to ensure that a competitive advantage is gained in the changing environment and declining market of the motorcycle industry.

3. Research Objective

To determine the motorcycle manufacturer's understanding of strategic positioning, its current strategic positioning and strategies to ensure competitiveness.

4. Literature Review

The literature review mainly alludes to change within the motorcycle industry, strategy and strategic positioning in general, but also to that of the motorcycle manufacturer under study.

4.1 Change in the motorcycle industry

Through its strategic positioning, the motorcycle manufacturer can compare itself with competitors in terms of strengths and weaknesses, as well as comparing essential values and providing development suggestions for the future. Owing to the ever-changing environment and fast-paced development of the industrial revolutions, the motorcycle manufacturer is likely to change its long-term vision with regard to the target market, as well as products and processes to maintain and gain increased competitive advantage within the motorcycle industry (Chereau and Meschi, 2017). The present industrial revolution has an impact on economic growth and technological advancements. Through this, organisations gain a newfound understanding of the changes in the market (Deloitte and McKinsey & Company, 2019). The dynamism of the environment, as well as the change and growth that take place, requires the motorcycle manufacturer in question to reassess its organisational goals. This leads to the modification of the manufacturer's strategy, and therefore

strategic positioning, within the industry in order to keep up with the demand of the target market (Martin, 2019).

The motorcycle industry within South Africa has changed significantly over the years, and the industry growth or even decline is connected to the South African economic growth statistics. For example, during the worldwide financial crisis in 2009 and 2010, motorcycle imports increased by 26.3%, thereafter decreasing again, to the point where South Africa faced the lowest number of sales in 2015 (Mtanga and McCamel, 2019). Figures showed that in 2019 motorcycle sales in South Africa increased by 4.7% from the year prior to a total number of 20 963. From these numbers, the increased sale of Chinese-produced motorcycles is recognised. However, with the nation being put under lockdown on 27 March 2020 owing to the COVID-19 pandemic, and most dealerships operating only to provide essential services until June 2020, a shift across the motorcycle industry is expected (Masuku, 2020).

4.2 Strategy

Strategy has also been interpreted to include an organisation's mission statement, vision and lastly, goals. Recognised as the outcome of various decisions that are made by executives, it is deemed essential to maintain and gain competitive advantage, as well as to achieve and increase the organisation's long-term value (Favaro, 2012). Johnson and Scholes (quoted by Tutor2u, 2018) define strategy as the "direction and scope" that is achieved by an organisation in a long-term period. Further developments are pursued in the acquisition of an increasingly advanced competitive advantage, using resources to meet customer demands, while positioned in a challenging environment. It is vital for an organisation to adopt a strategy that is distinct from others. In the game of attracting customers and creating value for them, it is necessary for an organisation to set itself apart from its competitors, creating an advantage that is unique and not easily mimicked. It has been said that a strategy is an uninterrupted work-in-progress, and will never realise as a final product, as it evolves further and more intricately over time (Gamble, Peteraf and Thompson, 2017). Owing to the occurrence of continuous changes, it is evident that the most effective strategies are rarely ever completely planned from the beginning. They arise from the numerous decisions that are taken at the different levels and departments within an organisation. These emerging strategies are based on the cultures and reactions that have been adopted by individuals, forming a pattern of actions that are learnt. Therefore, through learning from experiences, organisations are able to strive and grow (Bates, 2000).

4.3 Strategic positioning

When an organisation defines the business strategy, it is critical for it to determine the strategic positioning, meaning how customers are served in the market and in terms of the competitive advantage. To build a long-lasting customer relationship, three elements are important, namely attracting customers, customer satisfaction and customer retention, which are described to be at the core of customer bonding (Dean and Company, 2018). Porter (1980) states that organisations need to position themselves in various scopes and to various extents within the marketplace. Accurate strategic positioning enables the organisation to gain a competitive advantage and this forces competitive pressures to remain at a distance (Alden, Stayman and Hoyer, 1994).

According to Wickham (2001), strategic positioning is defined as the way in which an organisation differentiates itself from competitors through the value chain, as well as the way in which value is delivered to the target market and various consumer segments. Baines, Kay, Adesola and Higson (2005) describe strategic positioning as a concept to guide the organisation when achieving goals and objectives set according to the value chain.

4.4 Competitive landscapes changing strategic positioning

Challenges in the market for increased innovative and technological requirements are observed. Successfully addressing these requires organisations to acquire the skill of reacting in a swift, yet flexible manner to the various emerging problems both internally and externally. Suggestions for a

viable solution include the ability to achieve increased stability in the products, manufacturing processes and quality (Schröder, Schmitt and Schmitt, 2015).

Owing to increased technology in this modern era, the rate at which products are becoming outdated has increased significantly. Furthermore, environmental aspects, such as labour force and markets, the legal sector, the economy, distribution and supply channels, are influencing the competition at an increased rate. By incorporating the various influences, organisations have drastically changed the way they are managed, not only to keep up to date with the competition, but equally to ensure survival (Garrett and Welcher, 2018).

Competition in various industries has experienced a significant global increase over the years, resulting in the reduction of product and service prices, as well as the decrease in life cycles (Pistoni and Songini, 2017). To secure and increase competitive advantage, an organisation must ensure the execution of continuous innovation, which is to create, modify or invent a new good or service. This requires flexibility in strategy to adapt to the changing needs of customers and new competitors entering the market (Bateman, Snell and Konopaske, 2019).

Through an increased level of difficulty in competing in the markets, an organisation's ultimate survival is dependent on the capability of ensuring that sufficient profits are gained through accurate forecasting of future economic circumstances, along with the impact created by competitive and technological advancements (Pistoni and Songini, 2017). To make a product or the visit to a store, or even the use of a specific manufacturer more enjoyable and appealing to a customer, it is crucial for an organisation to provide the service at a level that is expected by customers. This allows an organisation to create and build on long-term relationships, thereby enabling it to either gain more or sustain competitive advantage. Even though it is vital to keep quality in mind, organisations increase their competitive advantage when delivering products at a higher speed than rivals. Today, speed has become, as organisations call it, a "strategic imperative" (Bateman *et al.*, 2019). A further driver of success is sustainability. Sustainability can take a variety of different meanings. However, for the purpose of this study, and in this context specifically, sustainability can lead to competitive advantage (Bateman *et al.*, 2019).

The 21st century has seen major changes in the manufacturing industry, as it has been transformed swiftly through globalisation as well as the increased use of advanced technology (Low, 2019). The global motorcycle industry will encounter various challenges, one of which will be to confront stagnating markets within the well-developed markets, which, in turn, will lead to a growth in demand in the emerging markets. Furthermore, legislation regarding CO₂ emissions is increasing, resulting in significant growth in the use of electric engine powered vehicles, forcing the required changes in strategy and strategic positioning (Mitterreiter, 2018).

Apart from the factors mentioned above, a new challenge has entered the market, which will change the course of business. Since the implementation of a national lockdown in South Africa on 27 March 2020, owing to the COVID-19 pandemic, a survey suggested that almost half of the businesses would not be able to operate post lockdown, as a result of insufficient funds (Ngalonkulu, 2020).

4.5 The past and present of the global motorcycle industry

Industrial revolutions have taken place over the years, causing more dramatic changes globally each time. The First Industrial Revolution dates back to the 18th century and further evolutions are taking place even today. According to Schwab (2016) the industrial revolution involves anything that has anything to do with artificial intelligence and devices, which work off a network. It also includes the use of information technology, the automation of production schedules through new electronics, the modification of human genes and the digitalisation of manufacturing processes. Lehmacher noted in (2017) the World Economic Forum's head of supply chain and transport industry, the transformation from fuel-driven vehicles to electric vehicles will greatly influence the world. Furthermore, a reduction in oil usage and transport for logistical matters will be apparent, thereby becoming eco-friendlier.

From the early years of the 20th century, the motorcycle industry began to show increasing rates of growth owing to processes of manufacturing and production being simplified. However, the industry was severely impacted by World War I, the Great Depression and World War II. Moreover, the Great Depression resulted in a number of large motorcycle manufacturers disappearing. Subsequently, the main motorcycle manufacturers found during this time were made up of small family businesses, which, in addition, eventually faded in the wake of the increased frequency and influence of the environmental shocks caused throughout the industry (Pel, 2019).

Following World War II, the production of motorcycles included improved engineering sold at a lower cost, as well as improved roads, leading to the emerging success of the global motorcycle industry. As motorcycles became the primary mode of transport in Asia, and with the portrayed image of motorcycle clubs or gangs, the global interest in motorcycles sparked. Today motorcycles are found to be extremely popular, as they provide an affordable and efficient means of transport. Over 200 million riders worldwide use motorcycles daily (History of Motorcycle, 2020).

Over the past few decades, the motorcycle industry globally has experienced various phases, including the appearance of several decline phases. Between 1950 and 1980, the motorcycle industry faced a decline owing to varying product strategies, rather than environmental effects such as the World Wars (Klepper, 1997). During this time period, in 1960, the Asian motorcycle manufacturers entered the market. Initially, their first production line was based on the imitation of existing products, but at a low quality during the recovery of the economy. Once the economy had recovered, the Asian industry manufactured motorcycles that were comparable in quality to the European industry yet were sold at a lower cost. The cost-based competition was strong and could have led to the European motorcycle industry vanishing entirely. Eventually, the entirety of the global market became more open to the Asian motorcycles, which resulted in the Asian motorcycle manufacturers claiming up to half of the market share globally in 1980 (Pel, 2019).

Research by Pel (2019) concludes that the level of production plays a crucial role in the survival of motorcycle manufacturers. Researchers and developers are constantly under pressure to identify and determine customer preferences, as well as newly available emerging market segments (Mtanga and McCamel, 2019).

4.6 Strategic positioning of the motorcycle industry

Cokayne (2016b) states that the motorcycle industry was forced to take an aggressive approach in terms of strategy and had to grow the segment of smaller motorcycles below 500cc to achieve forecasted increased sales of 50% by 2020. Droppa (2018) confirms that both affordability and safety play a role in preventing people from purchasing motorcycles. The South African rand has also depreciated, causing motorcycle prices to increase (Droppa, 2018). Cokayne, 2016a further suggests that this may be a contributing factor to motorcycle sales declining further since 2014. The depreciating rand is of particular concern as motorcycles are imported rather than manufactured locally.

Owing to the declining nature of the motorcycle industry within South Africa, it is obvious that many dealerships have closed down, such as East Coast Motorcycles in 2014 and DNA thereafter. Companies need to compete in declining environments to settle down and target specific market levels that are consistent with existing market opportunities. Not only does the motorcycle industry find itself in a fast-changing environment, but the motorcycle lifestyle is changing too. The motorcycle industry also targets millennials, and therefore places much-needed attention on their needs and demands. As a result of the increase of digitalisation, motorcycle manufacturers are more focused on e-commerce. This is to provide as much information as possible, as well as reviews, while remaining available to the customer that comes to the dealer personally (Lawrence, 2019).

Based on the above forecasts and statements made by Cokayne (2016b), motorcycles were found to dominate the markets in 2019. Based on the type of vehicle, the motorcycle category had a 75% market share in that year, and it was forecast to maintain this. However, contrary to the statement

made by Cokayne (2016a), it was found that motorcycles above 500cc were favoured in the market in 2019, with the segment ranging between 251cc and 500cc next in line. It was then forecast that the motorcycle industry would maintain these figures for the next five years to come (Business Wire, 2020). However, because of the COVID-19 pandemic these forecasts are expected to change.

5. Research Methodology

An interpretivist research paradigm was selected, making it possible to understand the world according to the insights and experiences of the interviewees (Thanh and Thanh, 2015), followed by a qualitative approach that can be thought of as the phrasing of an argument to convince the community of the credibility of the conclusions reached (Cardano, 2020), infused by inductive reasoning.

Inductive reasoning is acknowledged as a good base to start with to ensure a systematic approach that is progressive throughout the research (Tjora, 2018), supporting qualitative research to frequently provide content-rich reports, allowing a full interpretation and understanding of the context. With an interpretive, naturalist paradigm, an interactive process is followed, thus being influenced by the researcher's personal history, background, gender and possibly even ethnicity, as well as by the interviewees. Therefore, the interpretive researcher generates a structure from the sequence of responses and findings, collaborating these with the topic in question (Denzin and Lincoln, 2008).

A research approach is defined as an overall direction in which the research will be conducted (Bryman and Bell, 2014). For the purpose of this research, a qualitative research method were used. Through them, research subjects can be studied in their natural environment, endorsing an interpretation to be established on the meaning and purpose of the subject's appearance in that specific setting.

Using exploratory research provides for the maximisation of generalisations, resulting in a description as well as understanding of various social settings or even psychological extents. It can be defined as a scientific process from one perspective, or even as a peculiar approach to the research methodology to collect and analyse as much data as possible (Hunter, McCallum and Howes, 2018). For this study specifically, this was deemed beneficial as it motivates the research to be conducted in an interactive and unrestricted manner. This creates an advantage, as more flexibility is created, and underlying opinions, reasons and motivations gathered by interviewee responses and secondary research can be investigated further.

There are various research strategies, all of which consist of different frameworks and evaluation methods, chosen for the data collection process and its analysis. The design chosen enables the establishing of solutions to the research question, with the aim of achieving the research objectives (Bryman and Bell (2014) have listed five possible research designs. Since a case study strategy enables the collection of rich data that is detailed in content within the social context, thus allowing for a better understanding of the environment in question (Willis, 2007), this strategy was selected. A case study strategy also allows for an exhaustive and in-depth study of the motorcycle manufacturer and employees' perceptions around the manufacturer's strategic positioning to gain maximum competitive advantage.

The population was the motorcycle manufacturer in South Africa with its numerous dealerships across the country. However, for the sample, the head office and a few dealerships spread across Gauteng were selected, as most dealerships were situated in this province. Both methods of convenience sampling and purposive sampling were used for the initial contact with the individual dealerships and head office. Thereafter, further interviewees were suggested based on the requirements established and the purpose of the study, to allow the required data to be gathered as efficiently as possible.

The data collection process involved semi-structured interviews conducted with various interviewees within their individual dealerships and head office. An interview guide was used to assist in pre-determining topics or questions, ensuring consistency between interviews. The data were analysed by

means of content analysis. This followed a specific process, assisted through the use of Atlas.ti, while following the steps set out by Du Plooy-Cilliers *et al.*, (2014).

Measure of trustworthiness, authors such Bryman and Bell (2014) propose that qualitative studies should be evaluated differently from quantitative studies. This is due to the argument that multiple accounts can be present in a social phenomenon. Thus, the measure of trustworthiness is implied as a valid criterion for qualitative research.

6. Results and Findings

Section 1: Biographical data

This section contains some personal information on the research interviewees, enabling insight to be derived in relation to the responses received. These are based on how long the interviewees had been involved with the brand, the period in their specific positions, as well as their role and the training that they had undergone. These responses assist in understanding the extent of the perceptions and knowledge portrayed, and the possible influences of these on the answers provided in the main section of the interview. Although these questions were not necessarily central to the research, the data facilitates the contextualisation of the findings, benefiting the researcher in the formulation of suitable and proper recommendations, as well as conclusions.

The interviews were carried out at the head office of the brand and a further five dealerships situated in the main regions of Gauteng, South Africa. Six interviewees were interviewed at head office level, five each were interviewed at four of the dealerships and three were interviewed at one dealership.

6.1 Duration of involvement with the brand

The interviewees had been involved in the brand as short as one month up to 23 years. Of the 29 interviewees, two had been involved with the brand in the racing scene, prior to their current employment at the manufacturer. Thus, they had increased knowledge and experience with the brand, although not being corporately involved.

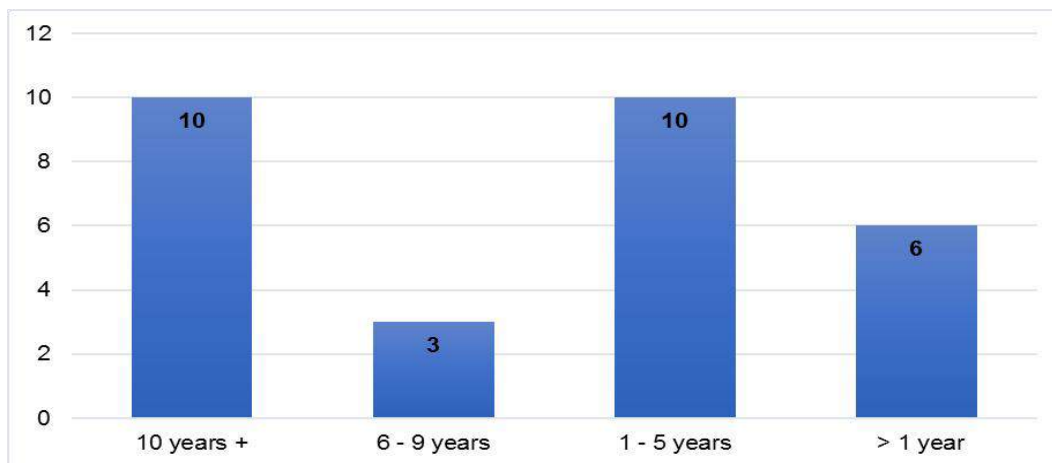


Figure 1: Interviewees' period of involvement with the brand

6.2 Length of time employed in current position

Some interviewees had occupied different positions during their employment with the brand while others had remained in the same positions throughout the duration of their involvement with the brand.

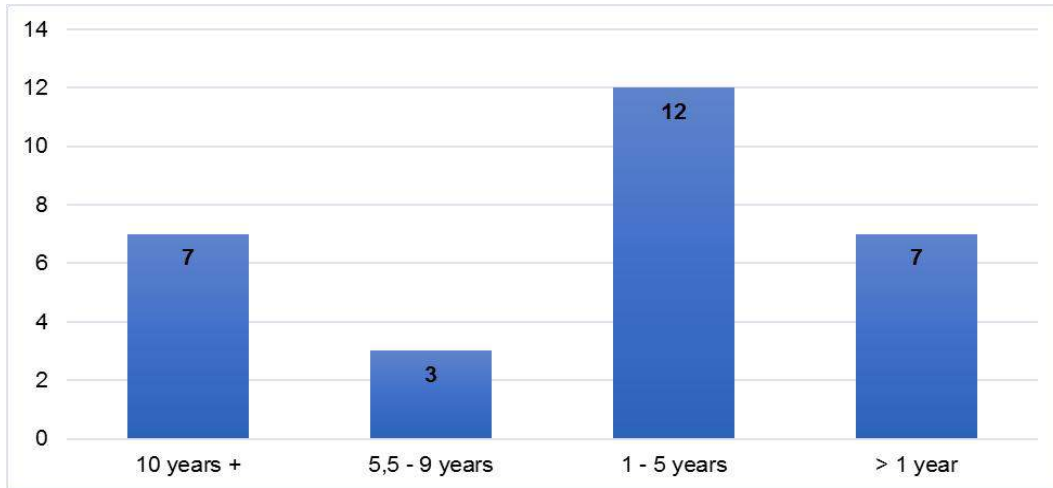


Figure 2: Duration of employment in current position

6.3 Interviewees' role in the brand

To achieve the intent of purposive sampling, interviewees were employed under the following positions. The role of the dealer principal was explained as one that takes on the general operations of the individual dealership, ensuring “that the business is economically viable, and that it is actually worth investing in, as well as giving a return back to the individuals that have invested into this business”. The managing director took on a similar role, only on a broader spectrum, namely overseeing “the entire scope of the business”.

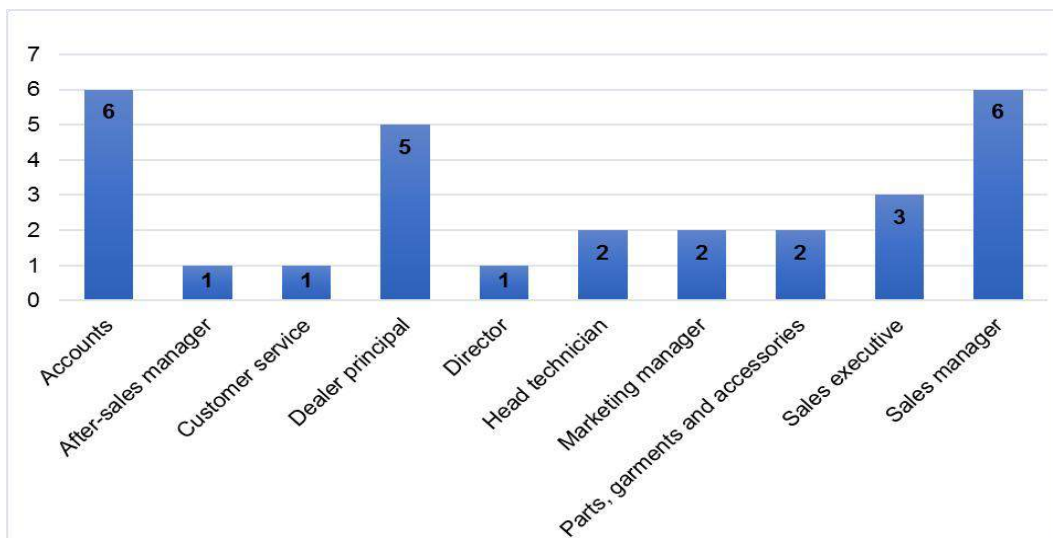


Figure 3: Interviewee roles within the brand

6.4 Training completed by interviewees

The following figure indicates the manner in which the interviewees had acquired their training, but also to a certain extent their knowledge levels. A greater part of the interviewees (19) confirmed that they had undergone formal training with the head office of the brand. For further and more in-depth training, some employees were sent to headquarters, located in Europe. This training was specifically for those working at head office level and the head technicians to ensure product knowledge.

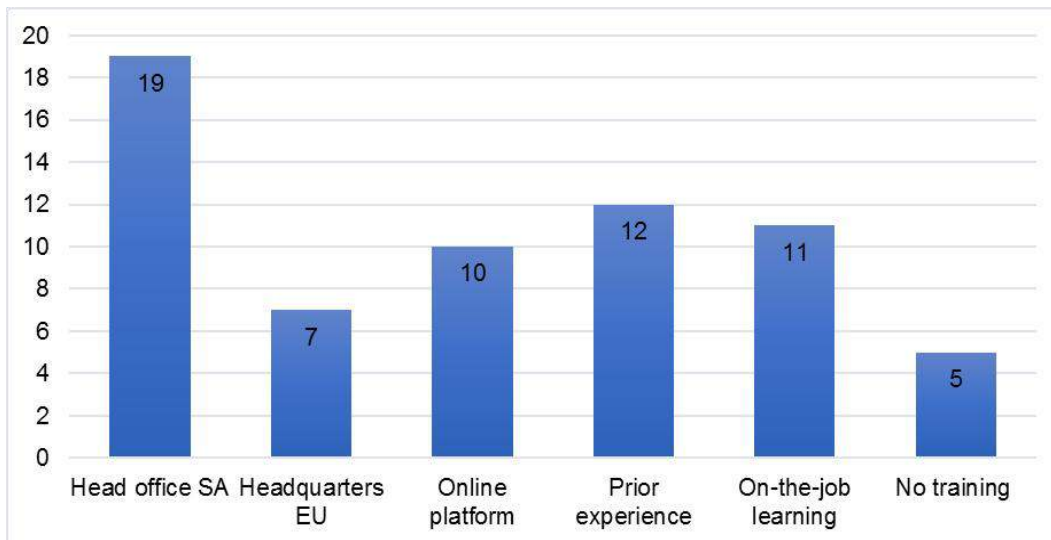


Figure 4: Training completed by interviewees

Section B:

This section consists of the main interview questions on the research objective of the study. Whereas the first section of questions allowed for a better understanding to be gained of the interviewees’ biographical information, the second section elicited the interviewees’ knowledge of the subject of the study and within the brand.

6.5 Understanding “strategic positioning”

In probing the interviewees on strategic positioning, the responses varied from a definition applied to the brand to no explanations provided at all.

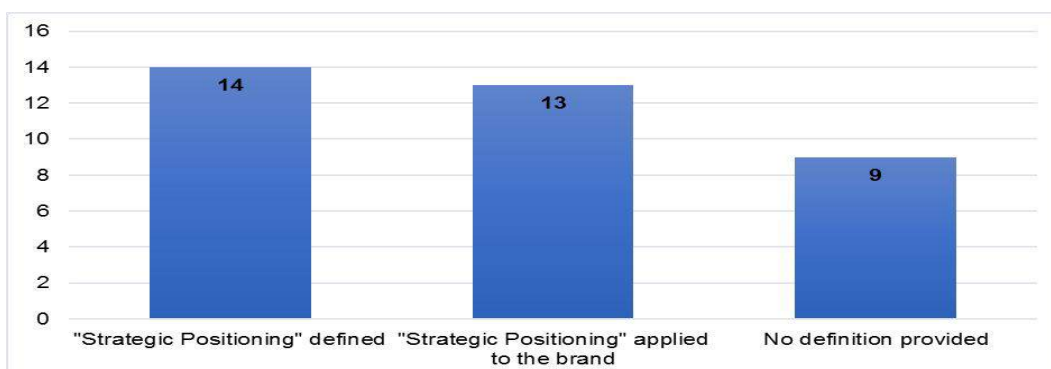


Figure 5: Understanding "strategic positioning"

6.5.1 Discussion

Some interviewees believed that the term “strategic positioning” specifically dealt with the location of the manufacturer’s dealerships and their job positioning. However, it was observed that interviewees were unsure of the definition of the term. Although less acquainted with the definition, interviewees simultaneously contributed to the definition provided by Baines et al. (2005), who state that strategic positioning entails the role of adequate decision-making by management, ensuring the support of the value chain for further growth and developments to be achieved.

Utilising organisational resources and capabilities has provided the possibility for offers to be packaged specifically for clients, ensuring the achievement of a competitive advantage, as is further noted by Gamble et al. (2017). Gartenstein (2018) notes the importance of strategic planning as it provides for a method of guiding daily decisions. It was further established that strategic planning provided the manufacturer with the necessary insight into the market and business environment.

Based on data analysed from the interviews, it is evident that the key factors for success as identified by Bateman et al. (2019) have a significant impact on organisational success. Some of the factors were mentioned by the interviewees when defining their understanding of the term “strategic positioning”, and evidently these were some of the few keys that resulted in the organisation gaining and maintaining a competitive advantage within the market, allowing them to have the majority of the market share in the industry. In addition, it was established that the brand needed to develop according to the competitors in the market. This is in line with Low (2019) who stresses the importance of accurate management of information, to ensure survival over and above a strong strategic positioning.

Although some important factors that the manufacturer needed to keep in mind when making certain decisions were mentioned, the importance of appropriate strategic positioning was missed by some of the employees.

6.6 Current strategic positioning of the brand

Interviewees alluded to the current strategic positioning of the brand as indicated in the table below.

Table 1: Current strategic positioning of the brand

	Number of interviewees		Number of interviewees
Accessibility of dealerships	2	Advanced development and technologies	3
Popular adventure segment	1	Attract and retain the same audience	2
Customer satisfaction	4	Acknowledge the declining market	2
Leaders in the industry	8	It is a lifestyle	4
Opportunities to attract new markets	5	Dominating in the off-road segment	7
Based on passion	2	Increased product development	4
Focus on the racing scene	4	Increased use of social media	3
Strong brand	3	The brand is unique	5
Strategies linked to core values	5	Strong warranty system in place	2

6.6.1 Discussion

It was found that the current strategic positioning entails a variety of aspects. The strategic positioning was elaborated from the development of the motorcycles, to the accessibility of the dealerships, to the unique image portrayed by the brand. The manufacturer has a well-thought-out plan to achieve the goals and objectives set out. It has four core values, which form the basis of all further decisions made to grow the brand. Ranging from the marketing strategy through to the technological advancements apparent in the product development, those four core values are always expressed. Through the implementation of these decisions, the manufacturer is differentiated from competitors. This is in line with Baines et al. (2005), who define strategic positioning as a notion to guide an organisation to reach specific objectives, while decisions need to be made about the operations occurring both internal and external to the organisation, ensuring that the requirements set for the value chain are met.

Torok (2019) explains that strategies are modified and strengthened according to the competition in the market. This was further observed in the manufacturer, as interviewees stated, that the brand is continuously looking to improve their service and their products, while remaining the technological leader when it comes to the development of motorcycles.

The brand was recognised as the leader in the industry on multiple occasions by interviewees. Proving the obvious growth of the manufacturer globally, as confirmed by an anonymous source (Anon, 2019b) and additionally verified by a website (News24, 2019), the brand is still managing to acquire increased market share in South Africa. While the brand has always been known to focus more on the offroad and adventure segment, the variety of motorcycles has increased, allowing for a broadened market to be targeted and acquired Torok (2019).

The strength of the motorcycle manufacturer's current strategic positioning was further grounded by the majority of the interviewees stating that the target market is reacting positively. As per Dean and Company (2018), determining the strategic positioning entails how the customers should be served to pursue and ensure competitive advantage. Therefore, based on the interview conversations, it was found that the interaction between customers and the motorcycle manufacturer had increased, as it was described that a "bigger awareness" has been achieved. The manufacturer is seen to constantly meet customer expectations and their changing demands, which is achieved through continuous developments and ever-increasing quality. It was noted by interviewees that the manufacturer "listens to the customers".

It is through this that the brand is able to cater for the different markets and has allowed for the opportunities of pursuing further markets to be exploited. In support of this is McGrath's established principle (2013) that organisations are required to listen to the voice of customers to recognise the changing demands, to appropriately implement the necessary changes. Based on the interviews, it was established that the introduction of new models of motorcycles and the variety that the brand provides create an excitement among the market, which in turn has allowed for a stronger positioning of the manufacturer, especially in South Africa.

In keeping up with the trends and environmental changes, the manufacturer is able to increase customer retention. Apart from the brand implementing the correct strategies to ensure the proper service and care given to the customers, brand loyalty is achieved by (Cokayne, 2016a).

6.7 Reaction of the target market to the strategic positioning

When interviewees were asked to describe the reactions of the target market towards the motorcycle manufacturer to determine the actual current strategic positioning, the responses ranged from positive to negative and unknown. Only one of the 29 interviewees was unsure of the target market's reaction. However, with the increasing technological advancements, an interviewee said that "there is a whole new customer coming". This customer was described as being technologically more advanced and "far superior" than most. Being accepting of e-technology, these new customers no longer felt the need to, for example, "shift through a gearbox or [pull] a clutch".

Although youngsters were described as loving the brand, interviewees added that customers made purchases beyond the simple motorcycle - "they don't just buy the bikes, they buy the bikes, the clothes, the jackets, the boots, the whole thing" and that "they go the whole 9 yards".

6.7.1 Discussion

Generally, the target market was found to be reacting positively to the brand's strategic positioning. It was found that customer involvements with the brand go beyond the purchase of a motorcycle. Customers were described as wanting to be a part of a lifestyle.

The increased technology advancements seem to be enjoyed by some and not others. It was found that although the older generation still prefers the roar of the motorcycle's engine, the newer generation, the one that is exposed to technology far more than anyone before, enjoys the aspect of an electronic motorcycle. It must be noted that the newer generation did not grow up with motorcycles that had the bare minimum when it came to technology and are therefore unaware how to operate such machines. This is also observed by Doepker (2019) who states that advancements require increased creativity. It was established that a change in skills and knowledge is required for future innovations and fast-approaching changes, which is in line with Low (2019).

Some customers prefer the adventure scene, but others prefer to be more “hard core” on the streets. This is a strong position for the manufacturer as they can provide for the majority of motorcycle riders, both in South Africa and the rest of the world. This is in line with Klepper’s heritage theory used by Morrison and Boschma (2019).

Therefore, it was found that the motorcycle manufacturer is filling numerous gaps within the industry. This is owing to the vast range of offerings that are presented to the customer. Traditionally, the customer would have to go through various brands to fulfil the differing needs of riding styles.

6.8 Current strategies to address the strategic positioning for a competitive advantage

The aim of this question was to gain further insight into the current strategies implemented. Based on the responses received, interviewees felt more comfortable and at ease with a better understanding of the various terms. Interviewees listed the strategies as depicted in the figure 6 to address the strategic positioning and to ensure a competitive advantage for the motorcycle manufacturer.

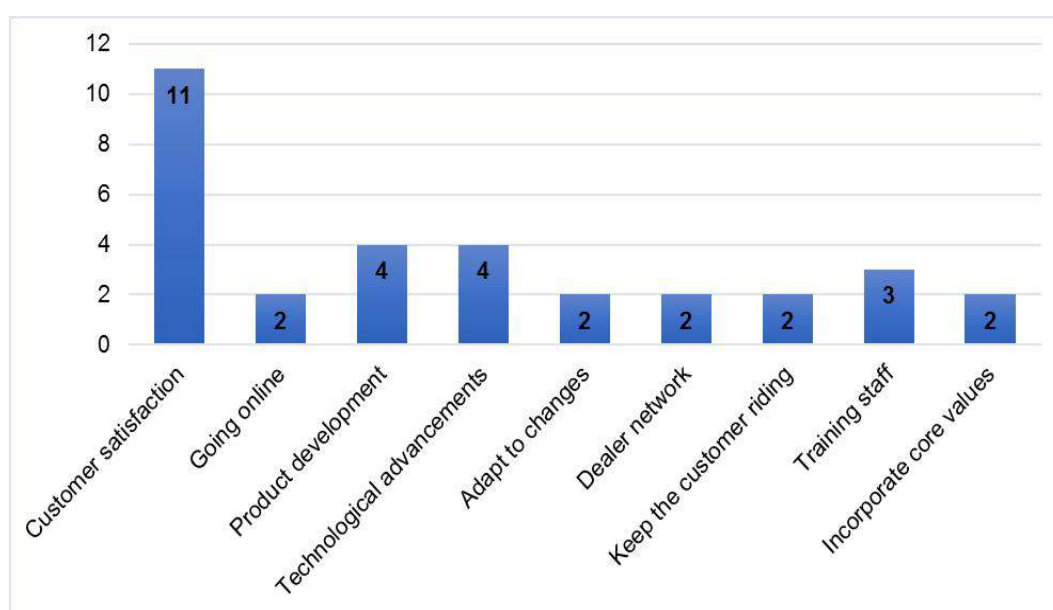


Figure 6: Current strategies

6.8.1 Discussion

As stated by Gamble et al. (2017), the establishing of strategies requires management to examine and select a strategy among various possibilities in line with the opportunities sought. Ultimately, innovative strategies are said to result in the creation of superior value propositions for customers or prompt the manufacturer to penetrate different markets. The manufacturer is recognised as a diversified company through the variety of motorcycles provided, including the sale of accessories. In addition, the manufacturer covers other vehicle types, but for the purpose of this study, the motorcycle section was focused on. The current focus lies on various aspects of the organisation, starting from customer satisfaction to the incorporation of the core values.

The main and most prevalent strategy mentioned was ensuring customer satisfaction. To achieve this, interviewees made note of further strategies that have been implemented. On numerous occasions throughout this analysis and the discussions, the topic of training appeared several times. As stated before, the brand focuses on manufacturing “premium-quality performance vehicles”. As part of the strategy to ensure a strong strategic positioning and to maintain this focus, the manufacturer ensures that adequate and in-depth training is provided to the staff members on a regular basis (Anon, 2019a). It is important to ensure that the employees understand the products, the reasons behind the developments, as well as the function of individual new features and how these add value for the

customers. This knowledge ensures that customers are provided with the best possible service, as they are assisted efficiently and effectively.

Another current strategy is increasing the strength of the dealer network. By strengthening the network, dealerships will receive increased support from one another, making it easier, in turn, to increase market share and sales. The dealer network additionally provides the benefit of information becoming more accessible, which can be used to further ensure that the needs and expectations of the customers are met. This strategy corresponds to the opportunities sought through market development. As was argued by Wanjiru, Muathe and Kinyua-Njuguna (2019), market development affects the performance of manufacturing organisations.

The manufacturer is currently strategising to increasingly implement means of digitalisation. As technology is seen to make people's day-to-day lives effective and efficient, through increased digital means the manufacturer could strive for further increased sales, as people are increasingly making purchases online. It was stated that the manufacturer is currently focusing on e-commerce, thus making information accessible to customers, while ensuring that the dealerships are made available to customers personally as well. This forms part of the product development strategies, enabling the organisation to remain current and up to date with the necessary innovations and market examinations (Wanjiru *et al.*, 2019).

A final strategy was the introduction of new apps. Incorporated as part of the technology and product development strategy, according to an interviewee, the manufacturer continuously reinvests a percentage of the turnover into R&D. This ensures the development of systems and components required for the production of the continuously envisioned "premium quality vehicles" (Gamble *et al.*, 2017:349). As the technologies on the motorcycles increase, new apps and features are included. These new apps provide an array of services, which customers seem to enjoy as they track their rides and plan their routes for outrides and breakfast runs. Further apps are currently in the process of being released, one of which will in essence provide for the additional comfort of safety for riders.

Asking this question would have provided enough data on the current happenings of the manufacturer, but further details were investigated. Interviewees were asked to elaborate further on the changes that had occurred strategically in the past. Considering the timeline, the strategic changes over the past decade were considered, see 6.9.

6.9 Strategic changes within the motorcycle manufacturer in the past decade

According to the interviewees strategic changes the motorcycle manufacturer had undergone in the past decade were around the motorcycles itself and then also in terms of technology, the brand and market. Regarding the motor cycles, specific changes are indicated in figure 7.

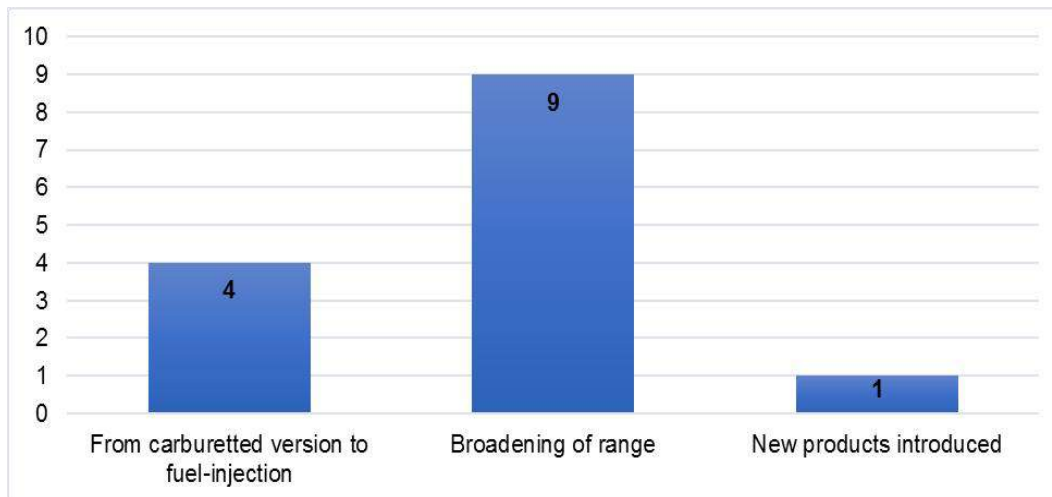


Figure 7: Strategic changes to motorcycles

6.9.1 Discussion

Further strategic changes have been made in the motorcycle development for many years. The manufacturer strives to improve the product range annually. Whereas today those changes entail the inclusion of technological advancements, throughout the past decade, these changes involved the innovations to the engines from carburetor to fuel-injection.

Further apparent changes to the motorcycles compared to the past decade are the increased use and advancements of technology. Motorcycles come out with an increasing number of gadgets, software, technologies and added features, all of which are recognised as added value to the customers as their demands change. Additionally, with the market heading into a more digitalised environment, it was found that customers today are more and more informed when walking into a dealership to make a purchase. The advancements in technology are driven by the manufacturer's main focus, by making the increased levels of innovation possible, while the motorcycle manufacturer expands into further markets (Anon, 2019b).

Another strategic change entails the improvements and technological advancements of digital tools to be used in the workshop. Technicians and mechanics used to get their hands dirty to find a fault, but with increasing time constraints, fault finding has now become a much simpler process. Today, technicians are able to fix the problems and carry out work much quicker and more efficiently with the diagnostic tools provided. This reduces the waiting period for work on motorcycles to be completed and provides additional customer satisfaction with the expected service.

Further apparent strategic changes over the past decade involve the brand. Over the years, the manufacturer has successfully grown the corporate strength and identity, adding to its strategic positioning in the industry. The brand is now more recognised in the industry. As the brand has strengthened, so have the products, thus creating the correlation between a quality product and the brand (News24, 2019).

7. Managerial Implications

Having knowledge of strategic positioning and the reason behind certain decisions will provide employees with the capability of achieving the goals set out by the organisation within their specific departments. Therefore, it is suggested that employees know what the current focus of the manufacturer is, why specific strategies are in place and how the different goals could drive the brand in South Africa to gain a stronger positioning, while ensuring further growth.

Increased up-to date technology training will ensure that staff have the necessary skills to operate specific tools or machines and accomplish different tasks. This training and preparation could additionally motivate employees and allow them to become more open to the changes that will arise.

Welcoming these changes is an advantage on its own, as managers are prompted to modify strategies on a regular basis and can ensure that beneficial involvement will still be provided by employees. Therefore, training employees and providing them with the necessary knowledge, will create a more flexible mindset. Along with the following suggestion, the importance of training is reflected in accurate decision-making and completing of tasks.

The motorcycle manufacturer is to make continuous adjustments to the organisation's strategy and goals by constantly investigating the markets and identifying the changing demands. When demands can be met, success and growth become constant in the motorcycle industry, despite the declining market in South Africa. It was realised that by spending more time with the customers, a relationship and trust are created. Through this relationship customers reveal expectations and what needs to change. Therefore, spending more time with customers ensure their voice is heard and to address their needs in a better way.

Also, the brand should focus more on e-commerce segment allowing customers the option to purchase online. Online financing of the motorcycle could also be arranged (Morton, 2020). Other strategies include the development of their dealer network, to continue leading in the successful segments, as well as working towards increased market share in the other motorcycle ranges. The use of Frenken's diversification theory could be considered which allows organisations to grow through increased knowledge spillover from other industries, or in this case, the different types of motorcycles (quoted by Kublina, 2015).

8. Conclusion

In summary, it is evident that the motorcycle industry is currently facing a decline in sales in South Africa. Through the changes instilled by technological advancements, information technology and the COVID-19 pandemic, the motorcycle manufacturer is faced daily with new challenges. This can also reflect as a new opportunity to develop the necessary skills and adjust strategy. Enhancing employees' knowledge levels would not only make them more aware of brand, but also create positioning opportunities to strengthen the brand and consequently ensure the motorcycle manufacturer's competitiveness.

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- *Note: In order not to reveal the identity of the motorcycle manufacturer and other businesses, the names in the relevant references are replaced with XXX.
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Human Resource Management and Performance, and the Moderators and Mediators Influencing This Relationship

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Keywords

Human Resource Management, Performance, Moderators, Mediators, Relationships.

Abstract

The execution of human resource management practices (HRMP) serves many functions, but from a monetary perspective, the most important function should be to enhance employee performance, a proxy to organisational performance. The aim of this study is to identify the nature of the HRM-performance relationship, as to understand the mechanisms through which HRM contributes to performance. An extensive desktop review of articles regarding the HRM-performance relationship was conducted, identifying both moderator and mediator variables, as well as the effect of each. HRM practice is frequently used as a predictor of both employee and organizational performance. The results reveal that employee performance is significantly and positively associated with training & development, promotion & career management, performance appraisal & management, employee empowerment practice and job security practices, while organizational performance is moderately and positively associated with employee training & development, performance appraisal & management, employee participation and employee empowerment practices. The HRM-employee performance relationship is better mediated by job satisfaction, engagement transformational leadership and motivation as well as moderated by individual pay for performance, work environment and motivation. The HRM-organizational performance model is better mediated by job satisfaction, organizational commitment, organizational citizenship behaviour and motivation and moderated by organizational culture, creativity climate and transformational leadership. This information is valuable to those interested in enhancing performance, as it identifies which HRMP and attitudes to target in their interventions.

1. Introduction

Human resource management (HRM) is an important concept, as it relates to employee and organizational performance. Due to this reason, the connection between human resource management (HRM) and performance has been a fundamental part of the management studies during the past three decades (Wood, 2021). Human resources have typically been considered the most vital role in many kinds of organizations (Anwar & Abdullah, 2021), and the way in which an organization manages people influence both employee and organizational performance (Huselid, 2014; Becker, Huselid & Ulrich, 2001). Previous researchers such as Hameed and Waheed (2011) suggest that performance of an employee will lead to the organizational effectiveness. The structure of HRM-performance researches emerged from two domains: first HRM practice associates with employee performance (e.g., Boxall and Purcell, 2016; Wamuuru, 2018 and Taibu, 2016), and second it links with organizational performance (e.g. Boselie, 2019; Anwar, 2021; Jawaad, 2020 and Hassan, 2016).

HRM and performance are inherently linked (Armstrong, 2020). Several scholars; starting from the ground-breaking HRM works (e.g., Barney, 1991; Delaney & Huselid, 1996; Guest, 1987; Becker & Gerhart, 1996) to the recent ones (e.g., Gould-Williams, 2021; Armstrong, 2020; Wood, 2021;

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Glaister, 2018; Anwar, 2021), investigated the link between human resource management and performance and found that they were positively associated. For example, Beer (1984) established the Harvard model of HR management, showing the link between HRM practice and various employee and organizational performance. In addition, Guest (1987) also developed an input-output model of HRM depicting link between HRM practices with employee outcomes such as employee commitment and employee motivation.

HRM practices have a universal effect on employee and organizational performance (Wood, 2021). The structure of HRM–performance models has two domains: first HRM practice associates with employee performance (e.g., Boxall and Purcell, 2016; Wamuuru, 2018 and Taibu, 2016), and second it links with organizational performance (e.g. Boselie, 2019; Anwar, 2021; Jawaad, 2020 and Hassan, 2016). The employee performance refers to an outcome and accomplishment of employees at work (Nethmini and Ismail, 2019); and the result achieved at individual level in an organization (Rozi and Sunarsi, 2020), as well as the result of work achieved by employees as per the job requirements in a company (Bangun, 2012); employee productivity and output in an organization (Hameed and Waheed, 2011). Organizational performance refers to the attainment of overall organizational goals (Milkovich, 2004); and outcomes achieved at organizational level such as investment, financial and market performance, and productivity (van Esch, 2018; Becker & Gerhart, 1996); financial performance (profits, return on assets, return on investment, etc.); product market performance (sales, market share, etc.); and shareholder return (Richard, Devinney & Johnson, 2009), and service delivery performance (Shishiwa, 2021; Taibu, 2016).

2. Research Objective

This study was undertaken with the aim of comprehensively reviewing HRM literatures on HRM–performance relationship, to identify those HRM practices which fundamentally drive performance, and also moderator and mediator variables, as well as the effect of each thereof, on performance. Consolidating the research on this topic will allow scholars to better understand the link between HRM–performance, to identify those HRM practices which fundamentally drive performance, and also moderator and mediator variables used to bridge the relationships.

3. Literature Review

This section presents the literature review section, in which the concept of performance, mediation and moderation are explained.

The term ‘performance’ has been defined contextually as per the nature and structure of studies that researchers intended to inspect (Abu-Jarad, Yusof and Nikbin, 2010). For example, Rivai (2004) defined the term performance as the overall outcome or success of a person during certain periods of duty compared to the standard of the work. It is defined as the target or criteria that have been determined in advance and have been agreed a process of how the work takes place to achieve the work (Katili, 2021); as well as achievement or implementation of work (Suwanto Donni, 2011).

Mediation and moderation are two of the most widely used statistical tools in the social sciences (Hayes, 2017). Inserting appropriate mediating and moderating variables is a strategy of enhancing business research designs, as well as generating more realistic and accurate findings (relating to studies Namazi, 2016).

A mediation variable is also called ‘an intervening or process variable’ a variable used to explain and kind and effects of the relationship between independent and dependent variables in an attempt to determine the nature of the study more accurately and functionally (Baron & Kenny, 1986; Kenny, 2014; Muller, 2005), while a moderating variable is a moderator is a qualitative (e.g., sex, race, class) or quantitative (e.g., level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable, and introduced when there are unexpectedly weak or inconsistent relations between a predictor and an outcome across studies (Baron & Kenny, 1986). In this regard, moderators address “when” or “for whom” a predictor is more strongly related to an outcome, a mediator establishes “how” or “why” one variable

predicts or causes an outcome variable. More specifically, a mediator is defined as a variable that explains the relation between a predictor and an outcome (Baron & Kenny, 1986; Holmbeck, 1997; James & Brett, 1984).

4. Methodology

The research methodology is directly linked to the aim of this article, namely to provide a systematic and qualitative review of published academic literature on HRM-performance relationships, moderator and mediator variables, as well as the effect of each. Systematic literature reviews have become widely accepted during the past two decades (Kable, Pich & Maslin-Prothero, 2012). It is a rigorous and highly valued approach to reviewing and evaluating literature on specific topics as it enhances the quality as well as results of the review process (Schutte and Steyn, 2015), by deploying a transparent and reproducible procedure Tranfield, (2003) and by incorporating a comprehensive and unbiased search for identifying and evaluating an extensive amount of literature (Mulrow, 1994). The HRM-performance relationships and both moderator and mediator variables of the different researchers were thus systematically reviewed by the researchers, qualitatively. According to Creswell and Poth (2016), a qualitative approach is an interpretive practice.

The reporting on the articles focused on three elements: identifying the direct HRM- performance relationships, determining the moderator or mediator variables included in the (proposed or hypotheses) model and finally detecting those elements in the models which contributed significantly to performance and success.

The technique was by searching all articles published since 2016 which showed up when using the keywords 'human resource management and performance relationships including the moderators and mediators variables' available in Google Scholar. The data for this study was collected from 352 articles in line with the inclusion and exclusion criteria set in the study. As including criteria, in terms of date, 2016 was used. The search was also limited to article which were located using the word "Human Resource Management (HRM)" and "Performance" in the search line. When doing this search, some articles appeared in the output, which could clearly contribute to this study was also included. Other works were included because of kept appearing. This, some works were included (e.g., Huselid, 1995; Wood and De Menezes, 1998; Guest, 1987; Beer, Spector & Lawrence, 1984; Storey, 1989, Hendry, 1995; Stredwick, 2013; Flippo, 1984). By default, unpublished materials were not parts of this study. Also, papers written in another language other than English were not included in this study.

These objectives were met by following four major strategies: First, relevant materials on HRM-performance as well as with mediation and moderation model were collected. Second, materials were categorised as: HRM-employee performance; HRM-organizational performance, and with mediating and moderating relationships. Third, the list of correlation and regression results of materials on the relationships between HRM-employee and organizational performance as well as mediating and moderating variables were performed. Finally, the results on the correlation and regression coefficient values of materials were performed and interpreted thereof.

The correlation coefficients (r) values were labelled and categorize using the rule of thumb for interpreting the size of a correlation coefficient developed by previous authors (E.g., Taylor, 1990; Weber & Lamb 1970 and Mason, Lind & Marchal, 1983). In this case, the r values of 0.1 to 0.35 are generally interpreted as low or weak correlations, 0.36 to 0.67 modest or moderate correlations, and 0.68 to 1.0 strong or high correlations and the r coefficients of 0.90 and above are very high correlations.

The effect size of the calculated R^2 was interpreted using the set of descriptors proposed by Cohen (1988). An effect size measure for simple or multiple regressions is the regression coefficient, R^2 (Kotrlík, Williams and Jabor, 2011). In this case, the R^2 values of .02 to .12 are generally interpreted as small effect size, 0.13 to 0.25 medium effect sizes, and 0.26 to 1.0 large effect sizes.

5. Results and Findings

In total 352 articles were identified to address the specified topic, empirically investigating human resource management and performance, and the moderators and mediators influencing this relationship. This section contains the result of major findings related with human resource management and performance, and the moderators and mediators variables.

Table 1 shows the summary of studies conducted on the HRM – performance relationships.

Table 1: Summary of HRM and performance studies

R/ship	Mediating/moderating variables list	HRM and employee performance		HRM and organizational performance		Total
		Frequency	Authors	Frequency	Authors	
Direct	—	22%	E.g., Boxall, 2019; Otoo, 2019; Mira, 2019 and Taib, 2018.	25%	E.g. Al-Tit, 2016; Gao, 2020; Qureshi, 2020 and Qadir, Saeed & Khan, 2017.	47%
			None	1%	E.g., Taamneh, Alsaad and Elrehail, 2018.	1%
Mediating	Organizational citizenship behaviour		None	1%	E.g., Taamneh, Alsaad and Elrehail, 2018.	1%
	Knowledge management		None	3%	E.g., Al-Tit, 2016; Rahman, Ab Hamid, and Mustaffa, 2018.	3%
	Job satisfaction	9%	E.g., Uddin, 2017; Boxall & Hewagama, 2019; Mira & Yap, 2019; Alsafadi, 2021 and Heffernan & Harney, 2016.	1%	E.g., Rahman, Ab Hamid, and Mustaffa, 2018	10%
	Engagement	3%	E.g., Taib, Saludin and Hanafi, 2018; Almaaitah, Alsafadi, Altahat, and Yousfi, 2020.	3%	E.g., Taib, Saludin and Hanafi, 2018; Almaaitah, Alsafadi, Altahat, and Yousfi, 2020.	6%
	Well-being	3%	E.g., Khoreva and Wechtler, 2018.			2%
	Organizational commitment	1%	E.g., Torlak, Kuzey, and Ragom, 2018.	6%	E.g., Torlak, Kuzey, and Ragom, 2018; Almaaitah, Alsafadi, Altahat, and Yousfi, 2020.	6%
	Employee motivation	1%	E.g., Qadir, Saeed & Khan, 2017.	4%	E.g., Qadir, Saeed & Khan, 2017 Dar & Bashir, 2014; Waseem and Majid, 2017; Taamneh, 2018	6%
	Employee competency		None	3%	E.g., Otoo, 2019; Van Esch, Wei and Chiang, 2018	3%
	Innovation		None	3%	E.g., Riana & Suparna, 2020.	3%
	Moderating	Transformational leadership		None	1%	E.g., Almaaitah & Alsafadi, 2020
Creative climate			None	2%	E.g., Van Esch, Wei and Chiang, 2018.	1%
Management philosophy			None	1%	E.g., Ismail & Awawdeh, 2020.	1%
Individual pay for performance		2%	E.g., Yang, Huang, Tang, Yang, 2021.	1%	E.g., Yang, Huang, Tang, Yang, 2021.	3%

Organizational culture		None	2%	E.g., Al-Tit, 2016.	1%
Organizational /management support	3%	E.g., Waseem and Majid, 2017 and Al-Tit, 2016.	3%	E.g., Waseem and Majid, 2017 and Al-Tit, 2016.	3%
Working environment	2%	E.g., Badriantand Ekhsan, 2020.		None	1%
Individual performance			1%	E.g., Masood, 2010.	1%

Source: Own compilation, 2022.

The result presented in Table 1 shows, substantial number (25%) of studies (e.g., Al-Tit, 2016; Gao, 2020; Qureshi, 2020 and Qadir, Saeed & Khan, 2017) were conducted on the HRM - organizational performance model, while the remaining (22%) studies (e.g., Boxall, 2019; Otoo, 2019; Mira, 2019 and Taib, 2018) were conducted on HRM practice and employee performance links.

Mediating and moderating variables are common in HRM-performance studies. The most frequently used mediating variables between HRM and organizational performance are organizational commitment (6%) (E.g., Torlak, Kuzey, and Ragom, 2018; Almaaitah, Alsafadi, Altahat, and Yousfi, 2020); employee motivation (4%) (Qadir, Saeed & Khan, 2017 Dar & Bashir, 2014; Waseem and Majid, 2017; Taamneh, 2018); knowledge management (3%) and engagement (3%); while job satisfaction (9%) (e.g., Uddin, 2017; Boxall & Hewagama, 2019; Mira & Yap, 2019; Alsafadi, 2021 and Heffernan & Harney, 2016); engagement (3%) (e.g., Taib, Saludin and Hanafi, 2018; Almaaitah, Alsafadi, Altahat, and Yousfi, 2020) and well-being (3%) (Khoreva and Wechtler, 2018) are top mediating variables on the HRM- employee performance model.

Moderating variables are also vital in the HRM- performance studies. Organizational and management support (3%) (e.g., Waseem and Majid, 2017 and Al-Tit, 2016); organizational culture (2%); and Yang, Huang, Tang, Yang, 2021 and creative climate (2%) (e.g., Van Esch, Wei and Chiang, 2018) are most frequently used moderating variables between HRM and organizational performance models, while organizational and management support (3%) (e.g., Waseem and Majid, 2017 and Al-Tit, 2016); individual pay for performance (2%) (e.g., Yang, Huang, Tang, Yang, 2021); and working environment (2%) (e.g., Badriantand Ekhsan, 2020) are most frequently used moderating variables on HRM - employee performance studies.

Correlations and Regression results between HRM and Performance

In this study, the results on the correlation and regression coefficient values of previous studies were performed and interpreted. According to Asuero, Sayago and Gonzalez (2006), correlation and regression are different, but not mutually exclusive, techniques. Roughly, regression is used for prediction whereas correlation is used to determine the degree of association.

Correlations between HRM and Performance

The Pearson correlation results of previous studies were systematically reviewed to determine the relationship between separate HRM practice and employee and organizational performance. Asuero, Sayago and Gonzalez (2006), stated that “correlation is used to determine the degree of association between variables. The analysis result presented in Table 2 shows the correlation results of previous authors.”

Table 2: Correlation between HRM and performance

#	Single score measure of HRM	Organizational performance			
		Correlation (r) values	Level of Corr.	Correlation (r) values	Level of Corr.
1	Compensation & incentive management	r=.153 (p=.00) (Boxall, Hewagama, Cheung, & Hutchison, 2019).	Low	r=.17 (p=.00) (Delaney & Huselid, 1996).	Low
		r=0.288 (p=.002) (Ahmad and Shahzad, 2011).		r=0.220, p=0.00 (Masood, 2010).	
		r=0.122, p=0.00 (Masood, 2010).		r=.27 (p=.00) (Singh, 2000).	
		r=.086 (p=.00) (Mira, Yap & Chan, 2019).		r=0.174 (p=.00) (Ismail, 2020).	
2	Training and development	r=0.477 (p=.00) (Otoo, 2019).	Moderate	r=.406 (p=.00) (Anwar & Abdullah, 2021).	Moderate
		r=.438 (p=.00) (Taib, Saludin and Hanafi, 2018).		r=.50 (p=.00) (Quresh, Akbar, Khan, Sheikh & Hijazi, 2010). r=0.36 (p=.00) (Otoo, 2019).	
3	Performance appraisal and management	r=0.368, p=0.00 (Masood, 2010).	Moderate	r=.36(p=.00) (Gao, 2020).	Moderate
		r=0.476 (p=.00) (Otoo, 2019).		r=.56 (p=.00) (Quresh, Akbar, Khan, Sheikh & Hijazi, 2010).	
4	Recruitment and Selection	r=.088 (p=.00) (Mira, Yap & Chan, 2019).	Low	r=.01 (p=.00) (Delaney & Huselid, 1996).	Low
		r=0.123 (p=.00) (Otoo, 2019).		r=.24 (p=.00) (Singh, 2000).	
		r=0.235, p=0.00 (Masood, 2010).		r=.273(p=.00) (Gao, 2020).	
		r=0.299 (p=.002) (Manzoor, Wei, Bányai, Nurunnabi, and Subhan, 2019).		r=0.2351, p=0.00 (Masood, 2010). r=0.130 (p=.00) (Otoo, 2019).	
5	Promotion and career management	r=0.359 (p=0.00) (Masood, 2010).	Moderate	r=0.205 (p=.00) (Otoo, 2019).	Low
		r=0.46 (p=.00) (Otoo, 2019).		r=0.274 (p=.00) (Masood, 2010).	
		r=.553 (p=.00) (Taib, Saludin and Hanafi, 2018).		r=.230 (p=.00) (Singh, 2000).	
		r=.546 (p=.00) (Quresh, Akbar, Khan, Sheikh & Hijazi, 2010).			
6	Employee participation	r=0.284 (p=.00) (Otoo, 2019).	Low	r=.405(p=.00) (Gao, 2020).	Moderate
		r=0.240, p=0.00 (Masood, 2010).		r=.50 (p=.00) (Quresh, Akbar, Khan, Sheikh & Hijazi, 2010).	
7	Job security	r=.576 (p=.00) (Taib, Saludin and Hanafi, 2018).	Moderate	r=.381 (p=.00) (Anwar & Abdullah, 2021).	Moderate
8	Empowerment	r=.489 (p< 0.01) (Qadir, Saeed & Khan, 2017); r=0.384 (p=.002) (Manzoor, 2019).	Moderate	r=.358 (p< 0.01) (Qadir, Saeed & Khan, 2017).	Moderate
9	Job analysis & design	r=.092 (p=.00) (Mira, Yap & Chan, 2019).	Low	r=.26 (p=.00) (Quresh, Akbar, Khan, Sheikh & Hijazi, 2010), r=.17 (p=.00) (Singh, 2000), r=.26 (p=.00) (Qureshi, 2020).	Low
10	Org. support	r=.326 (p=.00) (Mira, Yap & Chan, 2019).	Low	None	None
11	Employee relation	r=.326 (p=.00) (Mira, Yap & Chan, 2019).	Low	None	None
12	Well-being	r =0.21, p=0.00. (Khoreva and Wechtler, 2018).	Low	None	None
13	Health and safety	None	None	r=0.21 (p=.00) (Ogunyomi and Bruning, 2016).	Low

Source: Own compilation

Correlations between HRM and Employee Performance

The result shows that employee performance has moderately and positively correlated with employee training and development $r=0.477$, $p=.00$ (Otoo, 2019); $r=.438$, $p=.00$ (Taib, Saludin and Hanafi, 2018); performance appraisal and management $r=0.368$, $p=0.00$ (Masood, 2010) and $r=0.476$, $p=.00$ (Otoo, 2019); promotion and career management $r=0.359$, $p=0.00$ (Masood, 2010); $r=0.46$, $p=.00$ (Otoo, 2019); $r=.553$, $p=.00$ (Taib, Saludin and Hanafi, 2018) and $r=.546$, $p=.00$ (Quresh, Akbar, Khan, Sheikh & Hijazi, 2010); job security $r=.576$, $p=.00$ (Taib, Saludin and Hanafi, 2018) and employee empowerment practices $r=.489$ ($p < 0.01$) (Qadir, Saeed & Khan, 2017); $r=0.384$ ($p=.002$) (Manzoor, 2019). Other studies (e.g., Boxall, Hewagama, Cheung, & Hutchison, 2019; Mira, Yap & Chan, 2019; Khoreva and Wechtler, 2018), reported that employee performance has low level ($r < 0.35$, $p < 0.01$) and positive links with compensation management, recruitment and selection, employee participation, job analysis and design, organizational and management support, employee relation and well-being and employee safety & health practices. Moreover, the relationship between HRM and employee performance is significant at 1% level.

Correlations between HRM and Organizational Performance

The result shows that organizational performance has moderately and positively associated with employee training and development $r=.406$ ($p=.00$) (Anwar & Abdullah, 2021 and $r=.50$ ($p=.00$) (Quresh, Akbar, Khan, Sheikh & Hijazi, 2010); performance appraisal and management $r=.36$ ($p=.00$) (Gao, 2020), $r=.56$ ($p=.00$) (Quresh, Akbar, Khan, Sheikh & Hijazi, 2010); employee participation $r=.405$ ($p=.00$) (Gao, 2020), $r=.50$ ($p=.00$) (Quresh, Akbar, Khan, Sheikh & Hijazi, 2010); job security $r=.381$ ($p=.00$) (Anwar & Abdullah, 2021) and employee empowerment practices $r=.358$ ($p < 0.01$) (Qadir, Saeed & Khan, 2017). Other studies (e.g., Masood, 2010, Ismail, 2020, Gao, 2020 and Otoo, 2019), proved that organizational performance has low level ($r < 0.35$, $p < 0.01$) and positive links with compensation management, recruitment and selection, job analysis and design, organizational and management support, employee relation and well-being and employee safety & health practices. Moreover, the result shows that the relationship between HRM and organizational performance is significant at 1% level.

Regression between HRM and Performance Models

Multiple regression models has been used by different researchers to determine the relative contribution of each of HRM practices to the employee performance (e.g., Mira, Yap & Chan, 2019; Otoo, 2019; Manzoor, 2019 and Qadir, Saeed & Khan, 2017), and organizational performance (e.g., Boxall, 2019; Al-Tit, 2016; Gao, 2020 and Ogunyomi, 2016). The following section describes the regression results on the HRM- performance relationships.

Regression between HRM and Employee Performance

The regression result between HRM practice as an independent variable and employee performance as dependent variable indicates that the top HRM practices that influence employee performance are compensation and incentive management practices (e.g., $R^2=0.340$, (Masood, 2010 and $R^2=0.405$, Mira, Yap & Chan, 2019); training and development practices (e.g., $R^2=0.357$, Masood, 2010); employee participation (e.g., $R^2=0.334$ (Masood, 2010); empowerment (e.g., $R^2=.354$, Qadir, Saeed & Khan, 2017) and social support (e.g., $R^2=.287$, Mira, Yap & Chan, 2019).

Table 2: Regression between HRM and performance Models

#	HRM Practice	Employee performance	Adjusted R ²	Effect size	Organizational performance	Adjusted R ²	Effect size
1	Compensation & incentive management	$\beta=0.338$ (p=0.00) (Mira, Yap & Chan, 2019); $\beta =0.271$ (p=.003) and Ahmad and Shahzad, 2011).	R ² =0.340 (Masood, 2010) and R ² =0.405 (Mira, Yap & Chan, 2019).	Large	$\beta=0.230$ (p=0.00) (Boxall, 2019); $\beta=.266$ (p=0.00) (Dar, 2014) and $\beta=0.213$ (p=0.00) (Masood, 2010)	R ² =0.090 (Masood, 2010) and R ² =.07 (Singh, 2000)	Medium
2	Employee training and development	$\beta=0.338$ (p=.002) (Mira, Yap & Chan, 2019); $\beta =0.599$ (p=.002) (Otoo, 2019) and $\beta =0.393$, p=0.00 (Uddin, 2017).	R ² =0.357 (Masood, 2010).	Large	$\beta =0.396$ (p=.00) (Al-Tit, 2016); $\beta=0.280$ (p=0.00), (Masood, 2010) and $\beta =0.396$ (p=.00) (Al-Tit, 2016.).	R ² =.41 (Qureshi, 2020); R ² =.488 (Gao, 2020); R ² =.396 < 0.05), (Al-Tit, 2016).	Large
3	Performance appraisal and management	$\beta=0.166$ (p=0.00), (Masood, 2010); $\beta =0.068$ p=.012) (Ahmad and Shahzad, 2011).	R ² =0.337 (Masood, 2010).	Medium	$\beta =.392$ < 0.05) (Al-Tit, 2016); $\beta=0.374$ (p=0.00), (Masood, 2010); $\beta=.341$ (Dar, Bashir, Ghazanfarand Abrar, 2014).	R ² =.42 (Qureshi, 2020); R ² =.392, (Al-Tit, 2016); R ² =.488 (Gao, 2020)	Large
4	Recruitment and Selection	$\beta =0.110$ (p=.037) (Otoo, 2019); $\beta=0.247$ (p=0.00), (Masood, 2010); $\beta =0.224$ (p=.00) (Manzoor, 2019).	R ² =0.267 (Masood, 2010).	Medium	$\beta=0.362$ (p=0.00), (Masood, 2010); $\beta =0.561$ (p=.00) (Ismail & Awawdeh, 2020) and $\beta =0.561$ (p=.00) (Al-Tit, 2016).	R ² =.46 (Al-Tit, 2016); R ² =.488 (Gao, 2020).	Large
5	Promotion and career management	B=0.115(p=.039) (Bowra, Sharif, Saeed, and Niazi, 2012); $\beta=0.053$ (p=.225) (Otoo, 2019); $\beta=0.094$ (p=0.00), (Masood, 2010).	R ² =0.324 (Masood, 2010).	Small	$\beta =0.369$ (p=.00) (Al-Tit, 2016); $\beta=0.280$ (p=0.00), (Masood, 2010); $\beta=.205$ (Dar, Bashir, Ghazanfarand Abrar, 2014).	R ² =.369, (Al-Tit, 2016), R ² =0.113 (Masood, 2010); R ² =.05 (Singh, 2000).	Large
6	Employee participation	$\beta =0.302$ (p=.00) (Manzoor, 2019); $\beta =0.202$ (p=.043) (Otoo, 2019); $\beta=0.189$ (p=0.00), (Masood, 2010).	R ² =0.334 (Masood, 2010).	Large	$\beta=0.310$ (p=0.00), (Masood, 2010).	R ² =0.121 (Masood, 2010); R ² =.04 (Singh, 2000).	Large
9	Job security	None	None	None	B=-0.061 (p=.212) (Anwar & Abdullah, 2021); $\beta =0.357$ (p=.00) (Al-Tit, 2016.)	R ² =.376, (Al-Tit, 2016).	Large
10	Empowerment	$\beta =0.405$ (p=.00) (Manzoor, 2019); $\beta=.608$ < 0.01(Qadir, Saeed & Khan,	R ² =.354 (Qadir, Saeed & Khan,	Large	$\beta =0.341$ (p=.00) (Al-Tit, 2016); $\beta=.344$ (p=.00) (Gao, 2020);	R ² =.341 (Al-Tit, 2016); R ² =.205 (Qadir,	Large

		2017); $\beta=0.338$ (Mira, Yap & Chan, 2019)	2017).		$\beta=.371 < 0.01$ (Qadir, Saeed & Khan, 2017).	2017); $R^2=.488$ (Gao, 2020); $R^2=.03$ (Singh, 2000).	
11	Job analysis and design	$\beta=0.338$ (p=.00) (Mira, Yap & Chan, 2019).	$R^2=.21$ (Mira, Yap & Chan, 2019).	Medium	$\beta=0.338$ (p=.00) (Mira, Yap & Chan, 2019).	$R^2=0.34$ (Mira, Yap & Chan, 2019).	Large
12	Social support	$\beta=0.338$ (p=.00) (Mira, Yap & Chan, 2019).	$R^2=.287$ (Mira, Yap & Chan, 2019).	Large	None	None	
13	Employee relations	$\beta=0.338$ (p=.00) (Mira, Yap & Chan, 2019).	$R^2=.22$ (Mira, Yap & Chan, 2019).	Medium			
14	Employee well-being	$\beta =0.21$, p=0.00). (Khoreva and Wechtler, 2018)	$R^2=.32$ (Khoreva and Wechtler, 2018).	Medium	None		
17	Health and safety	None	None	None	$\beta =0.19$ (p=.00) (Ogunyomi and Bruning, 2016); $\beta =-0.328$ (p=.00) (Al-Tit, 2016).	$R^2=.328$, (Al-Tit, 2016).	Large

Source: Own compilation

Those HRM practices with moderate level of influence on employee performance are performance appraisal and management practice (e.g., $R^2=0.337$, Masood, 2010); recruitment and selection (e.g., $R^2=0.267$, Masood, 2010); job analysis and design (e.g., $R^2=.21$, Mira, Yap & Chan, 2019); employee relations (e.g., $R^2=.22$, Mira, Yap & Chan, 2019) and employee well-being (e.g., $R^2=.32$, Khoreva and Wechtler, 2018). But, employee promotion & career management practice has small level of influence on employee performance (e.g., $B=0.115$, $p=.039$, Bowra, Sharif, Saeed, and Niazi, 2012; $\beta=0.053$, $p=.225$, Otoo, 2019 and $\beta=0.094$, $p=0.00$, Masood, 2010).

Regression between HRM and Organizational Performance

The regression result between HRM practice as an independent variable and organizational performance as dependent variable indicates that the top HRM practices that influence organizational performance are training and development practices (e.g., $R^2=.41$, Qureshi, 2020; $R^2=.488$, Gao, 2020 and $R^2=.396$, Al-Tit, 2016); performance appraisal and management practice (e.g., $R^2=.42$, Qureshi, 2020; $R^2=.392$, Al-Tit, 2016 and $R^2=.488$, Gao, 2020); promotion and career management practice (e.g., $R^2=.369$, Al-Tit, 2016, $R^2=0.113$, Masood, 2010; $R^2=.05$, Singh, 2000); employee participation (e.g., $R^2=0.121$, Masood, 2010; $R^2=.04$, Singh, 2000); job security (e.g., $R^2=.376$, Al-Tit, 2016); empowerment (e.g., $R^2=.341$, Al-Tit, 2016; $R^2=.205 < 0.01$, Qadir, 2017); $R^2=.488$, Gao, 2020; $R^2=.03$, Singh, 2000); job analysis and design (e.g., $R^2=0.34$, Mira, Yap & Chan, 2019) and health & safety (e.g., $R^2=.328$, Al-Tit, 2016), while Compensation & incentive management practice has moderate level influence on organizational performance (e.g., $R^2=0.090$, Masood, 2010 and $R^2=.07$, Singh, 2000).

HRM – performance relationship with intermediate (mediating and moderating) variables

HRM – employee performance relationship with intermediate (mediating and moderating) variables

The result presented in table 3 shows that the top mediating variables between HRM and employee performance relationship are job satisfaction (e.g., $r=0.465$, $p=0.00$, Mira & Yap, 2019; $r=.42$ $p = .01$,

Khan, 2019); $r=0.490$, $p=0.00$, Ahmad 2014); $r=0.465$, $p=0.00$, Heffernan, 2016); engagement ($r=0.453$, $p=0.00$, Taib, 2018) and motivation (e.g., $r=.511$, $p=.00$, Qadir, Saeed & Khan, 2017). Moreover, best moderating variables between HRM – employee performance model are individual pay for performance (e.g., $r=0.33$, $p=0.00$, Yang, Huang, Tang, Yang, 2021); work environment (e.g., $r=0.235$, Badriant and Ekhsan, 2020); transformational leadership (e.g., $r=0.21$, $p=0.00$, Almaaitah, Alsafadi, Altahat, and Yousfi, 2020).

HRM – organizational performance relationship with mediating and moderating variables

The HRM- organizational performance relationship is better mediated by job satisfaction (e.g., $r=0.504$, $p=0.00$ (Rahman, Ab Hamid, and Mustaffa, 2018); organizational commitment (e.g. $r=0.437$, $p=0.00$, Torlak, 2018); organizational citizenship behaviour (e.g., $r=0.346$, $p=0.00$, Taamneh, Alsaad and Elrehail, 2018) and motivation (e.g., $r=.358$, $p= 0.00$, Qadir, Saeed & Khan, 2017; $r=.732$, $p=0.0$, Dar, 2014).

Moreover, best moderating variables between HRM – organizational performance model are organizational culture (e.g., $r=0.148$, $p=0.00$, Al-Tit, 2016); creativity climate (e.g., $r=0.165$, $p=0.00$, Van Esch, Wei and Chiang, 2018) and transformational leadership (e.g., $r=0.148$, $p=0.00$, Almaaitah, Alsafadi, Altahat, and Yousfi, 2020).

Table 3: Correlation results of other variables included in HRM-performance models

Variable	Employee performance			Organizational performance r/ships		
	Correlation (r) values	Level of corr.	Kind of r/ship	Correlation (r) values	Level of corr.	Kind of r/ship
Job satisfaction	$r=0.465$, $p=0.00$ (Mira & Yap, 2019); $r=.42$ $p = .01$ (Khan, 2019); $r=0.490$, $p=0.00$ (Ahmad 2014); $r=0.465$, $p=0.00$ (Heffernan, 2016).	Moderate	Mediator	$r=0.504$, $p=0.00$ (Rahman, Ab Hamid, and Mustaffa, 2018).	Mode rate	Mediator
Organizational commitment	$r=0.535$, $p=0.00$ (Torlak, Kuzey, and Ragom, 2018).	Moderate	Mediator	$r=0.437$, $p=0.00$ (Torlak, 2018).	Mode rate	Mediator
Knowledge management	None	None	None	$r=0.182$, $p=0.00$ (Rahman, 2018); $r=0.219$, $p=0.00$ (Al-Tit, 2016).	Low	Mediator
Engagement	$r=0.453$, $p=0.00$ (Taib, 2018).	Moderate	Mediator	None	None	None
Organizational citizenship behv.	None	None	None	$r=0.346$, $p=0.00$ (Taamneh, Alsaad and Elrehail, 2018).	Low	Mediator
Employee competencies	None	None	None	$r=0.185$, $p=0.023$ (Otoo, 2019); $r=0.292$, $p=0.00$ (Van 2018).	Low	Mediator
Well-being	$r=0.21$, $p=0.00$ (Khoreva and Wechtler, 2018).	Low	Mediator	None	None	None
Innovation	None	None	None	$r=0.346$, $p=0.00$ (Riana & Suparna, 2020).	Low	Mediator
Motivation	$r=.511 < 0.01$ (Qadir, Saeed & Khan, 2017).	Moderate	Mediation	$r=.358 < 0.01$ (Qadir, Saeed & Khan, 2017); $r=.732$ ($p < 0.01$) (Dar, 2014).	Mode rate	Mediation
Organizational support	$r=0.34$, $p=0.00$ (Khoreva and Wechtler, 2018).	Low	Mediator	$r=0.31$, $p=0.00$ Waseem and Majid,	Low Low	Moderating

				2017; $r=0.148$, $p=0.01$ (Al-Tit, 2016).		
Creativity climate	None	None	None	$r=0.165$, $p=0.00$ (Van Esch, Wei and Chiang, 2018).	Low	Moderator
Organizational culture	None	None	None	$r=0.148$, $p=0.01$ (Al-Tit, 2016).	Low	Moderator
Transformational leadership	$r=0.21$, $p=0.01$ (Almaaitah, Alsafadi, Altahat, and Yousfi, 2020).	Low	Moderator	$r=0.148$, $p=0.01$ (Almaaitah, Alsafadi, Altahat, and Yousfi, 2020).	Low	Moderator
Management philosophy	None	None	None	$r=0.148$, $p=0.011$ (Ismail, Awawdeh, Al-Hiyari and Jimba, 2020).	Low	Moderator
Individual Performance	None	None	None	$r=0.55$, $p=0.00$ (Masood, 2010).	Low	Moderator
Work environment	$r=0.235$ (Badriantand Ekhsan, 2020).	Low	Moderator	None	None	None
Individual pay for performance	$r=0.33$, $p=0.00$ (Yang, Huang, Tang, Yang, 2021)	Low	Moderate	None	None	None

Source: Own compilation

Table 4: Regression results of other variables included in HRM-performance models

Variable	Employee performance r/ships				Organizational performance r/ships			
	Kind of r/ship	β value	R ² value	Effect size	Kind of r/ship	β value	R ²	Effect size
Job satisfaction	Mediator	$\beta=0.353$, $p=0.00$ (Uddin, 2017); $\beta=0.353$ (Mira, 2019); $\beta=0.423$ (Badriantand, 2020).	R ² =0.405 (Mira, 2019); R ² =.42 (Khan, 2019).	Large	Mediator	$\beta = .25$ (Rahma & Mustaffa, 2018).	R ² = .25 (Rahma & Mustaffa, 2018).	Medium
Knowledge management	None	None	None	None	Mediator	$\beta = .410$ (Al-Tit, 2016).	R ² = .48 (Al-Tit, 2016).	Large
Innovation	None	None	None	None	None	$\beta = 0.22$ (Riana, 2020).	R ² =0.219 (Riana, 2020).	Medium
Motivation	Mediator	$\beta=.783$, $p=0.01$ (Qadir, Saeed & Khan, 2017).	R ² =.261 < 0.01 (Qadir, Saeed & Khan, 2017).	Large	Mediator	$\beta=.440$ (Qadir, 2017; $\beta=.095$ (Dar, 2014)	R ² =.128 (Qadir, 2017; R ² = .291 (Waseem 2017).	Medium
Organizational culture	None	None	None	None	Moderator	$\beta = .117$ (Al-Tit, 2016).	R ² = .46 (Al-Tit, 2016).	Medium
Work environment	Moderator	$\beta=0.423$, $p=.00$ (Badriant, 2020).	R ² =0.423 (Badriant, 2020).	Large	Moderator	$\beta=0.423$, $p=.00$ (Badriant, 2020).	R ² =0.423 (Badriant, 2020).	Moderator
Transformational leadership	Moderator	$\beta=0.21$, $p=0.00$ (Almaaitah, Alsafadi, Altahat, and Yousfi, 2020).	R ² =0.28, (Almaaitah, Alsafadi, Altahat, and Yousfi, 2020).	Large	Moderator	$\beta=0.21$, $p=0.00$ (Almaaitah, Alsafadi, Altahat, and	R ² =0.31 (Almaaitah, Alsafadi, Altahat, and Yousfi,	Moderator

							Yousfi, 2020).	2020).	
Individual pay for performance	Moderate	$\beta=.783$ ($p=0.00$) (Yang, Huang, Tang, Yang, 2021).	$R^2=.38$ (Yang, Huang, Tang, Yang, 2021)	Large	None	None	None	None	None

Source: Own compilation

6. Discussion

This study was undertaken with the aim of comprehensively reviewing HRM literatures and HRM-performance relationship, identifying both moderator and mediator variables, as well as the effect of each thereof, in order to work towards some consensus opinion on what it entails, which is necessary to do research which contribute to an existing body of knowledge. The discussion that follows is thus a synthesis of the findings described above.

The results reveal that HRM practice is frequently used as a predictor of both employee and organizational performance. Regarding to the direct link between HRM practice and employee performance, employee training & development, promotion & career management, performance appraisal & management, employee empowerment practice and job security practices are most effective in directly predicting employee performance.

There is significant relationship between HRM practice and organisational performance. The five HRM practices namely: employee training & development, performance appraisal & management, employee participation and employee empowerment practices are significantly linked to organizational performance.

The HRM-performance model is better bridged by using mediating and/or moderating variables. Job satisfaction, engagement and motivation are most important mediators of the HRM-employee performance relationship. In addition, individual pay for performance, work environment and motivation are important moderating variables between HRM practice and employee performance relationship. The HRM-organizational performance model is better mediated by job satisfaction, organizational commitment, organizational citizenship behaviour and motivation and moderated by organizational culture, creativity climate and transformational leadership.

7. Conclusion

The present study aimed at investigating into the nature of the HRM-performance relationship, identifying both moderator and mediator variables, as well as the effect of each. For this purpose, an extensive desktop review of articles regarding the HRM-performance relationship was conducted, identifying both moderator and mediator variables, as well as the effect of each.

The two major HRM practices, namely: employee training & development and employee empowerment practice are common predictors of both employee and organizational performance. In addition, promotion & career management and job security practices are most effective in directly predicting employee performance, while employee training and participation practices are most potently linked to organizational performance.

Organizational culture, creativity climate and transformational leadership are commonly used moderators between HRM and organizational performance, with organizational culture, having the largest effect. Frequently used mediators were HRM and employee as well as organizational performance, with job satisfaction, having the largest effect. The findings identified the six major HRM practices, namely employee training & development, promotion & career management, performance appraisal & management, employee empowerment, job security, performance appraisal & management and employee participation practices are most potent in directly predicting

performance, as well as the fundamental mechanisms which influence the HRM-performance relationship.

8. Managerial Implications

This study provides valuable implication for managers. First, there is a significant relationship between HRM practice and employee as well as organisational outcomes. Second, HRM practice is frequently used as a predictor of both employee and organizational performance. Third, the HRM-performance model is better bridged by using mediating and/or moderating variables.

9. Acknowledgements

We would like to thank all staff members at the University of South Africa (UNISA) for their very helpful support and assistance at the early stage of this article. We would also like to thank the IBC for giving us the opportunity to participate and publish our article at the 2022 IBC Conference.

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Perceptions Regarding the Role of Government in Managing Farm Worker Equity Share Schemes in South Africa

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Keywords

Agricultural sector; farm worker equity share schemes; government intervention; land reform

Abstract

During the period 1999 to 2009, there has been various studies conducted in South Africa on farm worker equity share schemes, but none focused on the role of government in managing these schemes, hence the focus of this paper. The primary objective of this study was to assess the perceptions of beneficiaries on the role of government in ensuring the success of these schemes. A quantitative research design was employed using a survey by means of self-administered structured questionnaires that was completed during group sessions. Non-probability sampling was used by means of convenience and judgemental sampling. A total of 341 questionnaires were distributed to farmworkers on 20 farms within the designated population. The empirical results showed that farm worker equity share schemes are influenced by government interventions. Hence the need for government to relook at how it has been managing these farm worker equity share schemes in South Africa.

“The equity schemes were introduced by the state as an alternative land reform solution. The aim was to improve the poor socio-economic conditions of farmworkers by creating opportunities for them to acquire shares in a farm’s business or land value. But there has been very little oversight of these projects and government has not properly monitored whether the schemes are benefiting the people they were intended for the farmworkers”. (Daily Maverick, 2019)

1. Introduction

The land dispossession of indigenous people of South Africa by the colonisers resulted to disproportionate allocation of land, where only 13% was given to the African majority and the rest reserved for the minority white population (Lahiff & Li, 2012:3). The agricultural policies at the time focused on food security which gave rise to the larger and mechanised farms that were operated by a few individuals or organisations (Kirsten & van Zyl, 1999:326). Post 1994, the democratically elected government of South Africa introduced land reform programmes intended to transfer 30% of agricultural land in possession of white population to black South Africans within five years (Hall, 2013:157). Some of the initiatives include six programmes for restitution, redistribution and post-settlement support that were introduced in South Africa (Binswanger-Mkhize, 2014:257). That led to the formation of the farm worker equity share schemes in the 1990s (Knight, Lyne & Roth, 2003:1).

Farm worker equity-share schemes are arrangements whereby privately-owned farms are reorganised as companies with the original owner of the farm and the farm workers as shareholders (Knight & Lyne, 2002:2). Government supports such partnerships with hope that the beneficiaries (farm workers with share ownership) would be empowered by the original farm owner to achieve profitable and sustainable production (Tiwana, 2017:3).

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Despite government's ambitious goals of transforming land ownership in the agricultural sector in general within a stipulated period, it has been faced by numerous challenges. By 2014, only less than 10% of the redistribution target had been achieved as opposed to the set target of 30% (Kloppers & Pienaar, 2014:677). One of the contributing factors to the failure to address these challenges faced by emerging farmers and equity share schemes is that such challenges are often incorrectly identified (Khapayi & Celliers, 2016:26). The challenges identified by Khapayi and Celliers (2016:37) were low education levels, lack of farming skills on crop and livestock production, poor management skills, high transportation cost, lack of market information, poor support services from the government, and participating in low remunerative marketing channels. Greenberg (2010:4) distinguishes the two major challenges on the land reform programme, as the speeding up of the transfer of land and support on the productive use of the transferred land.

Considering that the government's ambitious goals have not yet been fulfilled and some of the problems have been identified, it is sufficing to state that there is a need to review the role of government interventions in the performance of these farm worker equity share schemes. Thus, the role of government in managing farm worker equity share schemes in South Africa is the main focus of this paper.

2. Problem Investigated

Since the establishment of the equity share schemes in the 1990s, there have been two government moratoriums, the first in 1999 and second in 2009, supposedly due to poor performance of farm worker equity share schemes (Hall & Cousins, 2018:5, Hall & du Toit, 2014). The government's focus has been on the performance in terms of payment of dividends, where it has been reported that out of 88 equity share schemes at the time, only nine were able to pay out dividends (Cousins, 2016:8) in the range of R200 and R2000 per beneficiary (Hall & Cousins, 2018:5).

It appears that a noticeable government intervention has been limited to instituting moratoriums as opposed to active participation in the monitoring and providing support to the running of the equity share schemes, hence Khapayi and Celliers (2016:37) cited poor support services from the government as one of the challenges. Despite government vested interest in farm worker equity share schemes, limited research has been done regarding the role of government in managing effectively farm worker equity share schemes in South Africa. The role of government cannot be limited to introducing policies, programmes and offering grants, thereafter, assuming that schemes will function effectively without further government intervention or support.

Against this background this paper addresses the following key research questions:

- How do beneficiaries perceive the role of government in managing effectively farm worker equity share schemes in South Africa?
- Are government interventions failing beneficiaries of farm worker equity share schemes?

It is envisaged that this study will contribute immensely to the body of knowledge regarding farm worker equity share schemes in South Africa, particularly regarding the role of government in managing them.

3. Research Objectives

The primary objective of this study is to assess beneficiary perceptions regarding the role of government in managing effectively farm worker equity share schemes in South Africa. The secondary research objectives of this study are intended to make the primary research objective effective, through:

- Reviewing the literature pertaining to farm worker equity share schemes.
- Empirically assessing beneficiary perceptions regarding farm worker equity share schemes in South Africa.
- Providing guidelines and making recommendations to government to assist in improving the performance of these schemes.

4. Proposed Conceptual Model of the Paper and Hypothesis

A conceptual model of beneficiary perceptions regarding the role of government in managing effectively farm worker equity share schemes in South Africa, is shown in Figure 1. This model will be tested in this paper.

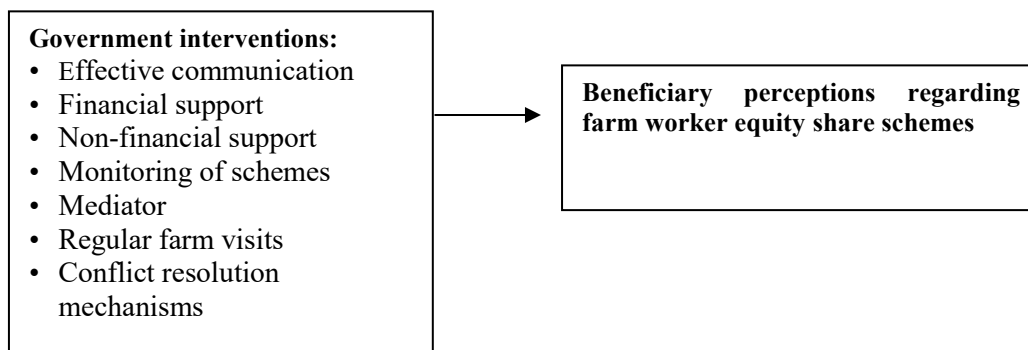


Figure 1: Proposed conceptual model of the paper

Source: Author's own construction

Based on this hypothetical model of beneficiary perceptions regarding the role of government in managing effectively farm worker equity share schemes, the following null-hypothesis is thus formulated:

H0₁: There is no relationship between government intervention and beneficiary perceptions regarding farm worker equity share schemes in South Africa.

5. Literature Review

5.1 History of rural development and land reform in South Africa

Land reform in South Africa began in the 1990s, where the initial focus was on rebalancing land ownership, but later it moved to productive use and agribusiness (Greenberg, 2013:1). Rural development and land reform are critical drivers for economic and social equity, increasing job opportunities, and building stronger social cohesion (Lahiff & Li, 2012:3). Although land reform has an impact on food security, it also affects the maintenance of food production levels, development of small businesses and residential settlement (Hall, 2013:156).

One of the biggest hurdles post the first democratically elected government was dealing with the issue of unequal distribution of land in the country (Kloppers & Pienaar, 2014:677). Despite this, Khapayi and Celliers (2016:25) note that for the past several years, government introduced numerous policies and programmes as well as increased the budget spent on the agricultural sector for the support of emerging farmers. However, agriculture initially was not a high priority for the post-apartheid government, as there were budget cuts (Greenberg, 2010:2).

South African small and emerging farmers are often producing less crops than the available land allows, due to prolonged droughts, longer dry spells, limited water and nutrient availability, degraded soils and inefficient farming practices (Myeni, Moeletsi, Thavhana, Randela & Mokoena, 2019:1).

5.2 Equity share schemes

The first equity share scheme was established in 1992 in Elgin in the Western Cape Province, thereafter, those that followed in all nine provinces in South Africa copied this model (Knight & Lyne, 2002:3). The farm owner, together with farm workers would enter into some agreement and become shareholders, where shareholders would obtain tradable voting and benefit (dividends and capital

gains) rights in proportion to their financial investment obtained from the assistance of government through grants (Knight, Lyne & Roth, 2003:1-2). The equity-share schemes are not limited to farm workers, even neighbouring rural communities could obtain grants and become shareholders (Gray, 2004:80). Government interest in agricultural development is to improve the livelihoods of the rural poor, which mostly was exacerbated by the previous unjust policies (Cloete, 2013:3495).

The grants offered since the 1990s permitted black South African citizens to access land specifically for agricultural purposes and the amounts varied over the years as the programmes revolved, amounting to R16 000, R20 000 and up to R100 000 per beneficiary (Tiwana, 2017:1-2). The larger amounts of grants have stringent requirements, for example, to qualify for a grant of R20 000, the applicant must contribute a minimum of R5 000 in cash, sort of labour towards a sustainable farming enterprise, and R100 000 can be accessed if the beneficiary is able to contribute R400,000 in savings and loan finance (Knight & Lyne, 2002:2).

5.3 Challenges of farm worker equity share schemes

Bless and Higson-Smith (2004:15-16) reviewed previous research studies and noticed that it presented contradictory results or questionable approaches. However, the essence of these studies pointed out that the achievements thus far regarding farm worker equity share schemes in South Africa are dissatisfying and sub-standard – this is evident in the reflections effected by the Department of Rural Development and Land Reform by instituting the moratoriums. The performance of these schemes is limited on the financial gains achieved by the beneficiaries of the equity share schemes (Klaas, 2011:34-35), whilst in reality there could be non-financial benefits as well.

Some argue that regardless of the number of underperforming equity share schemes, the ultimate goal should be to exceed the workers' expectations and minimise or eliminate any unfavourable situations pertaining to the performance of the equity share schemes (Makamure, 2014:25, 64). For government to reap maximum benefit from the equity share schemes it has supported over the years, there is scope for government to play a major role in ensuring the success of these equity share schemes.

5.4 Previous studies on land reform and farm worker equity share schemes

This section only covers a few of the studies conducted on land reform and farm worker equity share schemes in South Africa and the role of government. It provides an overview of four desktop studies and the resulting findings.

Approaches and progress with land reform in South Africa (Kirsten & van Zyl, 1999)

This study tracks the approaches followed for land reform in South Africa with a view to improving the situation created by the previous regime. The study outlines that there are five key lessons to be learnt from international experience regarding land reform: the speed of implementation of the programme; economic viability of the farm models; political acceptability and legitimacy of the programme; clear definition of the role that the public sector can and will play; and land reform is only one part of a comprehensive programme of economic reconstruction.

A crucial point made regarding the last point is that additional services are required to sustain higher productivity. Additional services could be infrastructure, markets, incentives and health services. The recommended approach to land redistribution is a market-assisted approach, as opposed to a public sector operated approach which tends to be bureaucratic and which might introduce conflicting results. This approach recommends government intervention in providing grants in order to facilitate the land reform programme and beneficiaries who buy from willing sellers. Land reform is based on restitution, redistribution and tenure reform. The long start-up time delayed delivery in the land reform process. The conclusions drawn from the implementation were:

- Equity sharing projects should be embarked upon as a (final) part of a process whereby farm workers were upgraded into management systems;
- Trust between owner and workers remain a vital ingredient for a successful partnership;
- High value farming allows a substantial and measurable return to participants within an acceptable time period;

- Continued support and commitment from the existing land owner/manager/farmer is necessary to allow the maintenance of farm income streams;
- Clear entrance and exit rules are required; and
- Business considerations should be the main value system driving deals.

The study concludes by suggesting that land reform has failed in South Africa due to government being the major player, hence, the redistribution targets have not been met (Kirsten & van Zyl, 1999).

Examination of the impact of share equity schemes on beneficiaries in the Western Cape and Mpumalanga (Fast, 1999)

Fast's (1999) study concentrated on the achievements of the expected results by farm workers regarding equity share schemes and the objectives of the land reform programme. The study explored four schemes: one chicken farm, one livestock farm and two fruits farms. The study identified gaps in terms of the establishment of these schemes, such as, lack of clarity to beneficiaries about land reform and housing options; beneficiaries not participating in decision-making pertaining to financial and legal arrangements; and challenges in the assessment of farm value and financial viability. The study further acknowledged the level of education of farm workers as a contributing factor. There is a need to explore these challenges more broadly, rather than focusing on a narrow view of the schemes, so as to achieve certain objectives without acknowledging particular stumbling blocks.

The study revealed that beneficiaries were disappointed with the tangible benefits such as high salaries and improved living conditions. One of the reasons provided for the lack of tangible benefits is the scheme's focus on capital-intensive production, which takes a while to produce results. In order to realise immediate benefits, the study recommends the following:

- Encourage equity schemes that provide for regular cash flow.
- Use Department of Land Affairs funds to subsidise a declining interest rate subsidy.
- Establish equity schemes that specialise in cash crop production. It seems that when equity share schemes are established, farm workers have certain expectations that are not clearly articulated at the beginning, thus creating confusion (Fast, 1999).

Measuring the performance of equity-share schemes in South Africa: A focus on financial criteria (Gray, Lyne & Ferrer, 2004)

This study focused on the financial criteria for equity share schemes and does not address the non-financial aspects. The study states that the success of these schemes is determined by the redistribution of wealth, worker empowerment, retaining or attracting quality management, creditworthiness, improved worker productivity and power relations, as well as provision for ownership and control to be fully transferred to previously disadvantaged shareholders. It concluded that no single study has adequately assessed the performance of equity share schemes in terms of a comprehensive set of criteria that objectively measures the broader goals of agrarian reform. Gray *et al.* (2004) state that it is important to develop a holistic approach for measuring the performance of these schemes in order to gauge, monitor and identify reasons for their success or failure. The results of this study indicate that the former Department of Land Affairs is lagging behind in terms of research and keeping track of existing share schemes.

The focus of the study conducted by Gray *et al.* (2004) on financial performance includes profitability, solvency, liquidity, risk, efficiency and growth status. The study was restricted to four of the seven equity share schemes in the Western Cape Province, from 2002 to 2003. The study only covered financial matters and overlooked non-financial matters. The study's intention was to develop a framework within which to gauge and monitor the financial performance of share schemes. It was discovered that the four equity share schemes performed badly due to adverse market conditions (Gray *et al.*, 2004).

Willing-buyer-willing-seller: South Africa's failed experiment in market-led agrarian reform (Lahiff, 2007)

This study reviewed the approach adopted by Government for land reform where willing buyers negotiate with willing sellers. The study suggests that the slow progress of land reform is worsened by the lack of mobilisation and militancy amongst the rural poor and the landless. Equity share schemes, which some view as the success story of land reform, created a gap between the owner and the workers and have produced no benefits for the workers. It was mentioned that good quality land is sold at an auction or private contract within a short space of time, as the process of buying land through land reform takes longer. The study assumes that the land made available for equity share schemes is because either the owner is really committed to land reform or the land cannot be disposed of at an open market due to poor location or poor quality of land. In the study, various points of a well-functioning system were mentioned as important for consideration in assessing share schemes (Lahiff, 2007).

5.5 Government interventions

Government intervention refers to regulatory actions taken by government in order to affect or interfere in decisions made by individuals, groups or organisations regarding social and economic matters (Belsky & Wacter (2010); Huang & Du (2016); Olowa & Olowa (2014)). Government intervention in any sector including the agricultural sector is to achieve desired policy goals (Ali & Khan, 2012:103). The intervention may include among others the efficiency increase of agricultural production; protection of farmers' income; national food safety and security, and external effects and public goods in agriculture (Jelić, Đurović, Radojčić & Aničić, 2014:174).

Government intervention can lead to either positive or negative outcome, depending on the circumstances; however, the experience of government intervention when there was a moratorium of the equity share schemes in 1999, resulted in reduced number of government-assisted transfers during 2000 and 2001, with an increase in 2002 (Lyne & Roth, 2004:11). This is due to the fact that grants are from government, and when there is a moratorium there are no grants offered. In some instances, government intervention in one of the competing sectors can have unintended consequences, as was the case during 1960s-1970s, when government intervention in favour of industrialisation led to the neglect of agriculture, which resulted to poor growth performance, and low labour productivity in the informal service sector (Badiane & Makombe, 2014:3-5).

The economists argue that in welfare economics, government intervention results to inefficient outcomes and generates a loss in social welfare. However, when there is market failure such as instability of agricultural markets, government intervention is justifiable to correct market failure (Sakai, Managi, Vitanov & Demura, 2007:254). The same can be said about the equity share schemes, where government intervention is justifiable considering that for several years the equity share schemes have not performed to the acceptable standard. This is supported by Aliyeva, Huseynova, Babayeva, Huseynova, Nasirova & Hasanzade (2019:12-13) who state that the economic sector where government intervenes is the agricultural sector, where restrictive, regulatory, and supportive interventions are applied.

This study provided an investigation into the role of government in managing effectively farm worker equity share schemes in South Africa.

6. Research Design and Methodology

6.1 Research paradigm

The empirical study followed a positivistic research paradigm by means of a quantitative research approach. This enabled the collection of quantitative data from the responses provided by farm workers regarding the measuring instrument.

6.2 Research Approach

Given the nature of the study, the research approaches followed in this study are exploratory and descriptive in nature. The aim was to explore a relatively new and under-explored area in the field of

farm worker equity schemes in South Africa (especially in the light of the moratorium placed on these schemes) and describing beneficiary perceptions regarding farm worker equity share schemes in South Africa.

6.3 Population

The population of this study is all existing farm worker equity share schemes operating in South Africa. There is no updated published information on registered farm worker equity share schemes in South Africa making it difficult to determine the exact population of this study. It was estimated that about 88 or more farm worker equity share schemes exist as per the information contained in the confidential study report produced in 2010 (Hall & du Toit, 2014). This is comparable to the figure of 88 reported by Hall and Cousins (2018:5).

6.4 Sampling

The sampling for this study was guided among other by the analyses to be employed in this study. Yong and Pearce (2013:80) state that factor analysis requires a sample size of at least 300 participants. As the population was self-created (no published data base) and some information was outdated, non-probability sampling was used. Convenience and purposive sampling were used to select the 20 farms for participation in this study. Ideally, a total of 15 farm workers were targeted per farm to whom the measuring instrument was administered. However, due to a variation in these farm worker equity share schemes, less than 15 workers were selected on some farms while more than 15 workers were selected in others, resulting in a total sample size of 341 farm workers.

6.5 Data collection

The secondary sources for the literature review were obtained through desktop research using journal articles, textbooks and the Internet. The primary data for this study was obtained using the survey method by means of self-administered structured questionnaires used in group sessions. The purpose was to assist farm workers to understand and complete the structured questionnaire. The farms identified and willing to participate in this study were in the Eastern Cape, Gauteng, Mpumalanga and Western Cape Provinces.

6.6 Questionnaire design

The questionnaire consisted of three sections.

- Section A assessed the impact of government intervention on beneficiaries' perceptions regarding farm worker equity share schemes in South Africa. A seven-point ordinal scale ranging from strongly agree to strongly disagree was used.
- Section B assessed beneficiary perceptions regarding farm worker equity share schemes, using a seven-point ordinal scale ranging from strongly agree to strongly disagree.
- Section C used nominal-scaled questions to solicit background information from the respondents (demographic characteristics) such as gender, age, ethnic group, educational background and employment level.

6.7 Data analysis

Data obtained was transferred to an Excel spread sheet and analysed by means of the Statistica computer programme. Various statistical methods are used in this study. The measuring instrument was assessed for both validity and reliability. Face and content validity were assessed through a pilot study and expert judgement from researchers in the field of management, ethics and statistics. Exploratory factor analysis was used to assess construct validity through both convergent and discriminant validity. A cut-off point of 0.4 was used and at least three items needed to load per factor in order to be regarded as acceptable. Cronbach's alpha coefficient was used to assess the internal reliability of the study variables. Regression and correlation analysis were used to test relationships between the dependent and independent variables and to test the stated null-hypothesis of the study.

7. Results and Findings

7.1 Demographical profile of respondents

Table 1 shows the demographic profile of respondents.

Table 1: Demographical profile of respondents

Demographics	Range	%
Gender	Male	57
	Female	41
	No answer given	2
Age (Years)	below 16	2
	16 – 20	7
	21 – 30	41
	31 – 40	20
	41 – 50	18
	51 – 60	8
	Above 60	2
	No answer given	2
Scheme Benefits	Only Dividends	72
	Only Assets	9
	Dividends & Assets	14
	No answer given	5
Type of Farming	Wine	24
	Dairy	2
	Summer Crops	12
	Winter Crops	1
	Oilseed Crops	1
	Sugar Cane	0
	Deciduous Fruit	0
	Subtropical Fruit	1
	Citrus Fruit	56
	Animal Production	1
	Dairy Production	0
	Vegetables	1
	Other	0
	No answer given	3
Employment Contract	Full-Time	49
	Part-Time	8
	Seasonal	17
	Casual	1
	Other	22
	No answer given	3
Employment Period (Years)	1 – 5	48
	6 – 10	17
	11 – 15	10
	16 – 20	10
	21 and more	12
	No answer given	3
Existence of Scheme (Years)	1 – 4	23
	5 – 8	13
	9 – 12	35
	13 – 16	24
	17 and more	2
	No answer given	3

Source: Author's own construction

The results show that the majority of the respondents were male (57%) and between 21 and 30 years (41%). About 72% of the schemes only paid dividends and 56% of the participating workers were employed on citrus farms. Only 49% of the participants were full time employees and 48% had been

in employment for a period between one and five years. About 35% of the schemes had been in operation between nine and 12 years and 55% were no longer members of these schemes.

7.2 Exploratory factor analysis and reliability testing results

An exploratory factor analysis was done and the results is provided in Table 2. Factor loadings of greater than 0.4 were considered significant.

Table 2: EFA results and Cronbach's alpha coefficients of the latent variables

Latent Variable	Items	Minimum factor loadings	Maximum factor loadings	Cronbach's alpha
Government intervention	GI1 – GI5	0.48	0.77	0.76
Perceptions regarding farmworker equity share schemes	FES1 – FES8	0.52	0.78	0.84

Source: Author's Own Construction

The EFA results clearly shows the minimum and maximum factor loadings and that all variables have loadings above 0.40. All the variables used for government intervention (GI1-5) loaded onto one factor. Eight of the 15 variables used to assess validity of perceptions regarding farm worker equity schemes (FES1-8) loaded onto one factor with loadings above 0.40. Table 1 further indicates that both variables/factors are internally reliable and Cronbach's alpha values above 0.70 (0.76 and 0.84 respectively).

7.3 Regression analysis

Table 3 depicts the regression analysis results of the influence of the government intervention on perceptions regarding farm worker equity share schemes.

Table 3: Regression analysis: Influence of government intervention on farm worker equity share schemes

Regression summary for government intervention on farm worker equity share schemes						
Parameter	Beta b*	Std. Error	B	Std Error	T value	P-value
GI	0.292	0.053	0.285	0.052	5.451	0.000***
*** = p < 0.001						

Source: Author's own construction

Table 3 shows that government intervention ($b = 0.285$, $p < 0.001$) is positively related to farm worker equity share schemes with a coefficient of 0.292. This means that the role of government can help achieve the intended objectives of equity share schemes, where farm workers understand the formation of the equity share schemes and the kind of support to be provided by government for the benefit of farm workers. Farm workers feel that government should timeously monitor the implementation of equity share scheme policies based on a legal framework. The higher the t-value, the stronger the impact on farm worker equity share schemes. In this case, government intervention with the t-value of 5.451 has a moderate impact.

7.4 Findings on hypothesised relationship

Based on the results, the relationship between government intervention and farm worker equity share schemes, the following hypothesis was rejected:

H_{O1} *There is no relationship between government intervention and beneficiary perceptions regarding farm worker equity share schemes in South Africa.*

There is thus a statistically significant positive relationship between government intervention and beneficiaries' perceptions regarding farm worker equity share schemes ($p < 0.001$) with $r = 0.292$ and t value ($t=5.451$).

8. Managerial Implications

Government intervention is important and happens in different forms, however, as far the land market is considered, Kloppers and Pienaar (2014:692-693) state that the new government made a commitment not to intervene in the land market, but instead of getting involved in the purchase of land for redistribution, the government to adhere to the principle of "willing-buyer, willing-seller", by providing resources to finance market-led redistribution transactions without government becoming the owner of the land. However, government has realised the weaknesses of this principle, hence, they have considered abolishing it and moving towards a more aggressive approach of expropriation (Kloppers & Pienaar, 2014:693). A study conducted by Xaba and Roodt (2016) mentions lack of support for farmers once they become landowners as the common cause of failure, because government neglected them.

The farm workers believe that government intervention is important for the establishment of equity share schemes. This is so because when the government is involved in equity share schemes, the farm workers feel protected in the sense that there is someone to ensure that their expectations are fulfilled. However, if there is no government presence, farm workers feel that they are on their own in realising their expectations. The presence of government is not enough, as its support should be felt. In the case of the Solms-Delta farm, which implemented an equity share schemes, Jordan (2017:8) reports that it experienced cash flow problems due to delayed government promises for financial support. This farm is a good example of the importance of government intervention, not just government presence without the necessary support. Jordan (2017:8) reported that Minister Nkwinti of the Department of Rural Development and Land Reform visited Solms-Delta farm and commended the owners for setting a land reform benchmark. Furthermore, the government agreed to fund a business turnaround strategy to make the farm profitable, however, these funds were delayed.

9. Conclusions and Recommendations

This study highlighted the importance of government intervention in influencing perceptions regarding farm worker equity share schemes. The success of the equity share schemes relies on a team effort from all relevant stakeholders in the industry, including active participation of government. The empirical finding specifically highlighted the following statistically significant finding:

The results indicated that there is a significant relationship between government intervention and beneficiaries' perceptions regarding farm worker equity share schemes in South Africa (H_0 rejected). Without the active involvement of government through various initiatives, programmes and policy formulation, these schemes seemed to be doomed for failure.

The findings of this study further revealed that government intervention should include government officials explaining land reform to the beneficiaries of equity share schemes and monitoring the implementation of equity share scheme policies based on a legal framework. This is supported by Tom (2006:4), who states that policy makers have a duty to include a comprehensive monitoring programme and to perform an evaluation of equity share schemes. The empirical findings of the study also revealed that beneficiaries believe that they participate effectively in equity share schemes when government eradicates corrupt practices in order to promote the effective management of the equity share scheme.

Table 4 provides some general guidelines to stakeholders on the role of government in managing effectively farm worker equity share schemes in South Africa.

Table 4: General guidelines of government’s role regarding farm worker equity share schemes

Recommendations regarding government interventions:	
1	Regulatory actions taken by government should affect or interfere in decisions made by individuals, groups or organisations regarding social and economic matters.
2	Government officials should clearly explain land reform to the beneficiaries of the equity share scheme in understandable language.
3	Government should provide additional financial support for the equity share scheme to ensure its financial sustainability.
4	Government should also provide non-financial support to scheme members (e.g. conflict resolution and mobile medical facilities).
5	Government should monitor the implementation of equity share scheme policies based on a legal framework.
6	Government can be a mediator and leader within, or the creator of, an enabling environment for equity share schemes – important that government visibility is recognised all the time.
7	A mistake that government should not make is to visit farms with equity share schemes only once and disappear after its establishment.
8	It is important that government contacts equity share schemes regularly in order to monitor progress and to understand the challenges in place to meet the set targets for equity share schemes and, where possible, to work together to resolve these challenges.
9	The Department of Agriculture, Land Reform and Rural Development should engage in on-going research and keeping track of existing share schemes with an updated database.
10	Government should strive to provide clarity to beneficiaries about land reform and housing options; allow participants in decision-making pertaining to financial and legal arrangements; and assist with challenges regarding the assessment of farm value and financial viability.

Source: Author’s own construction

The following extract seems appropriate to conclude this paper with:

“When properly implemented farm worker equity scheme initiatives could provide a path to farm workers sharing in equity growth – but only if managed correctly, and if they include substantial provisions for increasing farm worker representation ... concerns raised by farm workers suggest that these are still lacking ... also highlight the severe shortcomings of policy, further exacerbated by government’s poor monitoring of the schemes. This absence raises questions about the government’s commitment towards improving the farm workers’ lives, and raises questions about the future of farm workers who remain marginalised, and who continue to suffer exploitation and evictions despite laws and policies in place that are meant to avoid it ... government must respond to the demands listed in the memorandum and ensure that laws are enforced to respond to the farm workers’ primary demands, which include secured tenure, decent living conditions, improved wages, enforcement of the minimum wage, and access to land for their own use.” (Beerwinkel, 2019)

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Retaining Intellectual Capital: Technical Knowledge and Skills Transfer at an Automotive Component Manufacturer

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Keywords

automotive industry;
intellectual capital;
knowledge and skills
transfer; succession
planning; talent
management

Abstract

Organisational sustainability and success are dependent on the retention of intellectual capital. If employees exit without a strategy to ensure the transfer of intellectual capital, knowledge is lost, and this may be difficult or even impossible to recover. This loss can inhibit competitive advantage, stifle organisational agility and lower profit margins.

In the South African automotive sector, the loss of highly experienced technical experts is compounded by a shortage of skilled younger employees. Succession planning is often used to ensure knowledge and skills transfer. When implemented effectively, it creates an internal pool of skilled and talented individuals, while preserving institutional knowledge.

This quantitative and survey-based study, undertaken in partial fulfilment of the degree Master of Business Administration, was conducted in Gqeberha, located in the Eastern Cape province of South Africa. Technical knowledge and skills transfer was investigated in an automotive component manufacturing plant (n=168). The findings of the study revealed some positive experiences of the transfer process. Further, talent management, succession planning, trainee characteristics, training design and work environment all demonstrated positive correlations with the transfer process, with succession planning and work environment demonstrating significant predictive relationships.

1. Introduction

Intellectual capital is the organisation's invisible source of competitive advantage (Kamukama, 2013) and represented by the collective knowledge and experience of employees (Song & Chermach, 2008). However, many organisations face the challenge of losing intellectual capital due to employee layoffs, staff turnover, retirement, mergers and acquisitions, and headhunting (Makhubela & Ngoepe, 2018). When employees exit it is important that strategies are in place to ensure the transfer of invaluable intellectual capital (Khumalo, 2012).

The focus of this study is on the South African automotive sector which faces skills shortages (Sowetanlive, 2022) linked to the work of fitters, artisans, technicians, millwrights, electricians,

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toolmakers, process and quality engineers, body builders and painters, amongst others (Laseinde & Kanakana, 2017). In addition to the inevitable turnover of employees (Ali & Mehreen, 2019), the aging workforce presents a global concern linked to the retention of intellectual capital (Makhubela & Ngoepe, 2018). This is partly manifested in the retirement of the “Baby Boomer” generation (Ansara & Davids, 2018). This “brain drain” is amplified by the changing work and career behaviours and preferences of younger generations as well as general lack of new talent entering the automotive industry over the past two decades (Calitz & Cullen, 2017).

When employees who possess critical skills leave the organisation, they take with them their accumulated knowledge about past research, developmental project successes and failures, resources, and organisational procedures. Unfortunately, it is only when these employees leave that organisations realise the importance of this knowledge (Makhubela & Ngoepe, 2018). Further, concern is expressed in relation to the less experienced employees who step into the role of exiting employees (Burmeister & Deller, 2016). Within the automotive sector the loss of organisational knowledge has been found to contribute to errors, duplication of work and additional investments in training and development (Calitz & Cullen, 2017). At the same time, the competitiveness of the automotive industry is critical to South Africa’s economic sustainability, with the sector consistently contributing over 7% to South Africa’s GDP (Laseinde & Kanakana, 2017).

While interventions, such as the use of part time contracts and the services of consultants have been utilised to bridge the skills gap, these are short-term and unsustainable alternatives. Short-term contract rates are costly and do not include a clause for knowledge transfer. In addition, consultants deliver work and leave without a long-lasting impact, again at a greater expense (Levy, 2011; Liebowitz, 2008). Aggressive recruiting is another response to skilled trade shortages; however, this is also regarded as a short-term solution (Burkett, 2019). For this reason, it is important that organisations, as part of a broader knowledge management framework, preserve institutional knowledge through developing existing talent and implementing effective knowledge and skills transfer mechanisms.

Knowledge can be broadly described as explicit (know-that) or tacit (know-how). The transfer and retention of knowledge is made possible through strategies involving education, training, developing a community of practice, utilising professional networks, documenting processes, and using advanced software to capture work processes, best practices, case studies and job manuals (Makhubela & Ngoepe, 2018; Mazorodze & Buckley, 2020). While it is important to retain both forms of knowledge, tacit knowledge is more difficult to transfer as it represents knowledge acquired over years of experience (Makhubela & Ngoepe, 2018). The knowledge transfer process is facilitated through succession planning which entails developing employees to fill key positions in the future. Succession planning has been identified as focusing particularly on the knowledge transfer necessitated by an aging workforce (Mazorodze & Buckley, 2020) and ensuring the availability of internal resources to fill key positions (Ali & Mehreen, 2019).

This study focused on the retention of intellectual capital, and specifically on employee experiences of the technical knowledge and skills transfer process. The study was conducted in an automotive component manufacturing company based in Gqeberha, which is located in the Eastern Cape province of South Africa. In this organisation succession planning was deployed as a vehicle to ensure the transfer of knowledge and skills. It was thus deemed important to examine employee experiences of succession planning and whether it was perceived to positively influence the transfer process. Further, as succession planning frequently forms part of a broader talent management strategy, it was also important to consider employee experiences of talent management. Finally, Baldwin and Ford (1988) identified training input factors that have an influence on the transfer process (Blume, Ford, Surface & Olenick (2019), these being trainee characteristics, training design and work environment factors. This study further sought to examine the role of these variables in promoting the technical knowledge and skills transfer process.

1.1 Study aim and objectives

The main aim of the study was to investigate the retention of intellectual capital through exploring employee experiences of technical knowledge and skills transfer at an automotive component manufacturer. Based on this primary aim the research objectives were to determine:

- i. employee experiences of the technical knowledge and skills transfer process
- ii. employee experiences of talent management and succession planning.
- iii. whether experiences of talent management and succession planning influenced the technical knowledge and skills transfer process
- iv. whether the training input factors of trainee characteristics, training design and work environment influenced the technical knowledge and skills transfer process.

Based on the main aim and objectives of the study, the technical knowledge and skills transfer process was identified as the dependent variable, and talent management, succession planning, trainee characteristics, training design and work environment as the independent variables.

2. Methodology

2.1 Research approach

The study was conducted from a positivistic paradigm with the assumption that social phenomena can be objectively explored through measurement and analysis of a sample and generalisations made to the broader population of interest. The phenomena under study was the retention of intellectual capital, in particular employee experiences of technical knowledge and skills transfer in the automotive manufacturing sector. The study adopted a descriptive research design with a view to providing numeric descriptions of the perceptions of respondents (Creswell, 2014). Further, a correlational approach was implemented to explore for relationships between the study variables (Bryman, Bell & Hirschsohn, 2021).

2.2 Research method

A quantitative research approach was adopted with a structured questionnaire in form of a self-administered survey as the data collection tool. This approach was deemed appropriate as it allowed for the collection of the data that could be analysed to describe and explain the phenomenon under study. This is achieved via the quantitative method through measuring constructs and testing relationships among variables (Leavy, 2017).

2.3 Population, sample and data collection

The target population for this study was 300 technical employees at an automotive company based in Gqeberha, located in the Eastern Cape province of South Africa. These employees were identified as potential respondents by the company's human resource department. Prior to data collection ethical clearance was obtained from the university from where the study was conducted (ethics approval reference number H20-BES-BUS-057). Thereafter, permission to conduct the study was applied for and granted by the company. The researcher was provided with a list of the email addresses of the potential respondents. The survey was forwarded via email under a covering letter to these employees who were invited to participate on a voluntary basis. The completed questionnaire was returned via email to the researcher. A final sample of 168 was achieved, representing a 56% response rate. A non-probability convenience sampling approach was thus adopted. No identifying information such as name or identity number was requested in the survey, and no record was maintained of individual participation in the study; hence confidentiality was ensured.

2.4 Measuring instrument

In addition to gathering demographic information, the survey comprised six scales, these being experiences with the technical knowledge and skills transfer process, talent management, and succession planning; and the three training input factors of trainee characteristics, training design and work environment. In developing suitable items for the scales linked to the transfer process, talent management and succession planning, reference was made to Massingham (2018), Burmeister (2016), Calitz and Cullen (2017) and Blume et al (2019), amongst others. For the scale items linked to the

training input subscales, the Baldwin and Ford (1988) model was consulted (Grossman & Salas, 2011; Homklin, Takahashi & Techakanot, 2014; Nazli et al, 2015; Sahoo & Mishra, 2019; Wen & Lin, 2014). The guidelines of Babbie and Mouton (2015) were considered in the construction of the questionnaire. The scale items were accompanied by a five-point Likert-type response scale ranging from “strongly disagree” (1) to “strongly agree” (5), with a midpoint (3) allowing for a “neutral” response option.

2.5 Validity and reliability considerations

The validity of the questionnaire was achieved using face, content, and construct validity (Bryman, et al, 2021). Face and content validity were ensured through scrutiny of the questionnaire by a senior academic well-versed in the concept of knowledge and skills transfer. Construct validity was ensured by developing the questionnaire based on the literature review. The internal reliability of the measuring instrument was determined by calculating Cronbach’s alpha coefficients (Bryman, et al, 2021). The coefficients resulting from this analysis ranged between 0.65 and 0.85. (Table 1), indicating fair to excellent internal reliability (Zikmund, Babin, Carr & Griffin, 2013).

Table 1: Cronbach’s alpha coefficients: Reliability of the measuring instrument (n=168)

Variable	Cronbach’s Alpha
Technical knowledge and skills transfer process	0.73
Talent management	0.84
Succession planning	0.85
Trainee characteristics	0.77
Training design	0.65
Work environment	0.80

3. Literature Review

3.1 Retaining intellectual capital through knowledge and skills transfer

Intellectual property leakage has been linked to a lack of organisational knowledge management strategies (Mazorodze & Buckley, 2020). When staff exit, intellectual capital is lost, and a knowledge gap is created. This loss can influence the agility of the organisation (Samani, Sadeghiyan, Keshavarz & Ziglari, 2017), reduce organisational output and productivity, undermine organisational strategy, and increase risk (Massingham, 2018). It is therefore important that organisations implement knowledge management strategies to ensure effective knowledge transfer. While this is essential for almost every organisation, Burmeister and Deller (2016) highlight that it is especially important when the workforce is “skewed” towards knowledge residing in those close to retirement age.

In setting a strategy to mitigate knowledge loss when employees exit it is important to set clear and relevant objectives. To this end it is important to address questions in relation to whose knowledge, if lost, would pose a threat to the functioning and performance of the organisation (Martins, 2010). This requires the identification of key roles and the development of knowledge and skills profiles associated with the holders of these roles. A further question concerns the nature of the knowledge to be retained. Knowledge can be broadly defined as explicit or tacit in nature (Burmeister & Deller, 2016). Table 2 presents a distinction between explicit and tacit knowledge as originally advanced by Polanyi (1966).

Table 2: Distinction between tacit and explicit knowledge

Explicit knowledge	Tacit knowledge
Objective, rational and technical	Subjective, cognitive, experiential learning
Structured	Personal
Context independent	Context sensitive/specific
Fixed content	Dynamically created
Externalised	Internalised
Easy to codify	Difficult to capture and codify
Easy to share	Difficult to share
Exists in high volumes	Has high value
Easily documented	Hard to document
Easily transferred/taught/learned	Hard to transfer/teach/learn
	Involves a lot of human interpretation

Source: Tantisuwankul, Nugroho, Kula, Hata, Rungsawang, Leelaprute & Matsumoto (2019)

Explicit knowledge is described as unambiguous information that can be documented and retained for transfer purposes in the form of reports, documents, books, memos, training manuals or stored in archives. It is knowledge that is easy to identify and articulate and therefore easy to share and use (Tantisuwankul, Nugroho, Kula, Hata, Rungsawang, Leelaprute & Matsumoto, 2019). Examples of explicit knowledge include following standard operating procedures or using an instruction manual. Tacit knowledge, which resides in an individual's mind, is deeply rooted in an individual's experiences, ideals, values, and emotions. It is therefore "hidden" and difficult to explain, access and use. Examples include the ability to innovate on the job or be a good leader. It is thus by nature implicit and ambiguous and cannot be overtly shared. However, tacit knowledge can be transferred through processes like mentoring and coaching (Mazorodze & Buckley, 2020).

With knowledge retention, the importance of tacit knowledge is emphasised as it is particularly valuable to the organisation (Burmeister & Deller, 2016). It is accumulated over many years of experience and practice (Makhubela & Ngoepe, 2018) and includes knowledge about the industry, customers, products, and services. Employees possessing high levels of tacit knowledge are typically identified as those with task-related problem-solving skills and a good understanding of the organisational culture, politics and general functioning, processes, and systems. Further, they develop internal and external networks over time which allows them to connect different knowledge sources within an organisation (Burmeister & Deller, 2016).

Massingham (2018) highlights that when valuable knowledge exits it can influence the organisation in three ways. First, there is the impact on employees who remain. This impact could be psychological and manifest in the form of anxiety, stress, job insecurity or anger, or experienced as a work disruption in the form of an increased workload or lost social network. Second, there is the loss of subject matter expertise leading to a loss of know-how. Third is the impact on organisational capability when the knowledge required for innovation, problem-solving and creativity is lost. If organisations are unable to retain exiting employees' knowledge, remaining employees will not be able to learn from their experiences. Therefore, to avoid "reinventing the wheel" it is important to retain or capture the knowledge of experienced employees before they leave (Makhubela & Ngoepe, 2018).

Knowledge retention is dependent on the successful transfer of knowledge (Burmeister & Deller, 2016). Knowledge transfer refers to the knowledge exchange that occurs between individuals or groups of individuals. It can also occur from individuals to explicit sources, and between a group and the organisation (Cepeda-Carrion, Martelo-Landroguez, Leal-Rodríguez & Leal-Millán, 2016). Knowledge transfer is defined as any method employed to recreate existing knowledge in a new setting. It is further elucidated as the way in which incumbent employees share their skills with less experienced employees to ensure their future success in the incumbents or related positions (Singh &

Premarajan, 2007). This can include the sharing of good work practices and ways to solve problems (Margherita & Bua, 2021).

While knowledge transfer is the process through which one social unit learns from another or is influenced by the experience of another unit (Argote & Fahrenkopf, 2016), transfer only takes place when employees are able to successfully use the new skills, expertise, techniques and behaviours attained in new contexts (Burmeister & Deller, 2016). Transfer therefore refers to the ability to use, maintain and generalise learned knowledge, skills, and attitudes to facilitate effective performance (Blume, et al., 2019).

There are a variety of transfer activities and tools that can be used as part of a knowledge retention strategy. These include communities of practice, succession planning, coaching, storytelling, knowledge repositories, mentoring and job rotation (Mazorodze & Buckley, 2020). Many of these form part of organisational talent management approaches and strategies. For this reason, it is important to consider the role of talent management in retaining organisational knowledge

3.2 The role of talent management in retaining organisational knowledge

Organisations compete in a talent economy that is reliant on the information, networks, and knowledge of its employees. Organisational talent describes those high performing and high potential employees who contribute significantly to current and future organisational performance. Talent describes a set of skills, abilities, experience, mastery, knowledge, and potential for development (Mohammed, Gururajan & Hafeez-Baig, 2017).

Broadly defined, talent management deals with the attraction, development, and retention of organisational talent, while knowledge management refers to the creation, application, capture, storage, dissemination, and organisation of knowledge (Mohammed, et al, 2017). Shabane (2017) maintains that organisations can benefit from integrating talent management and knowledge management. To this end talent management should focus on preserving knowledge. Königová and Urbancová (2012) highlight the benefits of integration as including facilitation of the identification of talented and knowledgeable employees; improved staff retention and knowledge preservation, including when key employees exit; enhanced staff development; and improved organisational image and performance.

Both HR and line managers are involved in driving talent management processes. In a study conducted by Tafti, Mahmoudsalehi and Amiri (2017) in the Iranian automotive sector, managerial challenges and barriers was identified as a factor mitigating against the success of talent management practices. This included a lack of involvement and cooperation among managers in implementing talent management processes, and a lack of understanding about the importance and significance of talent management. Tafti et al (2017) further identified structural challenges and barriers including a lack of integrated HR systems, a lack of alignment between HR and business strategies and a lack of an integrated approach to talent management. These findings suggest the importance of HR and line management working together to identify and address specific barriers and challenges to ensure effective talent management practices. In this way talent management will assist in with knowledge retention.

3.3 Succession planning

Organisations have adopted succession planning as a vehicle to ensure knowledge transfer and retention (Ejakpomewhe, 2017). Succession planning can be defined as a systematic and long-term process in which the goals, needs and roles of the organisation are determined, and individuals or groups of employees prepared for responsibilities linked to retirement, promotion and resignation (Ali & Mehreen, 2019). Succession planning focuses on retaining and developing intellectual capital for the future (Rothwell, 2011).

Organisations need to be prepared for the inevitable and unavoidable replacement of key employees (Simoneaux & Stroud, 2014) Succession planning allows the organisation to respond to skills

shortages by developing a durable pool of internal talent within the ranks of less experienced employees (Rothwell, 2011). Organisations that implement succession planning that promotes tacit knowledge transfer are seen to improve bench strength. Bench strength describes the organisation's ability to promote employees from within, as opposed to recruiting from outside (Rothwell, Jackson, Ressler, Jones & Brown, 2015).

Succession planning frequently involves the use of mentoring and coaching to share technical and organisational knowledge and skills (Tarus, 2014). Mentoring is a process whereby a trusted and knowledgeable mentor provides guidance to a mentee over a long period of time (Jakubik, Eliades, Weese & Huth, 2016). In this process the mentor (source) transfers knowledge and expertise through building a relationship with the mentee (recipient) (Brondyk & Searby, 2013). In this way the mentee builds skills, becomes more efficient in the execution of his/her current job, and is better prepared for a future position. Through ensuring "future fit" internal candidates, mentoring aids in developing and sustaining institutional knowledge (Crumpton, 2014). Coaching is used as a vehicle of knowledge transfer in highly technical knowledge organisations as it facilitates training transfer from theory to practice (Ogunyomi, 2013). It is regarded as an effective method of promoting efficiency (Rothwell, et al., 2015) and enhances the performance of teams, groups, or individuals (Grover & Furnham, 2016).

3.4 Training input factors

While there is considerable investment in employee training programmes, research suggests that only a small percentage of acquired competencies are transferred to the work environment. Estimates indicate this to be less than 10% of training and development expenditure (Ma, Bai, Bai, Ma, Yang & Li, 2018). It is thus important that factors that facilitate or inhibit the transfer of training are identified (Yaqub, Singh & Dutta, 2020). Baldwin and Ford (1988) provided a model that identifies training input factors that influence the transfer process, these being trainee characteristics, training design and work environment (Blume, et al, 2019; Ma, et al, 2018; Suleiman, Dassanayake & Othman, 2018).

3.4.1 Trainee characteristics

The trainee characteristics that have shown the strongest and most consistent relationships with transfer are cognitive ability, self-efficacy, motivation, and perceived utility of training (Grossman & Salas, 2011). People with high cognitive ability are better able to process, retain and generalise trained skills (Blume, et al., 2019). Self-efficacy, which is conceptualised in the social learning theory of Bandura (1982), relates to the judgements that people make about their ability to perform a task successfully. It is the belief that people have in their ability to mobilise motivation, cognitive resources, and action to control the direction of events in their lives (Sahoo & Mishra, 2019). People with high self-efficacy tend to set more challenging goals for themselves and therefore benefit more from training (Wen & Lin, 2014). This is because they are motivated to acquire knowledge and subsequently make use of this knowledge (Yaqub, Singh & Dutta, 2020). Motivation is central to training transfer. Grossman and Salas (2011) indicate that it is important for employees to remain motivated throughout the training and development process to enable transfer to occur, believe that training will increase their performance, and believe that performance improvements will benefit them. Motivation to transfer is thus linked to motivation to learn (Wen & Lin, 2014). People who perceive training as valuable and useful are more likely to apply new competencies on the job and will be more motivated to learn (Mozammel, 2019).

3.4.2 Training design

In terms of training design, behavioural modelling, error management and a realistic training environment have been found to positively influence the transfer of learning (Grossman & Salas, 2011). Behavioural modelling provides opportunities for trainees to observe and practice learned skills and receive feedback, which aids in the retention of new information. Allowing employees to make errors and providing error management instructions has found to facilitate the use of trained knowledge and skills (Grossman & Salas, 2011). In relation to a realistic training environment, training transfer is more effective when training approaches are consistent with real job situations (Yaqub, Singh & Dutta, 2020). For this reason, many organisations conduct on-the-job training in the

environment in which the tasks and activities to be learnt will be performed (Grossman & Salas, 2011). Further, both the training content and instruction method are important as these need to be linked to the job to facilitate knowledge acquisition (Ma, et al, 2018).

3.4.3 Work environment

Work environment includes the elements of transfer climate, support, opportunity to perform and follow-up. Training programmes will yield positive transfer outcomes when the work environment inspires the use of the required behaviours. This is because training effectiveness is largely dependent on the employees' ability to practice newly acquired skills and competencies on the job. The transfer climate should thus facilitate the use of learned skills through situational cues, peer support, the opportunity to practice skills, and feedback following the application of skills (Grossman & Salas, 2011; Homklin et al, 2014). Support from supervisors, peers and the organisation are important (Nazli, Sipon, Zumrah & Abdullah, 2015). The role of the supervisor is particularly highlighted in providing opportunities and space for the employee to use newly learned skills (Obaid, Zainon, Eneizan & Wahab, 2016). Finally, the learning experience is incomplete if continuous opportunities are not provided for enhancing and maintaining learning. This includes training debriefing, reflection on training, post-training follow-up and feedback (Grossman & Salas, 2011).

4. Analysis and findings

Data collected in this study was subjected to descriptive and inferential analysis making use of the STATISTICA analytics software package.

4.1 Demographic information

There were 168 respondents in this study of which 70% were male, with the majority (68%) between 36 and 55 years of age. Eleven respondents indicated that they were aged 60 years or older. In terms of education, 67% indicated that they held a matric qualification, and 19% a tertiary qualification. Table 3 presents the occupational level of the respondents expressed as a percentage.

Table 3: Occupational level (n=168)

Occupational level	Job title	Percentage
Technical	Trainee, graduate, operator, setter, team leader, picker/packer, inspector, spray painter, welder.	77
Advanced technical	Supervisor, fitter, electrician, millwright, technician, engineer, specialist, tool maker.	11
Administrative	Administrative, managerial and others.	11

4.2 Employee experiences of the technical knowledge and skills transfer process

The dependent variable in this study was employee experiences of the technical knowledge and skills transfer process. Table 4 presents the frequency counts, mean scores and standard deviations achieved in this regard. In reporting on all sections of the survey instrument, the five-point Likert-type scale responses have been grouped in term of level of disagreement (disagree and strongly disagree) and agreement (agree and strongly agree).

Table 4: Technical knowledge and skills transfer process

Technical knowledge and skills transfer process	% Disagree	% Neutral	% Agree	Mean	Std. Dev.
I am willing to be coached / trained by my seniors or experienced employees	5.36	2.98	91.67	4.19	0.781
Employees are equipped with tools, skills and knowledge on how to handle potential errors / failures	16.67	14.29	69.05	3.60	0.911
My manager provides the necessary support I need to perform my duties as expected	18.45	13.10	68.45	3.59	1.057
My line manager knows my skills gaps	23.21	14.88	61.90	3.47	1.099
My manager provides feedback on my performance	29.76	8.93	61.31	3.38	1.167
Experienced employees at my company have a structured and well documented training plan to train new or junior employees	33.33	16.67	50.00	3.18	1.096
Employees are encouraged to explore and make mistakes	43.45	18.45	38.10	2.91	1.162
Aggregate mean score				3.47	

While the responses to most of the items tended towards “agree”, only the first item, dealing with *personal willingness to be coached/trained by more senior or experienced employees* demonstrated consistency of response ($SD < 0.80$). This suggests that experiences varied as to the extent to which employees believed they were *equipped to deal with errors* and *provided with managerial support* to ensure the transfer process, including the *identification of skills gaps* and *provision of performance feedback*. Grossman and Salas (2011) emphasise the value of error management to promote the proper use of targeted knowledge and skills in the workplace. Mozammel (2019) highlights the importance of supervisor support through setting performance goals and providing positive feedback. Responses for the items relating to *experienced employees having plans for the development of less experienced employees* and *encouragement to explore and make mistakes* indicated bimodality of response suggesting that some employees may have experienced this, while others not.

4.3 Talent management

Talent management can play an important role in the knowledge and skills transfer process. Table 5 presents the data in relation to employee experiences linked to talent management.

Table 5: Talent management

Talent management	% Disagree	% Neutral	% Agree	Mean	Std. Dev.
When a problem is outside the team's scope, a few experts/specialists are readily available to assist	18.45	14.29	67.26	3.55	0.965
The right people are recruited and effort is made to help them develop their skills	22.62	20.24	57.14	3.38	1.070
My company effectively fosters a high-performance work culture to retain talented employees	24.40	19.64	55.95	3.34	1.043
My company effectively develops and nurtures employees' skills and talents	31.55	18.45	50.00	3.17	1.105
My company effectively identifies employees with special skills and talents	35.71	22.02	42.26	3.05	1.093
An internal pool of experts is ready to fulfil the requirements of highly specialised jobs	38.10	21.43	40.48	3.02	1.080
My company is effective in training employees in highly specialised jobs	39.29	19.05	41.67	2.99	1.100
When a highly skilled person resigns, performance and efficiency is maintained	41.07	21.43	37.50	2.98	1.105
When people retire, problems related to machines, equipment and processes are simply solved by junior employees	42.26	22.02	35.71	2.89	1.137
Replacements of experienced employees with scarce skills are planned sufficiently in advance	57.14	12.50	30.36	2.60	1.154
When a highly skilled person leaves, it is easy to find a replacement internally	62.50	16.07	21.43	2.48	1.126
Aggregate mean score				3.04	

While an aggregate mean score of 3.04 might indicate neutrality of response, incidences of bimodality and a spread of scores ($SD > 0.80$) suggests that employees may have differing experiences regarding talent management. This is noted for the items that relate to the *effective identification of talent*, the *existence of a ready-made internal pool of talent*, the *effectiveness of training employees for highly specialised jobs*, the *ability of junior employees to solve problems when people retire*, and the *advance planning of replacements for experienced employees with scarce skills*. This is further evidenced by the disagreement that emerged in relation to the *ease with which an internal replacement can be found when a highly skilled person exits*. Overall, this suggests that talent management practices could be improved. This is important if organisations are to retain intellectual capital. Shabane (2017) contends that effective knowledge management depends on effective talent management and for this reason talent management practices should be integrated with knowledge management strategies. This is because talented employees are the creators and repositories of tacit and explicit knowledge. Shabane (2017) maintains that talent management practices such as career management, training and development and talent retention are likely to institutionalise a culture of knowledge creation and retention.

4.4 Succession planning

In the company that formed the basis for this study, succession planning was utilised to promote knowledge and skills transfer. Table 6 presents the findings in relation to employee experiences in this regard.

Table 6: Succession planning

Succession planning	% Disagree	% Neutral	% Agree	Mean	Std. Dev.
Employees have opportunities to work comfortably with senior / experienced employees	20.83	12.50	66.67	3.57	1.098
My Personal Development Plan (PDP) is linked to my career path	22.62	11.31	66.07	3.45	1.066
My Personal Development Plan (PDP) is clear	24.40	12.50	63.10	3.45	1.120
My Personal Development Plan (PDP) makes provision for external training modules and courses to support my career path	28.57	13.10	58.33	3.30	1.109
My line manager knows my skills gaps and reviews my progress on regular basis	33.33	14.29	52.38	3.23	1.177
My manager manages employees with a view of preparing them for future succession	33.93	16.07	50.00	3.15	1.158
Employees are developed and trained adequately for future role(s)	38.10	16.67	45.24	3.07	1.084
In my company, employees have equal opportunities for growth and development	40.48	14.29	45.24	2.99	1.176
Promotion processes are transparent	39.88	20.83	39.29	2.91	1.168
Promotion decisions are fair	45.24	22.02	32.74	2.77	1.227
Aggregate mean score				3.19	

Once again, a spread of scores ($SD > 0.80$) provides evidence of the differing perceptions of respondents. There may have been some satisfaction with the *opportunities provided to work with senior or more experienced employees* as well as with the *setting of clear and career-directed PDPs* that made *provision for external training*. However, bimodality of response suggests that some managers may, and others may not be seen as future focused through the *identification of skills gaps* linked to *regular progress reviews* and subsequent *talent management for future succession*. This extended to perceptions of the *provision of equal opportunities for growth and development*. The spread of scores in relation to the *transparency of promotion processes* and *fairness of promotion decisions* also revealed a potential range of experiences. Overall, these findings suggest that succession planning may not have involved all employees; alternatively, that it was not perceived to be effectively done by some employees. Succession planning is crucial in addressing potential retirement, death or the early exit of employees and the subsequent flight of intellectual capital (Ali & Mehreen, 2019). In a longitudinal study measuring the impact of knowledge loss in Australian organisations Massingham (2018) determined that newly appointed employees did not contribute as much to the organisation's knowledge score as remaining employees or those who had exited. The development of internal human resources is therefore vital in preserving institutional knowledge.

4.5 Training input criteria

4.5.1 Trainee characteristics

Table 7 presents the data in relation to trainee characteristics

Table 7: Trainee characteristics

Trainee characteristics	% Disagree	% Neutral	% Agree	Mean	Std. Dev.
I eagerly learn from others whenever I can	6.55	2.98	90.48	4.14	0.871
My work behaviour shows that I believe that every employee is responsible for his/her area of work	5.36	2.98	91.67	4.10	0.739
I willingly invest effort in my work. I persist in my work even in the face of difficulties	5.95	5.36	88.69	4.10	0.813
I look forward to learning new skills during training and applying them in my job	11.90	5.36	82.74	3.96	1.020
I see myself being able to perform highly specialised jobs in the near future, if given a chance	14.29	10.71	75.00	3.88	1.073
I look forward to coming to work to do my job	11.90	10.71	77.38	3.84	0.999
I have the capabilities required to do advanced or complex jobs	13.10	7.74	79.17	3.79	0.934
In general, employees in the organisation are eager to develop specialised skills	19.64	16.67	63.69	3.50	1.009
	Aggregate mean score			3.91	

An aggregate mean score of 3.91 is suggestive of agreement in relation to these items. This is supported by the mean scores and standard deviations (close to or below 0.80) obtained for the items relating to *eagerness to learn*, *responsible work behaviour* and *willingness to invest and persist in the face of difficulties*. Other items showed less consistency of response but nonetheless highlight the positive way that the respondents viewed *learning and applying new skills in their job*, the *opportunity to perform in highly specialised jobs in the future* and *possessing the capabilities to take on more advanced or complex jobs*. Positivity as also expressed in terms of *working in current job*. These findings could provide evidence that the respondents experienced a sense of self-efficacy. In a study determining the factors influencing transfer with a management training intervention, Singh and Dutta (2020) indicate that trainees with high self-efficacy have more confidence in their ability to acquire competencies and solve workplace problems as opposed to those with low self-efficacy.

4.5.2 Training design

Table 8 presents the data in relation to training design.

Table 8: Training design

Training design	% Disagree	% Neutral	% Agree	Mean	Std. Dev.
Standard operating procedures are emphasised	4.17	8.93	86.90	4.02	0.700
During training, correct and incorrect workplace behaviours are discussed	10.12	10.71	79.17	3.83	0.896
There is on the job training, were experienced employees coach other employees	16.07	11.31	72.62	3.72	0.991
Error management and instruction processes are available to ensure rapid response	12.50	14.29	73.21	3.70	0.872
During training, the facilitator(s) allows us to make mistakes / errors, as a way of learning	20.24	13.10	66.67	3.56	1.031
Training and development needs of the employee are assessed	31.55	12.50	55.95	3.30	1.104
	Aggregate mean score			3.69	

The design of any training intervention should aid the trainee's ability to apply what has been acquired in training (Singh & Dutta, 2020). Training design factors that have been found to influence training transfer include content relevance, error management, behavioural modelling, and technological support (Ma et al, 2018). In this study respondents indicated consistent agreement in relation to the emphasis laid on *standard operating procedures being emphasised*, which could be an indication of content relevance. There was also some consistency for the *discussion of appropriate work behaviours, error management and instruction processes forming part of training design*. Less consistency was evidenced for *on-the-job training as a form of coaching and making errors as a way of learning*. This is perhaps supported for the item on the scale assessing training transfer, this being *employees are encouraged to explore and make mistakes*, that attracted bimodality of response and a 43% disagreement frequency count. The bimodality of responses in relation to the *assessment of employee training and development needs* suggests that not all employees may have experienced this. This links to the scales measuring experiences of succession planning, where inconsistency of response emerged in relation to the *identification of skills gaps linked to regular progress reviews and the management and development of employees to ensure that they are "future fit"*.

4.5.3 Work environment

Table 9 presents the information in relation to work environment.

Table 9: Work environment

Work environment	% Disagree	% Neutral	% Agree	Mean	Std. Dev.
Employees work together as a team to gain the rewards	16.07	13.69	70.24	3.76	1.075
Managers enable employees to go and attend training	16.07	9.52	74.40	3.68	0.998
Colleagues co-operate with each other to achieve standards of excellence irrespective of diverse personal feelings	18.45	10.71	70.83	3.68	1.040
My company recognises good performance and rewards employees	17.26	11.31	71.43	3.67	1.092
When we return from training, my peers and I apply the knowledge that we have learned	16.07	13.10	70.83	3.66	0.996
My effectiveness is a direct consequence of the training I have received	25.00	11.90	63.10	3.49	1.044
When I return from training, I always find opportunities to apply the new skills and knowledge I have learned	22.62	12.50	64.88	3.47	1.077
After training, I get feedback from other employees on how well I am applying what I have learned from training	35.71	17.86	46.43	3.10	1.024
Aggregate mean score				3.56	

Factors linked to the work environment that promote training transfer include the transfer climate, supervisor and peer support, opportunity to perform, accountability and feedback (Nazli, et al, 2015; Ma, et al, 2018). In this study while the responses to the work environment scale tended towards agreement, all received standard deviations exceeding 0.80, indicating inconsistency of response. This consistency was less so for the items dealing with *managers enabling employees to attend training* and *the opportunity to apply training knowledge on the job*. Bimodality of response was received in relation to *feedback from other employees on how well knowledge/skills are applied after training*.

5. Independent and dependent variables: analysis of sub-scale correlations

Pearson product-moment correlation coefficients (Table 10) were calculated to determine whether relationships existed between the independent and dependent variables as well as establish the strength and direction of any emerging relationships (Bryman et al., 2021).

Table 10: Pearson product-moment correlation coefficients (n=168)

Independent variables	Dependent variable – technical skills & knowledge transfer	Interpretation
Talent management	0.659	Strong positive relationship
Succession planning	0.716	Very strong positive relationship
Trainee characteristics	0.496	Strong positive relationship
Training design	0.608	Strong positive relationship
Work environment	0.679	Strong positive relationship

Strong positive relationships emerged between technical knowledge and skills transfer and the five variables of interest, with implementation of succession planning showing a very strong positive

correlation. To determine whether the independent variables predicted the dependent variable multiple linear regression analysis was conducted (Bryman, et al., 2021) (Table 11).

Table 11: Multiple linear regression analysis (n=168)

	Beta coefficient	Std. Error	B Coefficient	Std. Error	t value	p-value
Intercept			0.654	0.244	2.677	0.008
Talent management	0.125	0.093	0.120	0.090	1.336	0.183
Succession planning	0.355	0.101	0.307	0.087	3.526	0.001
Trainee characteristics	0.067	0.071	0.075	0.079	0.950	0.344
Training design	0.121	0.084	0.138	0.096	1.438	0.152
Work environment	0.196	0.091	0.189	0.088	2.157	0.032

The nature of the relationships between the independent variables of succession planning (0.001) and work environment (0.032) and the dependent variable technical knowledge and skills transfer were found to be predictive and statistically significant ($p < 0.05$). The beta coefficients suggests that succession planning explained 35.5% of the variance in technical skills transfer and work environment 19.6%. This confirms that succession planning and a supportive and enabling work environment contributed to knowledge and skills transfer in the company that formed the basis for this study.

6. Discussion of results

The study aimed to add knowledge surrounding the transfer of technical knowledge and skills in the automotive industry, understanding that there are organisations who have technical tacit knowledge embedded in employees who may exit voluntarily or involuntarily. The automotive sector, both nationally and globally, is experiencing a “brain drain” (Cullen & Calitz, 2017). A challenge arises when knowledge owners vacate employment without transferring their intellectual capital to other employees (Khumalo, 2012). To this end, this study explored employee experiences of the knowledge and skills transfer process. This also included an examination of the role played by talent management, succession planning, and the training inputs factors of trainee characteristics, training design and work environment.

While, in general, employees reported agreement in terms of the variables under study, for many of the items across the various scales measuring the dependent and independent variables there was a lack of consistency and bimodality of response. This suggests that the respondents had differing experiences. This may or may not be linked to demographic factors that were not investigated as part of this study, including age, qualification, occupational level, tenure, and department.

In relation to experiences of the transfer process, consistency of response was obtained in relation to the willingness to be coached or trained by senior or more experienced employees. The differing experiences regarding other items suggest that employees need greater support from their manager in terms of resources, knowledge, support, and feedback. Further, experienced employees need to be equipped with structured and well documented plans to facilitate the succession planning process.

In relation to experiences of talent management and succession planning, these emerged as areas for improvement, as it was with these two variables that the greatest inconsistency of response was received. This inconsistency suggests that improvements could be made, more particularly in relation

to the timely identification of internal talent, specifically that linked to highly specialised jobs. This is essential in ensuring a pool of employees to replace experienced employees when they exit. This finding raises consideration of a need to integrate talent management and knowledge management practices. Shabane (2017) reiterates the fact that when talented employees exit the organisation, tacit knowledge, which is particularly important in a manufacturing operation, exits with them. Integrating talent management and knowledge management practices will enable the organisation to identify employees who possess critical knowledge and create mechanisms to encourage them to share this knowledge with others. To this end Mazorodze and Buckley (2020) emphasise the role of mentoring and coaching as part of succession planning in transferring tacit knowledge.

A further finding relates to the importance of clearly defined PDPs as part of the succession planning process. If succession planning is being used as a vehicle to transfer knowledge and skills it is essential that the PDPs of recipients are clearly formulated and based on the demands of the planned position; further that there is a thorough and ongoing assessment of the skills gap of the recipient over time. This requires regular performance monitoring and feedback. With the mixed responses received in relation to equal opportunity, transparency, and fairness, it is important that management openly communicate about opportunities that are available as part of succession planning as well as the criteria for inclusion. Goh (2002) highlights that transparency in decision-making and the sharing of information is essential in enabling a knowledge-sharing culture.

In this study three training input criteria were examined for their role in the transfer process. These were trainee characteristics, training design and work environment. For trainee characteristics the respondents demonstrated self-efficacy through their expressed willingness to learn and persist, take responsibility, and confidence in their ability to take on more specialised jobs and complex tasks. While trainee characteristics did not emerge as a predictor of training transfer as highlighted by Singh and Dutta (2020) and Nazli et al (2015), this finding may suggest that employees need to be made aware of their role in ensuring the transfer process, more particularly as it relates to their sense of self-efficacy. This could be reinforced through recognition and reward programmes that celebrate milestones reached in demonstrating evidence of skills transfer (Obaid, et al., 2016). In terms of training design, the bimodal responses received in relation to the assessment of training and development needs suggests that this is an aspect that needs attention. This is supported by the finding in relation to the setting of PDPs linked to succession planning. While employees may be provided with PDPs, line managers may not always be aware of employee skills gaps. Lastly, regarding work environment, it appears that the respondents were enabled to attend training and apply newly learnt knowledge on the job. However, a more supportive work environment could be created by allowing greater opportunities for feedback, more particularly that from peers.

One of the objectives set of this study was to determine whether relationships existed between the independent variables (talent management, succession planning and training input factors) and the dependent variable (knowledge and skills transfer process). Positive relationships were determined for all with implementation of succession planning revealing a strong positive relationship. Multiple regression analysis further demonstrated a significant predictive effect for succession planning and work environment. This suggests the importance of ensuring best practices to promote technical knowledge and skills transfer. These are elucidated on in the managerial implications which follow.

7. Managerial Implications

Bansal (2014) emphasises the importance of retention in preserving institutional knowledge. However, understanding that highly experienced staff members will not be retained forever, it becomes important to deploy systems to transfer tacit knowledge. To this end succession planning is used. In this study the challenges that emerged in relation to knowledge and skills transfer centered on the implementation thereof and highlight the important role played by both management and HRM in this regard. They also highlight the need for an integration of knowledge management and talent management practices. To ensure this integrated approach the following considerations are raised:

- The development of a purposeful strategy to reinforce the importance of knowledge transfer programmes in retaining the organisation's intellectual capital. This strategy would entail identifying the reasons for knowledge and skills transfer, the risks of not doing so and the areas in which the company is at greatest risk for knowledge loss linked to key functions, roles, and scarce skills. The focus would be on those employees who possess tacit knowledge and skills accumulated over many years. These functions, roles and skills should be ranked in terms of severity of the associated loss.
- Succession planning and other knowledge and skills transfer mechanisms should be embedded in the organisational culture through regular formal and informal communication, including the provision of status updates. This communication should be transparent in terms of the expectations of the knowledge and skills transfer process, highlight the criteria for eligibility and stress the importance of equity and equality.
- Strategy must be supported at an operational level through identifying suitable recipients for succession planning. The relationship between source and recipient should be anchored in the requirements of the transfer process and this entails the clear identification of knowledge and skills gaps, and setting PDPs with clear objectives, time frames and developmental goals.
- HRM should assist in creating structured plans for knowledge and skills transfer linked to PDPs, as well as performance review and feedback schedules to ensure that recipients are provided with opportunities to experiment with new skills.
- HRM should ensure that the parties to the relationship are provided with the necessary training and information sessions to enable them to fulfil their respective roles in the transfer process, including identifying skills gaps, managing performance, and providing feedback. Further, all sources should have training focused on how to facilitate the transfer of tacit and explicit knowledge. This would include training on mentoring, coaching and presentation skills.
- A supportive transfer environment must be created that provides the opportunity to perform newly learned skills. To this end employees should be encouraged to explore and learn from their mistakes and provided with ample opportunities for feedback. This is facilitated where there is a good relationship between the source and recipient, so it is advisable that mentors are paired with trainees with whom they are willing to work. This will require the establishment of a pool of potential mentees and the need for transparency in the recruitment and identification of potential candidates at all levels of the organisation.
- HRM and managers should be jointly held accountable for succession planning in terms of transparency and fairness. This will require an audit of current positions by line managers and HRM to examine skills, years of service, years remaining to retirement, skills required for future positions, identification of potential employees, and setting of PDPs.
- Employees should be encouraged to explore opportunities for active self-development including seeking out mentors, self-study and demonstrating volunteerism to build on their sense of self-efficacy.
- The link between recognition and reward systems and the knowledge and skills transfer process should be made very clear in acknowledging effective transfer.

8. Limitations and further research

This study sought to provide recommendations to facilitate the knowledge and skills transfer process that is imperative when tacit knowledge threatens to exit with the departure of skilled and experienced employees. While the study was conducted in an automotive component manufacturer, the findings could be generalised beyond the automotive sector as experiences linked to the loss of intellectual capital are widespread in South Africa, more particularly in the manufacturing sector. The study is limited to the extent that it was conducted in one organisation and represents the impressions of respondents in that company. Further, no distinction was made between the source and beneficiary of the knowledge and skills transfer process understanding that the perceptions of these two groupings may have differed. Finally, no further analysis was conducted to determine whether the perceptions differed among employees from different departments, job families and levels of the organisation.

Future research could include determining the key identifiers of successful knowledge transfer through succession planning in the automotive sector as this may highlight valuable information in the planning and execution of transfer programmes. In this regard it would be valuable to determine the extent to which a successful mentoring programme facilitates effective transfer. Finally, it would be valuable to determine the value of incentivisation in motivating transfer best practices versus the role of internal (personal) drivers linked to transfer success.

9. Conclusion

In this study employee experiences of the technical knowledge and skills transfer process were investigated at an automotive component manufacturer. This included an examination of employee experiences with talent management, succession planning, and certain training input factors, these being trainee characteristics, training design and work environment. The study was conducted with a view to providing insight to improve the organisation's ability to retain intellectual capital, more particularly that experienced when employees exit. It is important that organisations plan proactively for both voluntarily and involuntary exits to ensure effective knowledge and skills transfer. This includes understanding the factors that influence the success of transfer programmes.

Succession planning and work environment were found to exert a significant and predictive effect on the knowledge and skills transfer process. These findings suggest the importance of ensuring that well-structured succession plans are implemented through the identification of key positions and future incumbents, and the setting of clearly developed PDPs linked to identified skills gaps to ensure the future suitability of employees to fill these key positions. Further, it is vital that a supportive work environment is created in which trainees are provided with opportunities to practice newly acquired skills and provided with feedback by both supervisors and peers in this regard.

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Effectiveness of Transparency in the Adoption of Employee Share Ownership Plans (ESOPs) in Nigeria

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Keywords

Organisational performance; Employee retention; Incentives; Employee Share Ownership Plans; Transparency

Abstract

In Africa, organisations are seeking strategies that can enhance competition, performance, employee retention and commitment. Numerous strategies as well as incentives have been introduced by management to help achieve their stated goals and desires. This article introduces ESOPs in Nigeria as a strategic incentive that can create a win-win situation for both organisation and its employees. This implies utilising ESOPs as an incentive that can increase organisational performance and provide financial support for employees during retirement. This article provides a conceptual framework and implications that promotes organisational success and employee well-being in Africa.

1. Introduction

Organisations that succeed in meeting the obligations of stakeholders ensure that top management develops a working relationship with their employees (Farach, Musnadi & Kesuma 2020; Pratheepkanth 2011, Sithole 2019). Management expects employees to perform their duties reliably, learn new skills and be responsive to organisational needs whilst employees expect management to provide them with a good working environment, as well as fair pay and fair treatment. Furthermore, motivation is required to address the mutual expectations of both management and employees. Organisations can therefore use motivation to achieve their stated goals and objectives as well as employees' expectations. Rogers (2021) concurs by stating that employees believe that the adoption of ESOPs had a positive effect on employees' effectiveness as the employees feel that they are "all in this together". Therefore, some form of cohesiveness is created.

Blasi, Kruse and Freeman (2018) concur with The Employee Ownership Association (2015a) by stating that ESOPs have been adopted by numerous organisations to motivate their employees to enhance productivity and performance. In addition, ESOP is a fundamental strategy that offers a more diverse ownership model, which organisations can employ for competing globally as well as improving productivity and profitability. Thompson (2005) and Tran (2020) assert that the notion behind the adoption of ESOPs is as a result of the beneficial outcome it produces. This implies that when employees are offered a stake in the organisation for which they work, the psychological effect of ownership makes them stay committed to the organisation. Employees are motivated to work harder and smarter as a result of them having a psychological sense of ownership. In addition, Ding and Chea (2021) found that ESOPs are cost effective, and that the adoption of ESOPs increase the value of the organisation, while organisations that adopted ESOPs have higher survival rates and lower employment turnover rates (Tran 2021).

The utilisation of ESOPs is gaining popularity in few Africa countries, such as Egypt and South Africa (Rosen 2013). In addition, the USA and European Countries have shown increasing interest and support in the utilisation of ESOPs as a result of the benefits it offers upon implementation (Martes 2012). As stated by Bryant and Brown (2022), the adoption of ESOPs leads to higher return

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on assets, enhanced financial performance and increased productivity amongst better engaged employees. The successful adoption and implementation of ESOPs in these countries is dependent upon the mechanism utilised by management (Sithole 2019). Mazibuko and Boshoff (2003) and Yukl and Becker (2006) report that mechanism such as decision-making and empowerment is effective for the successful adoption of ESOPs. Furthermore, Logue and Yates (2015) purport that transparency and two-way communication can be utilised as a mechanism to aid the adoption of ESOPs. This study introduces ESOPs adoption in Nigeria and investigates the effectiveness of utilising transparency as a mechanism in the adoption of ESOPs.

2. Problem Investigated

Based on previous research (Olugbenga 2011; Saka & Ajayi 2010), most organisations in Nigeria are implementing financial incentive schemes such as profit sharing, premium bonus, measured day work, simple piece work, geared incentive schemes, performance-related and group-incentive schemes. In addition, some Nigerian organisations also adopted the use of piece rate, commissions, gain sharing, golden handcuffs and stock options (Ude & Coker 2012). Dede (2019) also noted the inclusion of employee participation in management decision making in any form (including ESOPs) is not frequently used in developing countries such as Nigeria. These financial incentive schemes assist in motivating employees, thus reducing idle time, job dissatisfaction and absenteeism, while increasing employee effort and organisational performance (Armstrong 2010; Ude & Coker 2012). On the contrary, Eneh, Anyadighibe and Etul (2019) conducted a study at an organisation in the South-South of Nigeria who failed to pay bonuses. The recommendation was to adopt a bonus scheme other than a bonus payout as there was no significant relationship between the bonus payment and employee output. Therefore, as there are many different types of financial incentive schemes, it is essential to implement the best financial incentive scheme that will assist in achieving the desired outcomes for both management and employees (Amos, Ristow, Ristow & Pearse 2009).

Although the financial incentive schemes present various benefits for organisations, many Nigerian organisations did not achieve their desired goals of retaining talented employees and enhancing employee commitment. Therefore, the financial incentive schemes implemented by some of the organisations in Nigeria did not contribute to the desired outcomes as identified by management (Armstrong 2010; Saka & Ajayi 2010). In addition, the adoption of ESOPs amongst organisations in Nigeria is not common. A possible reason for the lack of adoption of ESOPs in Nigeria is cited as the absence of financial structures required for the management of ESOPs and the lack of legislation supporting wider employee ownership (UK Essay 2013). Abdullah and Cheluget (2020) highlighted that the first ESOP in Africa was established in Egypt in 1989 and thereafter spread to other African countries; however, the participation rate and the determinants of participation are not clear. The reasons cited by Abdullah and Cheluget (2020) are the lack of transparency and limited research regarding ESOPs in Africa. A study by Davies and Lucky (2018) highlighted that the use of share base payments in Nigeria, such as ESOPs, are more appropriate for organisations where funding for the organisation is obtained from public investors and when cash payments are not financially prudent. It was also noted that policies for share base payments should be integrated and harmonised with the ownership structures of the organisation.

Furthermore, for the adoption of ESOPs to be successful, timely, clear and open information is required by employees and trade unions. Therefore, transparency is of vital importance as it enhances trust and creates an environment that is conducive for effective decision-making, collaboration and co-operation; all important aspects for the successful adoption of ESOPs (L'Etang & Pieczka 2012). Although literature regarding ESOPs is available, there is a lack of academic literature relating to the adoption and corporate governance of ESOPs in Nigeria.

3. Research Objectives

The primary objective of this study is to investigate the effectiveness of transparency in the adoption of ESOPs. Furthermore, this study investigates the outcomes of the adoption of ESOPs. Therefore, the secondary objectives are the following:

- SO¹ To determine the influences of transparency and what the influence is of these antecedents are transparency when adopting ESOPs.
- SO² To determine how transparency of adoption of ESOPs influences the outcomes of adoption of ESOPs.

4. Hypotheses

The research hypotheses formulated are based on the conceptual framework depicted in Figure 1. The conceptual framework depicts the influence and outcomes of the adoption of ESOPs as measured by transparency. In addition, the conceptual framework shows that the adoption of ESOPs (transparency) will produce outcomes, namely, organisational performance, employee retention and employee commitment. Based on the conceptual framework, the research hypotheses of this study are stated as follows:

- H¹*: There is a relationship between trade union responsiveness and the adoption of ESOPs (transparency).
- H²*: There is a relationship between reforms and the adoption of ESOPs (transparency).
- H³*: There is a relationship between awareness of employee benefits and the adoption of ESOPs (transparency).
- H⁴*: There is a relationship between taxation implication and the adoption of ESOPs (transparency).
- H⁵*: There is a relationship between the adoption of ESOPs (transparency) and organisational performance.
- H⁶*: There is a relationship between the adoption of ESOPs (transparency) and employee retention.
- H⁷*: There is a relationship between the adoption of ESOPs (transparency) and employee commitment.

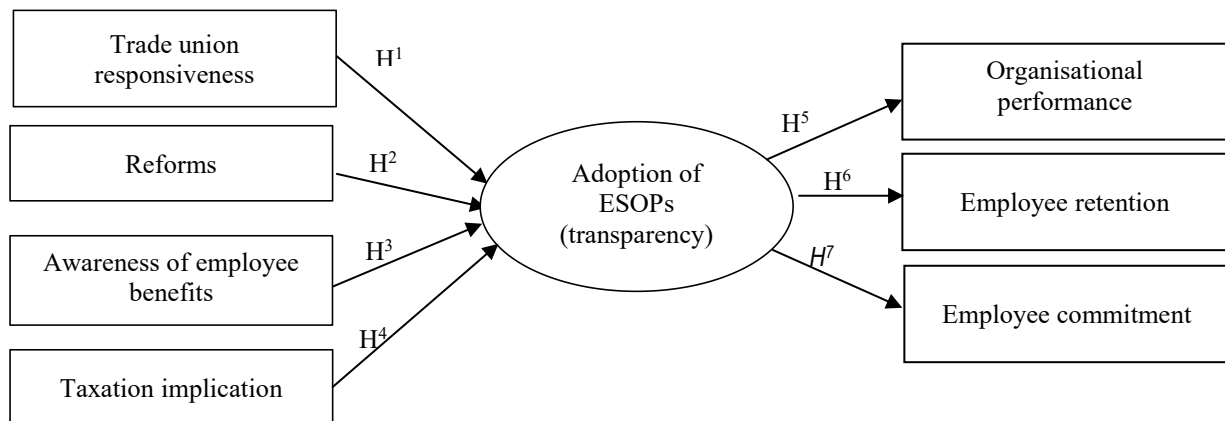


Figure 1: Proposed relationships between influences of and the outcomes of ESOPs through transparency
Source: Own compilation

5. Literature Review

This section provides discussions on the influence (trade union responsiveness, reforms, awareness of employee benefits and taxation implication) and outcomes (organisational performance, employee retention and employee commitment) of the adoption of ESOPs (transparency).

5.1. Transparency as a mechanism of ESOP adoption

ESOPs are defined contribution plans or employee-owner programmes that allow management to provide its employees with ownership interest in the organisation (Groll, Maxfield & Nedrow 2010, Handayani & Yurniwatti 2020). In addition, ESOPs can also be described as retirement or compensation plans (Townsend 2020) that allow employees to become owners of equity or stock (shareholders) in the organisation for which they work. Numerous findings reveal a positive association between ESOPs and concepts such as employee commitment, productivity,

behaviour/attitudes, participation and involvement, as well as retention and organisational performance (Singadimedja, Rahmawati & Mantili 2021; Zhu, Hoffmire, Hoffmire & Wang 2013). Employee Ownership Association (2015b) and Singadimedja et al. (2021) purport that when ESOPs are used as compensation, it enhances and aligns the interest of employee-owners and management and increases employee commitment, organisational performance, talent retention, profitability, productivity and innovation.

Various organisation in numerous countries have successfully adopted and implemented ESOP as a strategic tool to achieve both employee and organisational goals (Sithole 2019). A study by Bezuidenhout, Bischoff and Mashayamombe (2020) found the reason for employees striking to be a hidden transcript involving the ESOP and dividend taxes that were unexpectedly levied. Thus, the employees did not trust the unions to represent them adequately. Therefore, in order to successfully adopt ESOP and enjoy the benefits it provides certain mechanism must be in place. Ura (2015) and Logue and Yates (2015) support this notion by stating that that the adoption of ESOPs will only be successfully if mechanism such as transparency and two-way communication are in place. Furthermore, Mazibuko and Boshoff (2003) suggest that mechanism such as decision-making is required for the successful adoption of ESOPs. Yukl and Becker (2006) purport that utilising ESOPs as a tool for empowering employees promotes successful ESOP adoption. The empirical findings of Gamble, Culpepper and Blubaugh (2002) show that employee empowerment is fundamental to the successful adoption of ESOPs. Therefore, transparency, two-way communication, decision-making and empowerment are effective mechanism required for the successful adoption of ESOP. This study focuses on investigating the effectiveness of transparency in the adoption of ESOP in Nigeria.

Henriques (2007) defines transparency as conveying the truth, the absence of corruption and the presence of ethical practices in an organisation. Furthermore, Zowghi and Jin (2014) define transparency as the provision of true, relevant and timely information about the actions and activities of organisations to the public. Transparency refers to stakeholders' rights and access to information. In other words, transparency refers to management's ability to be open and present precise and true information to all stakeholders (Singadimedja et al. 2021; Villeneuve 2014). Transparency is a fundamental and key aspect of the business environment. One of the key successes of any organisation is their ability to operate in a manner that is honest and open to all stakeholders. Research regarding ESOPs reveals that transparency is a critical component for the successful adoption of ESOPs. In order for management to successfully adopt ESOPs, timely, clear and open information must be given to employees and trade unions. Transparency enhances trust and it creates an environment for the effective decision-making, collaboration and co-operation of all parties involved in the adoption of ESOPs (L'Etang & Pieczka 2012). Furthermore, Oge (2016) argues that transparency in the adoption of ESOPs will help management to be open in their dealings. According to Oge (2016), transparency will also eliminate corruption related to the misappropriation of shares and nepotism. Logue and Yates (2008) support that the successful adoption of ESOPs is an advantage that management can achieve from communicating and sharing timely and full information. Villeneuve's (2014) research reveals that transparency in a system leads to greater trust, increases stakeholder participation and improves governance. Therefore, insufficient and false information provided by management, on the adoption of ESOPs, will negatively influence the interest and participation levels of employees and trade unions.

5.2. Factors influencing transparency in the adoption of ESOPs

This section outlines and provide theoretical discussion of the possible factors that influences the effectiveness of transparency in the adoption of ESOPs. Figure 1 shows that the influences of transparency in the adoption of ESOPs comprises of trade union responsiveness, reforms, awareness of employee benefits and taxation implication.

5.2.1. Trade union responsiveness

Trade unions are referred to as representatives of employees as they fight against discrimination and promote equality, in addition to which they bargain and protect the rights and interests of employees (Ethical Trading Initiative 2010) while positively influencing employees' overall life satisfaction.

(Lee 2022). Trade union responsiveness is the ability of trade unions to have an effective relationship and share accurate information regarding ESOPs with members and management (Peetz 1998). For the purpose of this study, trade union responsiveness refers to the extent to which trade unions respond quickly to the suggestions, requests, complaints and questions from trade union members and management regarding the adoption of ESOPs.

According to Poole and Jenkins (2013) and Townsend (2020), trade unions perceive ESOPs to be a potential threat that weakens their bargaining power as well as their ability to represent employees. Irrespective of the negative attitude that trade unions have regarding the adoption and implementation of ESOPs, Soos (2011) states that trade unions are beginning to understand, support and view ESOPs differently. In addition, McHugh, Cutcher-Gershenfeld, and Polzin (1999) state that trade unions have understood that ESOPs can be valuable when they help members gain secured employment, prevent unfavourable takeovers and restrict management control that impedes on the rights of their members. Due to this advantage, trade unions are willing to carefully embrace the adoption and implementation of ESOPs as highlighted by Sithole (2019), especially within the mining industry.

5.2.2. Reforms

Reforms are approaches taken by the government to bring change, transformation and improvement to the economy (Bouvard, Dohrmann & Lovegrove 2009). Reforms refer to the ability of the government to enforce change in order to improve a condition. For the purpose of this study, reforms refer to government intervention in creating an adjustment or improvement in legislative policies or bills regarding the adoption of ESOPs and the wider financial participation of employees. Currie (2005) suggests that the success or failure of an economy is dependent on the decisions and policies created by policy makers. In addition, policies to achieve success in reforms are necessary for rapid and sustainable growth as well as improvement in institutional, legal and economic conditions. Government intervention through the creation of reforms is crucial for the successful adoption of ESOPs. The legislative bills and policies that the government enacts can positively or negatively influence the adoption of ESOPs. Ripperger (2013) states that reforms concerning ESOPs are a strategy that assists owners of organisations to exist without shutting down or selling out, while Sithole (2019) indicates that most developing countries are using ESOPs as a reform strategy. The reforms created by the government can encourage the wider financial participation of employees and it can encourage organisations to become employee-owned organisations (Ripperger 2013).

5.2.3. Awareness of employee benefits

Awareness refers to being knowledgeable and well-informed about a particular situation of interest (Mishra 2007). In addition, awareness of employee benefits refers to having an in-depth understanding of employee ownership. Awareness of employee benefits in this study refers to employees' level of understanding and knowledge of ESOPs. In addition, awareness of employee benefits stretches to management's ability to enlighten trade unions and employees with full information (how to participate, benefits, process, percentage of ownership, risks and drawbacks) regarding ESOPs (Employee Ownership Association 2015b; Landau, Mitchell, O'Connell & Ramsay 2007a). The awareness of ESOPs is crucial for the successful adoption of ESOPs. This implies that when employees, management and trade unions understand and are familiar with the concept, process, benefits and risks of ESOPs they are likely to show considerable interest in the adoption of ESOPs (Employee Ownership Association 2015b). The increased awareness of ESOPs will have a positive influence on their adoption while the lack of awareness of the relevance and benefits of ESOPs is likely to negatively influence the adoption of ESOPs (Employee Ownership Association 2015b).

5.2.4. Taxation implication

ESOPs are perceived to have numerous benefits and one of these includes tax advantages for ESOP organisations. Management is likely to adopt ESOPs as a result of the advantages of tax incentives from which they can benefit. In addition, government may intervene and encourage the adoption of ESOPs so as to also benefit from tax, within certain limits (NCEO 2015a; Rauh 2006; Singadimedja, et al. 2021; Sithole 2019). Sylvain (2011) states that governments promote the adoption of ESOPs through advantageous tax provisions that they grant to organisations. In addition, Kruse (1996)

indicates that the special tax incentives on ESOPs provided by the government may be the reason why numerous organisations adopt ESOPs. Furthermore, organisations facing high tax burdens or recent increases in taxed income may increase the probability of ESOP adoption by organisations.

5.3. The outcomes of transparency in the adoption of ESOPs

This section focuses on the outcomes of transparency in the adoption of ESOPs. Figure 1 shows that the outcomes of transparency in the adoption of ESOPs are organisational performance, employee retention and employee commitment.

5.3.1. Organisational performance

Organisational performance refers to management's success in achieving its stated goals, objectives and targets that relate to financial, market, shareholder value and production outcomes (Thomas, Deshmukh & Kumar 2008). Organisational performance is the basic responsibility of top management and it enables top management to evaluate results and actions as well as benchmark or compare their performance with their competitors (Richard, Devinney, Yip & Johnson 2008). Therefore, management seeks strategies that can help them enhance the performance of the organisation. According to Hallock Ronald and Venneman (2003), Sithole (2019) and Ding and Chea (2021), an ESOP can be utilised by management as an effective strategy to improve the performance of both employees and the organisation. Yeni, Suprasto and Astika (2019), Abdullah and Chluget (202) and Ding and Chea (2021) found that there is a positive and significant relationship between the adoption of ESOPs and organisational performance. In addition, organisations adopt transparency as a mechanism for ESOP adoption not only to positively influence the attitudes and behaviours of employees but also to improve organisational productivity and performance, as well as to strengthen their competitive edge (Hua 2006). Caramelli's (2015) research findings reveal that there is a significant and positive relationship between transparency in ESOPs and organisational performance. The utilisation of transparency as a mechanism for ESOPs adoption will enable management to achieve high performance that will satisfy the needs of both stockholders and stakeholders (Armstrong 2012).

5.3.2. Employee retention

Employee retention refers to the process by which management implements strategies that are designed to increase the retention of talented employees with the skills and knowledge needed for the achievement of success (Giri 2008). Employee retention is vital to ensure the long-term survival and success of any organisation because it assists in avoiding the high cost associated with high employee turnover (employee that leaves an organisation). Costs associated with employee turnover include low productivity, high expense in recruiting and training new employees and low employee morale (Phillips & Connell 2004). In addition, retaining employees with outstanding skills, talent and knowledge is crucial for organisational success and competitiveness. Numerous organisations understand the advantage of having highly talented employees and, as a result, they devise strategies to attract, recruit, reward and retain talents. The research findings of Landau, Mitchell, O'Connell, Ramsay and Marshall (2009) reveal that ESOPs are used as a strategy by organisations to attract, recruit and retain skilled employees. Pratt (2009) maintains that ESOPs are an effective strategy utilised by HRM to attract and retain skilled employees while Tran (2021) highlights that the adoption of ESOPs result in lower employment turnover rates. The utilisation of ESOPs allows employers to share capital ownership with employees on a long-term basis. KPMG (2011) affirms that retention is one of the key drivers for ESOPs. In addition, the popular reason for the adoption and implementation of ESOPs is to create wealth for employees and to attract and retain employees. Furthermore, KPMG (2011) investigated organisations' objectives for adopting and implementing ESOPs. Their study revealed that the retention of skilled employees is the key objective for the adoption of ESOPs by the organisations being investigated.

5.3.3. Employee commitment

Employee commitment refers to the extent to which employees are willing to persist in meeting organisational goals, without reluctance to changing plans but having a sense of obligation to achieving organisational success (Dixit & Bhati 2012; Vance 2006). Thus, employee commitment

refers to employees' unwavering dedication and loyalty to their organisation's mission and values as well as their persistence in achieving the stated goals and objectives. Vance (2006) adds that in exchange for employee commitment, numerous organisations provide some form of value, such as job security, compensation or incentives (ESOPs, profit sharing or performance bonuses). Landau, Mitchell, O'Connell and Ramsay (2007b) and Sithole (2019) assert that a plethora of research in human resource management focusses on the investigation of the influence of the capacity of ESOPs on employee commitment. These researchers report that organisations adopt and implement ESOPs as a means to increase the commitment of employees which is aligned with the findings of Dede (2019).

6. Research Methodology

The following sub-sections address the research design, the sample selection and measuring instrument as well as the statistical analysis adopted for this study.

6.1. Research Design

Based on the ontology, epistemology and methodology (Graham & Thomas 2008), a positivistic paradigm using the quantitative research method is adopted for this study. The quantitative research method assists in theories and hypotheses to be tested using a large representative sample of the population (Rubin & Babbie 2009). The quantitative research method gathered secondary and primary data in order to attain the objectives of the study.

6.2. Sample Selection

Nigeria comprises of six geopolitical zones (North-Central, North-East, North-West, South-East, South-South and South-West). The four largest geopolitical zones in terms of size are selected for this study. Therefore, the population of this study included all employees located in Lagos (South-West), Abuja (North-Central), Port-Harcourt (South-South) and Kano (North-West). The non-probability sampling technique, and more specifically convenience and snowball sampling, was used to select respondents for the four geopolitical zones. The sample frame for this study is the list of organisations within the financial services, consumer goods, oil and gas, and service sectors located in Abuja, Kano, Port Harcourt and Lagos (representation of the four geopolitical zones namely North-Central, North-West, South-South and South-West). The four sectors selected for this study are the four largest sectors in terms of market capitalisation on the Nigerian Stock Exchange at the time of data collection (The Nigerian Stock Exchange 2015).

As this study forms part of a larger study, the sample size for the full study was 375 respondents (employees). The sample size was calculated as follows: 15 variables (7 independent, 5 mediating and 3 dependent) * 5 items per variable * 5 respondents per item equal a sample size of 375 employees. In order to have an adequate number of respondents for the four largest sectors from the four geopolitical zones, a total of 1 000 questionnaires were distributed to achieve the sample size of 375. However, after the completion of the fieldwork in the four geopolitical zones, a total of 773 completed questionnaires were obtained. It should be noted that only 4 of the original 15 independent, 1 of the original 3 mediating variables and the three independent variables form part of the current study presented.

6.3. Measuring Instrument

A self-administered questionnaire was used to gather data from the trade unions and management of organisations in Nigeria. Trained fieldworkers were used to distribute and collect the data. The fieldworkers were selected due to their familiarity with and experience in data collection, and their access to the target population of the study. The questionnaire used in this study contained items that were self-developed and adapted from previous studies. Items from previously used scales with sufficient reliability were adapted are for the 5 items used measuring trade union responsiveness (Mazibuko & Boshoff 2003), the 5 items used to measure taxation implication (Oberholzer & Stack 2014; Revenue-Irish Tax & Customs 2013), the 5 times used measuring transparency (Al-Mahayreh & Abedel-qader 2015, Schnackenberg 2010; Rawlins 2008), the 7 items used to measure organisational performance (Tshuma 2013; Xingwana 2013), the 7 items used to measure employee retention (Kyndt, Dochy, Michielsen & Moeyaert 2009) and the 7 items used to measure employee

commitment (Gathungu 2016; Jaros 2007). The items used to measure reform (5 items) and awareness of employee benefits (5 items) were self-developed from existing literature. The adapted items were paraphrased and modified to suit the context of this study. The questionnaire comprised of two sections, namely Section A and Section B. Section A of the questionnaire employed the use of a 7-point Likert scale ranging from strongly disagree to strongly agree to measure the variables under investigation. Section B of the questionnaire solicited biographical information from the respondents. The cover letter detailing the purpose of the study and the rights of the respondents accompanied the questionnaire.

6.4. Statistical analysis

A pilot study was conducted among 25 respondents in order to pre-test and evaluate the correctness of the measuring instrument before it was deployed on a larger sample size of research interest. Based on the feedback received, the necessary changes were made to the questionnaire. After the collection of the data, the primary data gathered was coded with Microsoft Excel and data analysis was carried out using Statistica software package (version 12). The data analysis consisted of four distinct stages namely, exploratory factor analysis (EFA), reliability (Cronbach's alpha), descriptive statistics (mean and standard deviation) and regression analysis.

Everitt and Hothorn (2011) indicate that EFA is a complex multivariate statistical method utilised by researchers to identify the underlying structure of a large set of variables. EFA was utilised in this study as a psychometric evaluator for construct validation. This study obtained evidence of convergent and discriminant validity through EFA. Kline (2014) indicates that factors are dimensions that explain the relationship between variables by their factor loadings. Asthana and Bhushan (2016) and Ostello and Osborne (2005) explain that 0.40 is considered as a practical and significant loading in an EFA matrix. Brink, Van Der Walt and Van Rensburg (2006) describe reliability as the extent to which a measuring instrument is consistent, stable and provides results that are similar when utilised repeatedly. This study considered a Cronbach's alpha coefficient of 0.7 and above as an acceptable level of reliability (Baggio & Klobas 2011). Multiple regression analysis is a statistical technique used to determine the relationship or how well the independent variables explain the dependent variable (Baran & Jones 2016).

7. Results

The descriptive statistics of both the respondents and the variables under investigation are discussed. The discussion is followed by the validity and reliability of the measuring instrument where after the MRA results are presented.

7.1. Descriptive statistics of respondents and variables under investigation

The results from the descriptive analysis of the respondents were presented as means and standard deviations. The sample size obtained after fieldwork was 773 comprising of 369 were male and 404 female respondents. Forty-two percent (42%) of respondents belonged to the age group 30 to 39 years while the lowest percentage, five percent (5%), were 60 years and older. Eleven percent (11%) of respondents belonged to the manufacturing organisational sector, whilst the highest representative industry is service delivery with 38%.

Furthermore, the highest percentage (26%) of employees has been employed for a period of 16 to 20 years while sixteen percent (16%) have been under the employ of their organisation for 11 to 15 years. Thirty-four percent (34%) of the respondents indicated that they belonged to a trade union whilst sixty-six percent (66%) reported that they do not belong to a trade union. Organisations listed on the stock exchange constitute thirty-two percent (32%) of the respondents' organisations, while sixty-eight percent (68%) are not listed on the stock exchange.

Table 1 presents a summary of the descriptive statistics (mean and standard deviation) of the variables used in this study. The descriptive statistics is presented as means and standard deviation. Table 4 shows that the majority of the mean score falls between 4.33 and 4.66. This implies that employees, to some extent, agree that the responsive nature of trade unions regarding their rights and interests will

influence their ability to welcome the adoption of ESOPs. Employees will slightly agree to the adoption of ESOPs if the government will create favourable reforms and employees are likely to consider the adoption of ESOPs if they are aware of all the benefits that the compensation plan offers.

Table 1: Descriptive Statistics of the Variables Under Investigation

Variables	Mean	SD
Trade union responsiveness (TUR)	4.33	1.17
Reforms (REF)	4.34	1.27
Awareness of employee benefits (AOEB)	4.50	1.24
Taxation implication (TAX)	4.38	1.22
Transparency (ESOP)	4.36	1.28
Organisational performance (OP)	4.42	1.25
Employee retention (ER)	4.50	1.20
Employee commitment (EC)	4.66	1.37

In addition, employees agree to a certain extent that they will support and welcome the adoption of ESOPs if they can enjoy the benefits of paying lower taxes. Employees agree that transparency (ESOP) is needed for them to welcome and support the adoption of ESOPs. Employees feel that they will support ESOP adoption if management provides them with true and full information regarding the process, benefits and risks of ESOPs. Employees agree, to some extent, that the adoption of ESOPs will be beneficial in improving profitability, service delivery, efficiency, and innovation in their organization. In addition, employees, to some extent, agree to remain and stay committed to their respective organisations if management adopts an ESOP.

7.2. Validity and reliability

Table 2 provides a summary of the results after EFA and summary of all constructs and items (factor loadings of 0.40 as minimum) that loaded together to define a construct.

Table 2: Summary of Factor Loading Matrix of All Variables

Variables	Items accepted	Minimum loadings	Maximum Loadings
Trade union responsiveness	7	0.407	0.715
Reforms	7	0.522	0.665
Awareness of employee benefits	10	0.435	0.675
Taxation implication	5	0.594	0.701
Transparency	5	0.495	0.692
Organisational performance	7	0.518	0.769
Employee retention	10	0.486	0.719
Employee commitment	4	0.632	0.794

The retained variables and the items measuring each of the variables are summarized in Table 3.

Table 3: Empirical Factor Structure – Influences and Outcome

Latent variables	Items
Trade union responsiveness (TUR)	TUR 1-6; MR 1
Reforms (REF)	REF 1-6; TKO 6
Awareness of employee benefits (AOEB)	COMP 1-6; ESOPA 3-6
Taxation implication (TAX)	TAX 2-6
Transparency (ESOP-1)	ESOPT 1-5
Organisational performance (OP)	OP 1-7
Employee retention (ER)	ER 1-7; EC 1-3
Employee commitment (EC)	EC 4-7

The results in Table 4 indicate that the Cronbach alpha values of all variables measured lies between 0.7 and 0.8. Therefore, the measuring instrument developed for this study demonstrated sufficient and acceptable reliability.

Table 4: Cronbach's Alpha – Internal Consistency

Latent variables	Cronbach's alpha
Trade union responsiveness (TUR)	0.81
Reforms (REF)	0.85
Awareness of employee benefits (AOEB)	0.88
Taxation implication (TAX)	0.79
Transparency (ESOP-1)	0.79
Organisational performance (OP)	0.84
Employee retention (ER)	0.86
Employee commitment (EC)	0.72

As the measuring instrument is valid and reliable, the data can be further analysed.

7.3. Regression analysis

Regression analysis is a statistical technique that describes, explains and predicts the relationship and the effect of the relationship among given variables (independent and dependent variables) (Seber & Alan 2012). This study carried out multiple regression analysis in order to explore and estimate the forms of the relationship among the independent and dependent variables. The researcher investigated whether the independent variables had a considerable influence on the adoption of ESOPs, as measured by transparency. In addition, the relationship between the mediating variables and dependent variables was investigated. Table 5 provides the results of the regression analysis between the independent variables and the adoption of ESOPs as measured by transparency.

Table 5: Relationship between Independent Variables and the Adoption of ESOPs as Measured by Transparency

N=773	Regression summary for dependent variable					
	b*	Std.Err. of b*	B	Std.Err. of b	t(766)	p-value
Intercept			0.759	0.172	4.406	0.000
TUR	0.091	0.036	0.101	0.039	2.561	0.011
REF	0.317	0.037	0.320	0.037	8.642	0.000
AOEB	0.205	0.040	0.212	0.041	5.157	0.000
TAX	0.123	0.036	0.129	0.037	3.467	0.000

Table 5 provides a summary of the influence of trade union responsiveness, reforms, awareness of employee benefits and taxation implication on the adoption of ESOPs, as measured by transparency.

Table 5 indicates that although trade union responsiveness ($b = 0.101, p < 0.011$) has a moderate relationship with transparency, reforms ($b = 0.320, p < 0.000$), awareness of employee benefits ($b = 0.212, p < 0.000$) and taxation implication ($b = 0.129, p < 0.000$) are positively related to transparency as an attribute of the adoption of ESOPs. The four variables collectively indicate that 40% of variability in the model explains the transparency in the adoption of ESOPs. The moderate relationship between trade union responsiveness and the adoption of ESOPs as measured by transparency can be linked to the trade unions' willingness to embrace the adoption and implementation of ESOPs (Sithole 2019). The positive relationship between reforms and the transparency in the adoption of ESOPs is due to the wider participation of employees to become employee-owned organisations and the use of ESOPs to reform organisations (Ripperger 2013; Sithole 2019). The positive relationship between awareness of employee benefits and transparency in the adoption of ESOPs is aligned with Employee Ownership Association (2015b) and Landau et al. (2007a). The results of the relationship between the taxation implications and transparency in the adoption of ESOPs supports the results of Kruse (1996) and Sylvain (2011).

Tables 6, 7 and 8 indicate that relationships exist between the adoption of ESOPs as measured by transparency and each of the three dependent variables, namely organisational performance, employee retention and employee commitment.

Table 6: Relationship between Adoption of ESOPs as Measured by Transparency and Organisational Performance

Regression summary for dependent variable: OP						
N=773	b*	Std.Err. of b*	B	Std.Err. of b	t(769)	p-value
Intercept			1.093	0.162	6.767	0.000
Transparency	0.275	0.036	0.268	0.035	7.651	0.000

Table 6 shows that transparency ($b = 0.268, p < 0.000$) in the adoption of ESOPs exert a positive significant influence on organisational performance. This result concurs with the results of HallockRonald and Venneman (2003), Sithonel (2019) and Ding and Chea (2021).

Table 7: Relationship between Adoption of ESOPs as Measured by Transparency and Employee Retention

N=773	Regression summary for dependent variable: ER					
	b*	Std.Err. of b*	B	Std.Err. of b	t(769)	p-value
Intercept			1.320	0.156	8.488	0.000
Transparency	0.222	0.036	0.207	0.034	6.145	0.000

Table 7 shows that transparency ($b = 0.207$, $p < 0.000$) in the adoption of ESOPs is significantly related to employee retention which supports the results reported by Landua et al. (2009), Pratt (2009) and KPMG (2011).

Table 8: Relationship between Adoption of ESOPs as Measured by Transparency and Employee Commitment

N=773	Regression summary for dependent variable: EC					
	b*	Std.Err. of b*	B	Std.Err. of b	t(769)	p-value
Intercept			1.823	0.197	9.267	0.000
Transparency	0.091	0.040	0.097	0.043	2.281	0.022

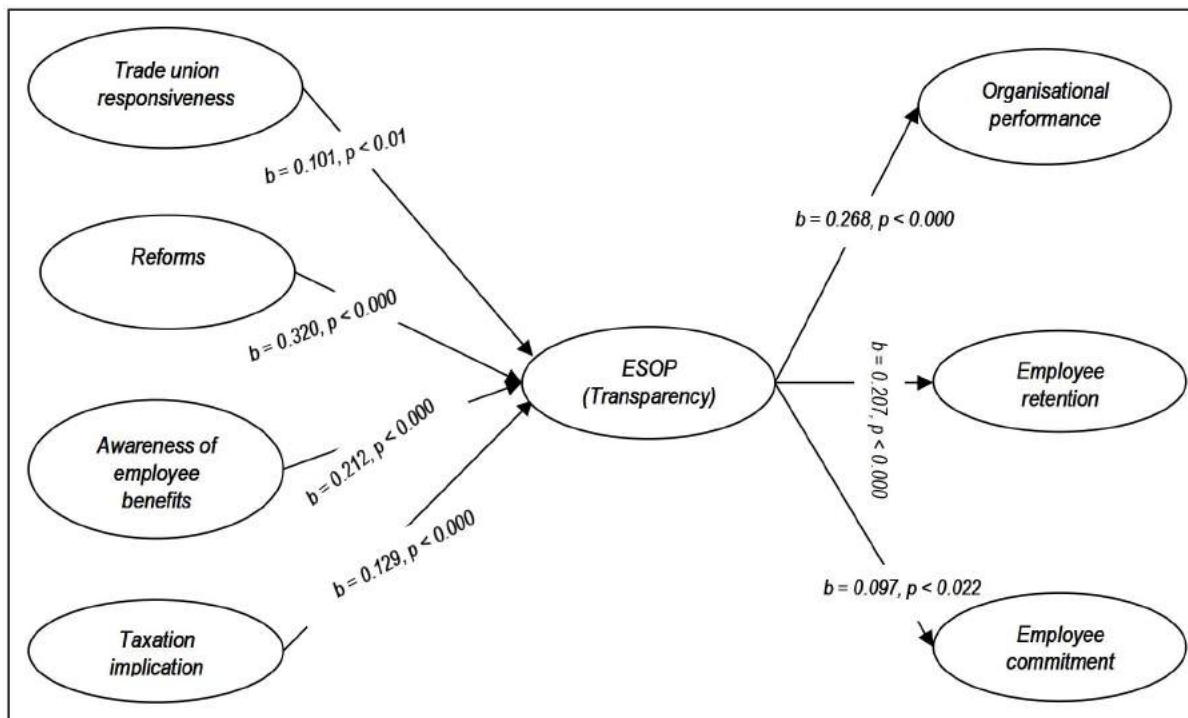
Furthermore, Table 8 indicates that transparency ($b = 0.097$, $p < 0.022$) has a moderate and significant relationship with employee commitment. The results reported by Landua et al. (2007b), Sithole (2009) and Vance (2006) are similar to those presented in Table 8.

7.4. Findings on the formulated hypotheses

Based on the results presented in Table 5, a statistically significant positive relationship exists between trade union responsiveness ($b = 0.101$, $p < 0.05$) and the adoption of ESOPs, as measured by transparency. Therefore, H^1 , stating that there is a relationship between trade union responsiveness and the adoption of ESOPs (transparency), is accepted. In addition, a statistically significant positive relationship exists between reforms ($b = 0.320$, $p < 0.000$) and the adoption of ESOPs, as measured by transparency. Therefore, H^2 , stating that there is a relationship between reforms and the adoption of ESOPs (transparency), is accepted. Evident from Table 5, there is a significant positive relationship between awareness of employee benefits and the adoption of ESOPs as measured by transparency ($b = 0.212$, $p < 0.000$). Therefore, H^3 is accepted. Furthermore, H^4 , stating that there is a relationship between taxation implication and the adoption of ESOPs (transparency), is accepted as taxation implication ($b = 0.129$, $p < 0.000$) is significantly and positively related to the adoption of ESOPs, as measured by transparency.

The fifth hypothesis states that there is a relationship between the adoption of ESOPs (transparency) and organisational performance. Evident from Table 6, the adoption of ESOPs, as measured by transparency ($b = 0.268$, $p < 0.000$), has a significant and positive relationship with organisational performance. Therefore, H^5 is accepted. In addition, H^6 that proposes a relationship between the adoption of ESOPs (transparency) and employee retention, is accepted as a statistically significant positive relationship is found between the adoption of ESOPs, as measured by transparency ($b = 0.207$, $p < 0.000$), and employee retention (see Table 7). Based on Table 8, a statistically significant moderate relationship exists between the adoption of ESOPs, as measured by transparency ($b = 0.097$, $p < 0.05$), and employee commitment. Therefore, H^7 hypothesising that a relationship exists between the adoption of ESOPs (transparency) and employee commitment, is accepted.

The hypothesised results of the relationships between variables, based on employee perceptions of transparency and the adoption of ESOPs, are illustrated in Figure 2.



The empirical results indicate that employees feel that if an ESOP is adopted, trade union leaders will act in their best interests and provide them with feedback regarding the ESOP decisions made by their organisations. The empirical results show that employees believe that if an ESOP is adopted, trade union leaders will carefully negotiate the ESOP terms and conditions with management on their behalf.

In order to successfully adopt ESOPs, and address issues relating to ESOP adoption, there should be a strategic collaboration between trade union and management. Organisations are required to consult trade unions and inform them of the intention to adopt and implement ESOPs. During dialogues (bargaining and negotiating ESOP terms and conditions), management is advised to share true and concise information regarding ESOP adoption to the trade unions. Furthermore, trade union heads should promote strategic collaboration between the union and employees. Trade union heads should carefully represent employees and negotiate the terms and conditions of ESOP with management. Trade union heads should be responsive by providing employees with feedback and answers regarding ESOP-related decisions made by management.

8.2. Reforms

The empirical results show that the successful adoption of ESOPs is dependent on government intervention through the creation of advantageous reforms in policies and laws that can aid the adoption of ESOP. The implications of these results are that employees believe that the government will create reforms for ESOP adoption to promote a sense of ownership for employees and shared capitalism.

The successful adoption of ESOPs is dependent on government intervention through the creation of reforms in policies and laws. Therefore, government should create reforms on taxation policies and shared capitalism. The reform on taxation (tax incentives) should be specific and meant for organisations and employees who are willing to adopt and implement ESOPs in their organisations. The adoption of ESOPs will be successful if the government creates reforms in laws focused on promoting shared capitalism and the economic empowerment of employees. In other words, the government should ensure that it supports lower income employees by creating reforms in laws that encourage a broader spread of ownership.

8.3. Awareness of employee benefits

The empirical results reveal that employees will consider the adoption of ESOPs if they have more knowledge of how ESOPs benefit them. Therefore, employees feel they will consider the adoption of ESOPs if they know that it can assist them in saving for retirement and can provide financial security for themselves and their family.

Awareness of employee benefits is crucial for promoting the adoption of ESOPs. The lack of awareness of ESOPs is the primary barrier to ESOP adoption. Therefore, to create awareness and promote the adoption of ESOPs, government and organisations should resort to utilising advertisement tools (TV, radio, hand-bills and billboards) to create ESOP awareness and attract the attention of a large number of people. Furthermore, ESOPs can be promoted by the government and public organisations through the utilisation of cell phone sms, car wraps, social media and pay-per-click (PPC) advertisements. Private organisations can utilise media such as internal notice boards, newsletters, emails, mails to create awareness of ESOPs within the organisation.

8.4. Taxation implication

The implication of these results is that employees believe that, when an ESOP is adopted, they will enjoy an increased sum in their retirement savings to cover their income tax. Employees feel that, if an ESOP grants them tax incentives, they will accept tax charges from ESOP dividends, accept their civic responsibility to pay their taxes continuously and declare all additional income they receive.

Numerous organisations and employees are burdened by the increase in and payment of high taxes. Organisations and employees evade paying taxes, primarily, due to the high tax rate. ESOP will be welcomed by employees and adopted organisations if the government creates tax incentives. The federal taxation incentive is one of the major reasons why organisations adopt ESOPs and why ESOP organisations improve financially. This is in line with the discussions of Gamble (1998).

8.5. Transparency

The success and effectiveness of an ESOP in an organisation depends on how transparent management is with employees regarding the plan, how management communicates the plan and how the ESOP is utilised to empower employees. The empirical results reveal that employees feel that, for ESOPs to be successfully adopted in the organisation, management must provide them with full information regarding ESOP adoption. In addition, employees feel that ESOPs will be successfully adopted if management provides them with ESOP adoption information in a language that they understand. Furthermore, the empirical investigation found that the adoption of ESOPs will be successful if management is accountable to all employees for its actions regarding ESOP adoption. Employees believe that the adoption of ESOPs will be successful if they can review information regarding ESOP adoption at any time and if management discloses details regarding the financial aspects of ESOP adoption.

Transparency is an important component in the adoption of ESOPs. Employees expect management to be transparent in their dealings with them regarding ESOP adoption. The failure of management in the area of transparency in ESOP adoption will lead to employees developing doubts and fears related to the plan. Therefore, in order to successfully adopt, manage and operate ESOPs, management is required to disclose ESOP information and grant employees access to ESOP information. Furthermore, management should be committed to performing its duties and be accountable for its actions regarding ESOP adoption. A high level of transparency in the form of accountability is effective in preventing the failure of ESOPs.

9. Conclusion

This study investigated the role of transparency in the adoption of ESOPs as well as the influence of ESOPs (transparency) on organisational performance, employee retention and commitment. This study provided theoretical findings on influential factors and likely outcomes of the adoption of ESOPs. The empirical results of this study indicate that transparency by trade union responsiveness, transparency by governments in the creation of reforms, awareness of employee benefits and taxation

implication is required to successfully adopt ESOPs. Furthermore, the adoption of ESOPs will lead to organisational performance, employee retention and employee commitment if management, trade unions and government are transparent with their dealings on ESOPs with employees. This study contributed to the body of knowledge by expanding the current understanding of the adoption of ESOPs and identifying underlying reinforcers or attributes that can be used as a strategy in the adoption of ESOPs.

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Factors Affecting the Performance of Women-Owned Businesses in the Informal Sector: The 5 M Framework Perspective

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Keywords

5 M framework; informal sector; performance; women entrepreneurs

Abstract

Worldwide, while there has been a significant drive to understand challenges facing women-owned businesses, many women entrepreneurs, particularly in developing countries, are still plagued with gender-specific challenges that adversely affect their performance. This study draws on the 3 dimensions (i.e., money, management (human capital and social capital), and motherhood (work-family conflict and family support)) of the gender-aware 5 M framework to assess the factors influencing the performance of women entrepreneurs in the informal sector. The study adopted a quantitative research method and collected data using a questionnaire. The questionnaire was distributed to 300 women entrepreneurs in Mangaung Metropolitan Municipality. The convenience and snowball sampling techniques were used to recruit the participants. The findings showed a positive and significant relationship between access to finance and the performance of women entrepreneurs. The results also revealed a positive and significant relationship between human capital, social capital, financial capital and the performance of women entrepreneurs. Family work conflict (FWC) had a negative association with the performance of women entrepreneurs. Furthermore, family instrumental support had a positive association with the performance of women entrepreneurs. This study culminates with managerial and policy implications on how the performance of women-owned businesses can be enhanced.

1. Introduction

All over the world, the significance of women entrepreneurs is highlighted by their potential to influence their countries' economies through job creation, economic growth, and development (Aboidun & Amos, 2018; Adikaram, & Razik, 2022). Women-owned businesses occupy a highly visible part of every economy in Sub-Saharan Africa's major cities (World Bank Report, 2019). Most women-owned businesses are based in the informal sector due to the limited public and private employment (Gharbiyeh, Hakspiel, and Arab Women's Enterprise Fund, 2020). As such, the informal sector has received increasing attention because of its significant role in employment creation, poverty alleviation, economic growth and development, and sustainable livelihoods (Guvén and Karlen, 2020; Musara & Nieuwenhuizen, 2020). According to Webb, Tihanyi, Ireland and Sirmon (2009), informal sector entrepreneurship is a set of illegal but legal activities undertaken by people who identify and take advantage of business opportunities. Informal businesses are defined as unregistered, unregulated, unrecorded, untaxed businesses that commonly operate from homes, street sidewalks, or other informal arrangements that do not have trading licenses or town-planning agreements (Horn, 2011). Statistics South Africa (2022) noted that the informal sector contributes a significant share to the South African job creation as indicated by an increase in the employment contribution of 171 000

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persons from this sector compared to 2021. Regarding the informal sector, Kubheka (2018) reported that more women were employed in the informal sector as 47.6% of women were employed in the informal sector compared to 30.6% men. Also, Bowmaker-Falconer and Herrington, (2020) reported that female entrepreneurship is on the rise in South Africa as the ratio of male to female entrepreneurial activity increased to 1.14 (10.9 male: 9.6 female entrepreneurs in 2019). However, regardless of their increased economic participation even during the pandemic, only 21.9% of South African business owners in 2021 are women, a slight increase from 2020 (21.1%) that keeps the country's 44th place in the global ranking (Mastercard Report, 2022). This suggests that their progress in entrepreneurship has lagged behind other nations of comparable size such as Botswana, Uganda and Ghana. Also, the Mastercard Report (2020) revealed that 59% of women entrepreneurs operate in sectors like retail, restaurants, food shops and domestic services, which were severely affected by the economic downturn and thus negatively affected the performance of their businesses. The South African National Development Plan 2030 (NDP) recognises women as one of the most vulnerable groups adversely affected by unemployment, poverty, and inequality (South African Government, 2012). Consequently, the South African government has significantly emphasised fostering women-owned businesses as they play a vital role in income and employment generation.

While extant research (OlaREVaju & Fernando, 2020; Mulaudzi & Schachtebeck, 2022; Neneh, 2018) have shed more light on the factors influencing the performance of women entrepreneurs, limited studies have focused on the gender-aware 5 M framework for a holistic understanding of women entrepreneurship (Al-Qahtani, Fekih Zguir, Al-Fagih, & Koç, 2022). This is because women entrepreneurs are still experiencing gender-specific challenges, adversely affecting their businesses (Adikaram & Razik, 2022; McWalter, 2021). The Covid-19 pandemic further exacerbated these gender-specific challenges (Casale & Posel 2020; Casale & Shepherd 2020), affecting women-owned businesses. As such, a recent study by OlaREVaju and Fernando (2020) has called for more research on the gendered nature of women entrepreneurship. This is because empowering women entrepreneurs will act as an engine for growth and innovation and also bolster a community for successful women entrepreneurs to thrive. Also, women entrepreneurs flourish in different environments and with different kinds of support than their male counterparts and thus the need to identify gender-specific policies for women entrepreneurs (McWalter, 2021). This study draws on the 3 dimensions of the 5 M framework (money, management, and motherhood) to shed light on the factors influencing the performance of women entrepreneurs in the informal sector to provide new insights that would assist policymakers in providing gender-specific measures to advance women's entrepreneurship.

1.1 Problem statement

Globally, there has been an upsurge in the economic participation of women entrepreneurs, thus significantly contributing to job creation and the socio-economic development of economies (Neneh & Welsh, 2022). In South Africa, women comprise 51.2% of the adult population (Statistics South Africa, 2019). Nonetheless, only 19.4% of South African business owners are women suggesting that their progress in entrepreneurship is still low. Also, these women are still experiencing gender-related challenges, which negatively impact their business performance. According to Harrichurran (2021), women in South Africa often spend less time on leisure activities than men because they devote much of their time to work and family obligations. Like men, most working women put in more than 40 hours a week at their occupations (Stat SA, 2021) but are still responsible for taking care of most domestic duties.

Also, limited studies have focused on the gender-aware 5 M framework to provide a holistic understanding of the factors influencing the performance of women-owned businesses in the informal sector in South Africa. As such, in responding to the call by OlaREVaju and Fernando, (2020) to research the gendered nature of women entrepreneurship, this study draws on the 5 M framework to identify the factors influencing the performance of women entrepreneurs in the informal sector.

1.2 Research Methodology

This study adopted a quantitative research method where primary numerical data was collected and analysed using statistical tools. The study population consisted of women entrepreneurs in the

informal sector in the Mangaung Metropolitan Municipality operating businesses in sewing, hairdressing, nanny, fast foods, street-hawking, shebeen and spaza shops. Data was gathered using self-administered questionnaires. Convenience and snowball sampling techniques were used as there is no database for women entrepreneurs operating businesses in the informal sector in the Free State and in South Africa. Most of the respondents were between 34-38 years, constituting (25%) of the respondents, followed by those 55 years and above (15.7%). Regarding the level of education, most of the respondents have reached high school, even though they did not complete it (44%), while 29.7% completed matric (i.e. high school certificate). Most women entrepreneurs (46.3%) were married, and 34.7% were single. The majority had two children (39.3%), followed by those with one child (25%). The majority of the children (50.3%) were below 18 years. As such, the assumption is that the children are still being taken care of by the women. Regarding prior experience, 64.7% of the women entrepreneurs had prior working experience. Nevertheless, most (89.7%) women entrepreneurs did not have formal training before establishing their businesses.

1.2.1 Measures

Work-family conflict (WFC and FWC) was measured using 5 items adapted from Netemeyer et al. (1996). Sample items for WFC include; "the demands of my work interfere with my home and family life" and sample items for FWC included; "the demands of my family or spouse/partner interfere with work-related activities." All of these items were responded to on a five-point Likert-type scale ranging from 1 "strongly disagree" to 5 "strongly agree".

Measures for family support were adapted from existing studies (Imbaya, 2012; Neneh, 2019; Mari et al., 2016; Neneh, 2017). Family instrumental support was operationalised using 3 items. Sample items included, "family members provide me constructive feedback and business-oriented advice." Family emotional support was measured using 2 items. Sample items included, "family members encourage, motivate and inspire me to pursue my entrepreneurial goals, especially when I encounter difficulties during the entrepreneurial process." Family financial support was measured using 2 items. Sample items included, "family members contribute financially to the establishment and subsequent running of my business."

Access to financial capital was operationalised using 4 items adapted from existing studies (Bates et al., 2007; Brush et al., 2009). Sample items included; "lack of collateral security needed to obtain a loan (Reverse)." Human capital was operationalised using 6 items adapted from existing studies (Bates et al., 2007; Brush et al., 2009). Sample items included, "managerial and overall business experience." Social capital was measured using 3 items adapted from existing studies (Yetim, 2008; Presutti, Boari & Fratocchi, 2016). Sample items included, "maintain close social relationship with customers." Performance is defined as the attainment of the venture's goals (Dzomonda, 2021). Business performance was measured using 6 self-reported subjective measures of performance adapted from existing studies (Brockman et al., 2012; Neneh, 2016; Neneh, 2017). All the items from the constructs were anchored on a five-point Likert-type scale ranging from 1 "very dissatisfied" to 5 "very satisfied." In this case, scores ranging from 2 and below were regarded as weaker performance while a score of 3 was regarded as moderate performance and a score of 4-5 was regarded as favourable performance.

1.3 Objectives of the study

This study aims to identify the factors that influence the performance of women-owned businesses drawing from the 5 M framework.

1.3.1 Hypotheses

The following hypotheses were formulated for the study:

- H1: Access to finance will have a positive relationship with the performance of women-owned businesses
- H2a: Human capital will have a positive relationship with the performance of women-owned businesses

- H2b: Social capital will have a positive relationship with the performance of women-owned businesses
- H3a: Work-family conflict will negatively affect the performance of women-owned businesses.
- H3b: Family-work conflict will have a negative relationship with the performance of women-owned businesses H4:
- H4a: Family instrumental support will have a positive relationship with the performance of women entrepreneurs
- H4b: Family emotional support will have a positive relationship with the performance of women entrepreneurs
- H4c: Family financial support will have a positive relationship with the performance of women entrepreneurs

2. Theory development

The current study is built on the family embeddedness theory, social capital theory, and role theory to understand the factors affecting the performance of women entrepreneurs drawing from 3 (money, management, and motherhood) of the 5M dimension of the framework

Brush et al. (2009) built on the 3Ms (markets, money and management) developed by Bates, Jackson and Johnson (2007) and added two more variables (motherhood and meso/macro-environment) to develop the 5 M framework. The 5M component comprises money, management, motherhood, market and macro/meso environment. This framework considers the influence of gender on business performance (Brush et al., 2009), which is supported by Jennings and McDougald (2013), who state that men and women experience gender differences that affect their performance as entrepreneurs differently. Following this framework, "Market" refers to the opportunity identified by the entrepreneur (Bates, et al, 2007; Brush et al., 2009). "Meso" refers to institutional policies and structures, while 'macro' refers to the social and cultural norms. "Money" refers to access to financial capital. "Management" comprises the human and social capital.

Mirchandani (1999, p. 230) argued that the abbreviated letter M'THER in the framework validates "gender as a process integral to business ownership." Motherhood represents the household/family context which is believed to have more impact on the performance of women entrepreneurs (Jennings & McDougald, 2007). The family context puts women entrepreneurs in a position where they have to play multiple roles in the family, which may influence their businesses differently from those run by men. The motherhood dimensions adopted by this study are work-family conflict and family support.

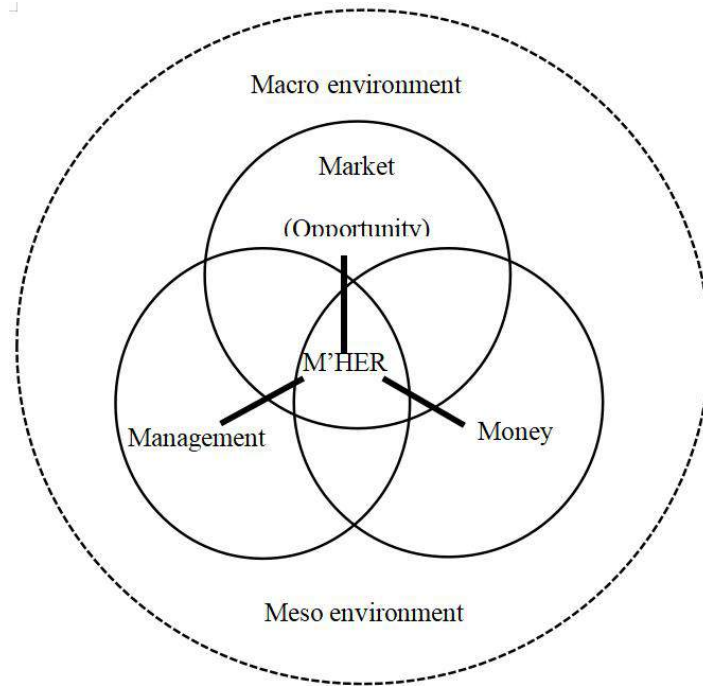


Figure 1: The 5 M framework
Source: Brush, de Bruin and Welter (2009).

This study also adopted the role theory (Kahn et al., 1964) to understand work-family conflict. According to the role theory, individuals play several different roles in their life, which may result in conflicting demands. Work and family are salient roles to most people (Kahn et al., 1964; Neneh, 2017). According to Kahn et al. (1964, p. 445), "given the finite resources available to individuals, when the expectations, responsibilities, norms, and behaviours of one role are at odds with acting another role, it is difficult to fulfil the requirements of one or multiple roles." The competing demands from enacting salient roles such as work and family result in work-family conflict (Kahn et al., 1964; Neneh, 2017). Also, the social capital theory highlights the importance of relationships that can benefit a person outside their original context of creation and lead to the accumulation of human capital. Furthermore, this study adopted the family embeddedness theory to explain how family support affects women entrepreneurs' performance (Aldrich & Cliff, 2003). The family embeddedness theory postulates that family and business domains are entwined, particularly for women. Thus, the support (in the form of financial, instrumental, and emotional) the women receive from their families and close networks can help women entrepreneurs to perform optimally in these domains and assist them in mitigating the challenges facing their businesses. Aldrich and Cliff (2003, p. 574) argued that "connecting the "unnaturally separated" social institutions of family and business will pave the way for more holistic-and more realistic-insights into the fascinating processes by which new business opportunities and new business ventures emerge." Figure 1; present the conceptual model

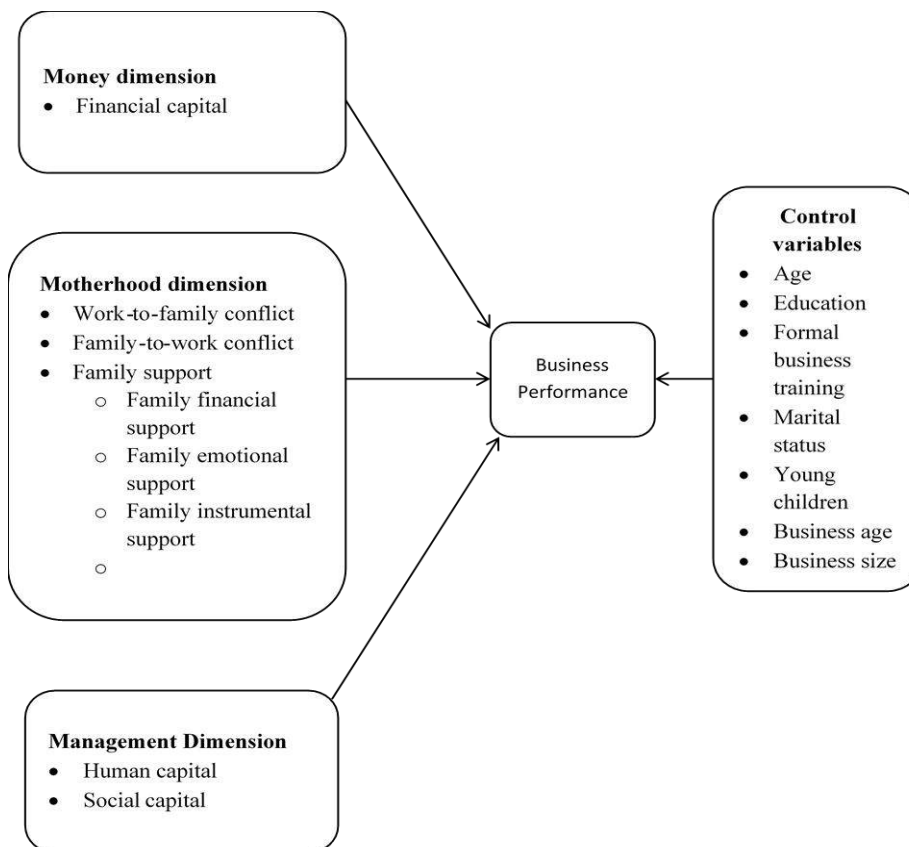


Figure 1: Conceptual model linking the three dimensions of the 5 M framework and business performance

2.1 Factors affecting the performance of women-owned businesses

It is crucial to uncover factors that influence the performance of women entrepreneurs to enhance the success rate of this unique group. This study will only focus on 3 (money, management, and motherhood) of the 5M dimension of the framework. These factors are explained in the following subsections.

2.1.1 Money (access to financial capital) and performance of women-owned businesses

Bates et al. (2007) describe access to finance as one of the essential resources required by any business. Khaleque (2018) defines access to finance as the ability of an individual to access credit and other sources of funding for their business. Finance can come from different sources, such as family members, friends, investors, and banks (Morazzoni & Sy, 2022). Having the ability to access funds from these sources is very crucial to the success of a business (Metu & Nwogwugwu, 2022). Essentially, finance is required at each stage of the business life cycle. Nevertheless, women entrepreneurs in developing countries face many challenges in accessing finance than their male counterparts which negatively influences their performance (Aliyu, Ahmad & Nordin, 2019). Most women entrepreneurs self-finance their businesses or depend on government grants (McWalter, 2021). Men are four times more likely to obtain venture capital or angel investments than women-owned businesses. Also, many women entrepreneurs use their savings to finance their businesses, max their credit cards, rely on friends and family or use a combination of all of these methods to finance their business (Burns, 2021)

In South Africa, several women entrepreneurs find it challenging to access finance due to a lack of collateral security and being economically excluded for a long time (Chinomona & Maziriri 2015). The Mastercard Report (2022) also revealed that women entrepreneurs in South Africa are constrained by poor access to finance (ranked 40th). Access to finance enables the business to acquire critical resources such as qualified employees and technology required for the growth and sustainability of a business (Neneh 2016; Koko, Maishanu & Hassan, 2017; Aliyu et al., 2019).

Finance is required to smoothen the cash flow of a business such that it can pay its suppliers and employees on time (Neneh 2016; Khaleque, 2018). Existing studies agree that access to finance has a positive association with the performance of women-owned businesses (Abiodun & Amos, 2018; Khaleque, 2018). Based on this evidence, this study hypothesises that;

H1: Access to finance will have a positive relationship with the performance of women-owned businesses.

2.1.2 Management and Performance of women-owned businesses

The management factors this study focuses on are; human capital and social capital. Colombo and Grilli (2005) describe human capital as skills, competencies, and understanding, as well as additional characteristics necessary for a specific economic activity. Brush, Ali, Kelley and Greene (2017, p.106) noted that "human capital resources, such as education, experience, attitudes, beliefs and perceptions, are the most important resources a nascent entrepreneur brings to an emerging venture." Human capital, which includes education and experience, enhances women entrepreneurs' entrepreneurial self-efficacy, boosting their confidence in running the business (Brush et al., 2017). An entrepreneurship career requires particular skills, which means women entrepreneurs who are well qualified and skilled will likely perform well in their ventures. In South Africa, while the enrollment rate in tertiary education is higher for women than for males, nonetheless, it is still very low on the global scale (Mastercard Report, 2022). Existing studies agree that human capital factors such as level of education, business-related skills, and experience positively affect the performance of women-owned enterprises (Adom & Asare-Yeboah, 2016; Brush et al., 2017).

Social capital is a multi-layered concept that different authors have conceptualised differently. As such, this study adopts Nahapiet and Ghoshal definition of social capital, which considers social capital as "the network of relationships possessed by an individual or social unit, and the sum of actual and potential resources embedded within, available through and derived from such network" (1998:243). From the definition of social capital, bonding and bridging social capital are two types of social capital this study focuses on. Bonding capital is the strong ties between familiar individuals, while bridging capital is characterised by distant relationships between various social class, groups or other important socio-economic characteristics (Andriani, 2013). Existing studies show that all the resources required to establish and grow a business are tied to the entrepreneur's networks (Neneh, 2017; Weisul, 2017; Dzomonda & Masocha, 2019). Bonding and bridging social capital can enable resource-constrained women entrepreneurs to unlock financial resources, market opportunities, and valuable business information from their networks, which will increase the performance of their businesses (Neneh, 2017; Neneh, 2018). Prior studies have found a positive association between social capital and the performance of women-owned businesses (Neneh, 2017; Mozumdar, Farid & Sarma, 2017; Olamide & Ogbechie, 2021; Neneh, 2018).

Based on the above, this study hypothesises that;

H2a: Human capital will have a positive relationship with the performance of women-owned businesses

H2b: Social capital will have a positive relationship with the performance of women-owned businesses

2.1.3 Motherhood and performance of women-owned businesses

The motherhood dimensions adopted by this study are work-family conflict and family support (financial, emotional, and instrumental). These factors are explained in more detail below.

2.1.3.1 Work-family conflict and performance of women-owned businesses

Work-family conflict is defined as "a form of inter role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect" (Greenhaus and Beutell, 1985, p. 77). Work-family conflict is bi-directionality - work-family conflict (WFC) and family-work conflict (FWC). WFC occurs when experiences and obligations at work domain interfere with the

family domain, while FWC arises when experiences and responsibilities in the family context interfere with the work domain. The increased research on WFC and FWC is due to the increasing representation of dual-earners and single parents in the workplace. As such, devoting attention to multiple roles can result in conflict as participation in these roles become difficult.

Traditionally, women are expected to assume the role of primary caregivers to their families and are therefore responsible for the undertaking of household duties (Neneh & Welsh, 2022). However, the significant increase in the number of women starting a business (Adikaram & Razik, 2022) globally has caused disruptions in women's traditional roles. As such, women have 'double shift' days as they have to attend to work and family responsibilities (Nani, 2011:42). Besides their work responsibilities, many women still assume responsibility for most of the domestic work and childcare, nearly twice more than their male counterparts (Waithaka, Wegulo & Mokuu, 2016; Smith & Johnson, 2020). This double shift often results in home duties not getting done due to work responsibilities, as well as the work responsibilities not getting done owing to the unending family responsibilities, which ultimately interferes with both work and family life. This situation is much worse for some women in developing countries where there is an unequal distribution of labour, with women assuming a larger share of unproductive labour (Neneh, 2018; Germano, 2019; Neneh & Welsh, 2022). Consequently, women entrepreneurs who assume these multiple roles will find it difficult to balance the conflicting demands of the roles, leading to underperformance in their businesses and dissatisfaction in their family life. This view collaborates with extant research (Erkmen & Esen, 2014; Waithaka et al., 2016; Neneh, 2018; De Clercq et al., 2022) that has shown that both WFC and FWC negatively affect the performance of women entrepreneurs. Hence, this study hypothesises that

H3a: Work-family conflict will negatively affect the performance of women-owned businesses.

H3b: Family-work conflict will have a negative relationship with the performance of women-owned businesses.

2.1.3.2 Family support and the performance of women-owned businesses

The family domain plays an important role in business creation, success, and growth. Family support refers to the social support women entrepreneurs receive from their family members (Aldrich & Cliff, 2003). The family context can offer women entrepreneurs with various forms support including financial, emotional, and instrumental support (Poggesi et al., 2015; Neneh, 2017; Welsh et al., 2017; Welsh et al., 2018). These different forms of family support result in the growth and sustainability of women-owned enterprises (Neneh & Welsh, 2022). For instance, existing literature indicates that women entrepreneurs find it difficult to access external sources of finance from banks (Chinomona & Maziriri, 2015; Aliyu, Ahmad & Nordin, 2019). Women entrepreneurs experience high credit application rejection rate than their male counterparts (Su et al., 2015). Consequently, women entrepreneurs end up relying on their savings, which are often insufficient to sustain the business (Su et al., 2015; Neneh, 2017). Hence, family members act as a primary source of finance for most women entrepreneurs (Neneh, 2017; Welsh et al., 2018). Families can provide non-interest-bearing financial support to women entrepreneurs, which helps them to scale their businesses. According to Neneh (2017), financial support from family members can help women entrepreneurs acquire assets and other resources required at the business's start-up stage, enhancing the venture's performance. Family members can help women entrepreneurs to apply for and secure external funding, which allows them to attain work-life balance (Mari et al., 2016; Neneh, 2019; Welsh et al., 2018). Family members can also provide unpaid services to the business, which helps the women entrepreneur to retain some money meant to hire employees to grow the business (Neneh, 2017). Existing studies have found that women entrepreneurs who receive financial support from their families tend to succeed in their businesses (Su et al., 2015; Neneh, 2017).

Another crucial intangible resource for women entrepreneurs is emotional support from family members (Ramadani et al., 2015). An entrepreneurship career demands emotions and time commitments, which can be stressful for women entrepreneurs (Welsh et al., 2021). This often results in issues of WFC and FWC, where the woman entrepreneur finds it difficult to strike a balance

between the demands of work and family domains which becomes emotionally draining (Aldrich & Cliff, 2003). According to the family embeddedness theory (Aldrich & Cliff, 2003), emotional support from family may help diminish role conflict, enhancing the performance of their ventures. Welsh et al. (2021) argued that "family emotional support (i.e., the provision of reassurance, acceptance, and encouragement in times of stress by family members) enhances an individual's self-esteem." Likewise, existing studies (Neneh & Welsh, 2022; Ramadani et al., 2015; Welsh et al., 2021) express that a supportive family helps women entrepreneurs distress and find the strength to focus on their businesses which positively influences performance.

Instrumental support refers to support related to physical resources, feedback on the business, mentorship, and strategic support from the family (Mari et al., 2016; Neneh, 2019; Welsh et al., 2021; Neneh & Welsh, 2022). Instrumental family support boosts women entrepreneurs' confidence, enhancing their ventures' success rate (Neneh & Welsh, 2022). Existing studies found a positive relationship between instrumental support and the performance of women-owned entities (Welsh et al., 2016; Welsh et al., 2021; Neneh & Welsh, 2022). Hence, we argue that having access to family support in the form of financial, emotional, and instrumental support will help women entrepreneurs maintain work-life balance by diminishing role conflict and thus enhancing their business performance. Hence, this study hypothesises that:

H4a: Family instrumental support will have a positive relationship with the performance of women entrepreneurs

H4b: Family emotional support will have a positive relationship with the performance of women entrepreneurs.

H4c: Family financial support will have a positive relationship with the performance of women entrepreneurs

3. Results

3.1 Descriptive statistics

Table 1: Descriptive statistics

Factors	Mean (M)	Standard deviation (S.D.)
Family-work conflict (FWC)	2.519	1.525
Work-family conflict (WFC)	2.577	1.512
Family instrumental support (FIS)	2.779	1.498
Family emotional support (FES)	3.160	1.547
Family financial support (FFS)	2.443	1.386
Financial capital (FC)	2.511	1.403
Human capital(HC)	1.754	1.008
Social capital (SC)	4.307	0.948
Performance	3.164	0.977

The results from Table 1 reveal that women entrepreneurs in the study had low levels of human capital (M=1.754, SD=1.008); WFC (M=2.577, SD=1.512), FWC (M=2.519, SD=1.525); financial capital (M=2.511, SD=1.43); emotional support (M=3.160, SD=1.547); instrumental support (M=2.779, SD=1.498) and financial support (M=2.511, SD=1.403). Also established is that women entrepreneurs had a moderate performance (M=3.164, SD=0.977). What is important to note is the high levels of social capital (M=4.307, SD=0.948) received by these women entrepreneurs.

3.2 Evaluation of the measurement model

3.2.1 Reliability and convergent validity

Construct reliability was evaluated using Cronbach's alpha (CA) and composite reliability (CR), while convergent validity was assessed using the average variance extracted (AVE). AVE estimate denotes the average variance extracted from a construct by its parallel items (Fornell & Larcker, 1981). An AVE minimum value of 0.5 shows sufficient convergent validity.

Table 2: Reliability and convergent validity

Factors	Items	Factor loadings	CA	CR	AVE
Family–work conflict	FWC1	0.979	0.987	0.989	0.949
	FWC2	0.975			
	FWC3	0.978			
	FWC4	0.962			
	FWC5	0.979			
Work–family conflict	WFC1	0.940	0.980	0.984	0.927
	WFC2	0.980			
	WFC3	0.984			
	WFC4	0.976			
	WFC5	0.933			
Family instrumental support	FIS1	0.834	0.908	0.943	0.846
	FIS2	0.962			
	FIS3	0.958			
Family emotional support	FES1	0.936	0.862	0.936	0.879
	FES2	0.939			
Family financial support	FFS1	0.833	0.870	0.913	0.841
	FFS2	0.995			
Financial capital	FC1	0.871	0.874	0.913	0.726
	FC2	0.885			
	FC3	0.733			
	FC4	0.909			
Human capital	HC1	0.929	0.921	0.937	0.713
	HC2	0.929			
	HC3	0.841			
	HC4	0.857			
	HC5	0.707			
	HC6	0.783			
Social capital	SC1	0.965	0.853	0.913	0.782
	SC2	0.967			
	SC3	0.692			
Performance	PER1	0.935	0.940	0.952	0.770
	PER2	0.892			
	PER3	0.905			
	PER4	0.766			
	PER5	0.871			
	PER6	0.884			

Table 2 presents the evaluation of the measurement model in terms of reliability and convergent validity. The findings showed that the factor loadings are acceptable as most of the loadings are above 0.7, which is in line with the recommended threshold value (Hair et al., 2019). Construct reliability

was assessed using CA and CR. Table 2 reveals that the alpha values were between 0.853 and 0.987, while the composite reliability values were between 0.913 and 0.989. Therefore, all the constructs showed adequate levels of construct reliability as they are above the recommended threshold of 0.8 for the alpha values and 0.7 for CR (Henseler, Ringle & Sinkovics, 2009). Convergent reliability was examined using the AVE. From Table 2, it is observed that the AVE values were between 0.713 and 0.949, indicating adequate levels of convergent reliability for all the major constructs in the model according to the commonly accepted threshold value of 0.5 (Henseler et al., 2009).

3.2.2 Discriminant validity and correlation matrix

Discriminant validity was assessed using the Fornell-Larcker criterion. The data in bold in Table 3 is the square-root of the AVE, while the rest of the data is the correlation coefficients.

Table 3: Correlation matrix of internal factors and business performance

Factors	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Family-work conflict	0.97*								
(2) Work-family conflict	0.67	0.96*							
(3) Family instrumental support	-0.47	-0.43	0.92*						
(4) Family emotional support	-0.45	-0.45	0.64	0.94*					
(5) Family financial support	-0.23	-0.24	0.63	0.59	0.92*				
(6) Financial capital	-0.06	-0.03	0.02	0.01	0.02	0.85*			
(7) Human capital	-0.29	-0.26	0.47	0.46	0.17	0.17	0.85		
(8) Social capital	-0.08	-0.09	0.49	0.46	0.33	0.16	0.20	0.88	
(9) Performance	-0.29	-0.25	0.53	0.46	0.25	0.38	0.55	0.47	0.88*

*Square root of the AVE on the diagonal (bold). Significance level *p<0.05, **p<0.01

The results in table 3 show that the square roots of the AVE values (i.e. the figures are in bold) for all the model constructs were greater than their corresponding inter-construct correlations, thus indicating that Fornell-Larcker criterion has been met. Also established is that FWC and WFC have a significantly negatively correlation with performance, suggesting that an increase in conflict results in a decrease in performance. Furthermore, the results show that all three forms of family support had a positive and significant correlation with performance, with instrumental family support showing the biggest influence (Coef=0.53). Additionally, the results show a significant positive correlation between human capital and performance (Coef=0.55), social capital and performance (Coef=0.47), and financial capital and performance (Coef=0.38).

3.3 Regression model

Table 4 presents the regression models that take into account the joint effect of all three dimensions of the 5 M framework in a single regression model as presented in the conceptual model.

Table 4: Regression analysis showing the joined effect of 3 dimensions of the 5 M framework on the performance of women-owned businesses

Factors	Combined model		
	Beta	T-Value	P-Value
<i>Control variables</i>			
Constant		1.002	0.317
Age	0.080	1.159	0.247
Education	0.033	0.638	0.524
Formal business training	0.059	1.254	0.211
Marital status	-0.086	-1.723	0.086
Young children	0.112	2.399	0.017
Business age	-0.038	-0.724	0.470
business size	0.030	0.608	0.544
<i>Motherhood dimension</i>			
Family–work conflict	-0.376	-2.242	0.026*
Work–family conflict	-0.281	-1.731	0.084
Family instrumental support	0.264	2.904	0.004**
Family emotional support	-0.016	-0.185	0.853
Family financial support	-0.027	-0.482	0.630
<i>Money dimension</i>			
Financial capital	0.252	5.680	0.000**
<i>Management dimension</i>			
Human capital	0.255	4.680	0.000**
Social capital	0.262	5.296	0.000**
<i>Model parameters</i>			
R ²	55.5%		
Adjusted R ²	53.1%		
F-value (sig.)	23.603 (0.000)**		
Significance level *p<0.05, **p<0.01			

The results in Table 4 show none of the control variables had a significant association with the performance of women-owned businesses. Family–work conflict has a negative and significant relationship with the performance of women-owned businesses. Also, family instrumental support, financial capital, human capital and social capital have a positive and significant relationship with the performance of women-owned businesses.

3.4 Discussion

This study assesses the factors that influence the performance of women-owned businesses in the informal sector, drawing from the 5 M framework. The results reveal that the factors that influence the performance of women-owned businesses in the informal sector are family-work conflict, instrumental support, financial capital, human capital and social capital. Firstly, family-work conflict having a negative relationship with the performance of women-owned businesses corroborates extant studies (Neneh, 2018; Waithaka et al., 2016), which also reported that FWC had a negative association with the performance of women-owned businesses. A possible explanation for this result is that while women's participation in the labour force has considerably increased over the last decade, most women are still in charge of the majority of the domestic and childcare responsibilities alongside the running of their businesses. This situation is particularly worse in some African countries where the traditional gender role expectations require that women prioritise their family over work (Hundera et al., 2019). Consequently, given that entrepreneurship is an all-time commitment that necessitates entrepreneurs to devote long work hours to be successful, the number of hours women entrepreneurs spend on their household responsibilities reduces their time on their businesses, negatively affecting their performance.

Secondly, family instrumental support having a positive relationship with the performance of women-owned businesses is in accordance with extant studies (Neneh, 2017; Poggesi et al., 2015; Neneh & Welsh, 2022). This finding suggests that instrumental family support is a vital resource for women entrepreneurs, consistent with the family embeddedness theory (Aldrich & Cliff, 2003). The family context can supply instrumental support from both the family and the work domain. In the family domain, family members can offer women entrepreneurs with instrumental support in the form of domestic, childcare, and elderly care (Shelton, 2006; Neneh & Welsh, 2022). In the work domain, family members can offer women entrepreneurs with instrumental support in the form of feedback regarding their businesses, physical and financial resources (Leung, Mukerjee & Thurik, 2020).

Third, the results showed a positive association between financial capital, human capital, social capital, and performance. Regarding finance, extant studies (Aliyu et al., 2019; Burns, 2021). This raises the need for policymakers to identify tailored-made sources that can assist women in the growth and survival of their businesses. Also, human capital has a positive relationship with the performance of women-owned businesses, which collaborate with extant studies (Adom & Asare-Yeboah, 2016; Brush et al., 2017). However, women entrepreneurs in this study had a low level of human capital which is a call for concern. Zolin, Stuetzer and Watson (2013) reported that women entrepreneurs typically have less managerial expertise compared to their male counterparts. Besides encouraging women entrepreneurs to upskill themselves, they are also encouraged to tap into the instrumental support their family members can provide in the business domain through constructive feedback and acting as mentors (Welsh et al., 2016). However, women entrepreneurs must exercise caution when tapping into the instrumental support from the business domain, as existing studies (Welsh et al., 2016; Welsh et al., 2021) found that family support provided by family members might sometimes be detrimental to the business due to unwarranted interference and conflicts. Furthermore, social capital has been widely acknowledged as vital in enhancing the performance of women entrepreneurs (Neneh, 2017; Neneh, 2018; Burns, 2021). Through social capital, women entrepreneurs can tap into networks and increase collaboration, share expertise and experience, and foster trust amongst various teams (Burns, 2021; Wang, Cai, Zhu & Deng, 2022).

4. Implications

This study offers theoretical, policy, and practical/managerial implications.

Theoretical implications

In terms of theoretical contributions, this study responds to the call by Olarevaju and Fernando (2020) to research the gendered nature of women entrepreneurship by using the family embeddedness theory, social capital theory, and role theory to understand the factors affecting the performance of women entrepreneurs drawing from the 5M framework. This study revealed that the family domain can provide family instrumental support to the women entrepreneur in the work and family domain.

Likewise, social capital can enable resource-constrained women entrepreneurs to unlock financial resources, market opportunities, and valuable business information from their networks, which is vital for the success and growth of their businesses.

5. Managerial implications

The practical implications are fourfold. First, since FWC negatively influences women entrepreneurs' performance, women must tap into the family instrumental support from the family domain by delegating some of their household and childcare responsibilities to the family so they can dedicate the extra time to their businesses. Second, the findings also indicated that social capital is a crucial resource for women entrepreneurs. Thus, women entrepreneurs must invest in developing their social capital to unlock financial resources, market opportunities, and valuable business information which can enhance their performance. One way to achieve this is by participating in several women's business forums, such as the B'avumile Skills Development Initiative and South African Women Entrepreneurs Network, where women entrepreneurs share business information and opportunities. Third, women entrepreneurs are also encouraged to upskill themselves with business management skillsets to foster their level of human capital. As such, government agencies such as the National Empowerment Fund, Small Enterprise Development Agency, Free State Development Corporation, and the National Youth Development Agency should develop business education programmes that will enhance the performance of these women. The business education programme should provide basic knowledge of sales and marketing, personal and business financial management, costing, product differentiation, operational management, and general management training

Fourth, given that most women entrepreneurs still experience barriers in accessing finance to grow their businesses, the government and policymakers need to identify alternative funding models tailored toward women entrepreneurs. An example will be to explore microfinancing as a possible funding model for these women. India, one of the fastest-growing emerging countries, adopted microcredit to assist disadvantaged borrowers without collateral security with access to affordable loans to grow their businesses. Also, government support agencies need to develop funding programmes tailored to the unique needs of women entrepreneurs.

Policy implications

Regarding policy implications, policymakers are encouraged to develop tailored made policies that can foster women's entrepreneurship as their needs and challenges significantly differ from their male counterparts, considering that women enact multiple roles in the work and family domain.

6. Conclusion and Limitations of the study

The study sheds new insights on the combined factors that influence the performance of women entrepreneurs in the informal in South Africa drawing from the 5M framework, which extends the current knowledge on women entrepreneurship in South Africa. This study highlights the vital role of family instrumental support, social capital, human capital, and financial capital in enhancing the performance of women-owned businesses and the detrimental effect FWC has on women-owned businesses.

This study presents some limitations which necessitate further research. Firstly, this study only focused on women entrepreneurs in the informal sector in the Mangaung Metropolitan Municipality (Bloemfontein, Botshabelo and Thaba'Nchu). The findings cannot be generalised to all women entrepreneurs in South Africa. Thus, future studies may extend this study by incorporating larger samples from other provinces in South Africa. Secondly, this study only focused on 3 of the 5 dimensions of the 5M framework. Future research should also include all 5 dimensions of the 5M framework to provide more insights into the gendered nature of women entrepreneurship.

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The Factors That Affect the Use of Unified Communication Technologies Within an Organisation

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Keywords

Unified Communication;
Collaboration;
Employee performance.

Abstract

Effective communication is vital component in any organisation. Unified Communication (UC) solutions are an important pillar of an organisation's IT strategy. UC keeps employees and customers connected, improves services, enables work collaboratively and allows daily organisational functions to operate effectively. Ineffective communication within organisations yields negative outcomes because of unclear goals, inefficiencies, poor productivity and low morale. Organisations are increasingly implementing UC tools to address communication challenges. This study was conducted to evaluate and develop techniques to improve communication efficiency and effectiveness when implemented using unified communication technology within an organisation. This study followed a positivistic research philosophy and the approach was deductive. A quantitative study using a questionnaire was conducted to test the conceptual model. The survey was conducted amongst employees and management of a large industrial development zone in South Africa, in order to establish the factors that contribute to the use of UC and collaboration technologies in the organisation. The data from this survey were statistically analysed, including Exploratory Factor Analysis. The most important determinants for UC technology collaboration were the factors Presence and Internet Protocol Telephony. The findings of the study indicated that most of the respondents positively agreed that UC improved productivity, UC increased employee performance and UC created positive effectiveness among employees.

1. Introduction

Communication entails the transmission and exchange of information from one party to another through a medium (Fluker & Murray, 2017). The landscape of organisations' communication has evolved over the years due to advances in information technology (IT). New concepts and communication models are the result of the constant evolution of IT (Dziembek & Turek, 2018). Global human interconnectivity is permanently shifting and information and communication now move freely, driving change (Mygatt, Steele & Voloshchuk, 2020). Effective communication and collaboration within an organisation contribute to setting benchmarks for successful and efficient organisational operations. Internal and external organisational operations and transactions are often conducted through various modes of communication, in addition to face-to-face (Burg, 2013). These multiple types of communication need to be structured to form a strategic communication strategy. Strategic communication is seen as strategic when it integrates all those communications that are associated with organisational goals and strategies and the operations of the organisation (Van Ruler, 2018).

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Unified Communication (UC) is defined as communication with devices integrated to optimise organisations' processes within reasonable time frames or to optimise organisations' processes and enhance human communications by reducing latency, managing flows and eliminating device and media dependencies (Singhal & Agarwal, 2016). Exchange of knowledge will allow employees to be more effective in their jobs. Today's users are used to a range of different communication methods, including instant messaging, voice and video calls, Zoom, Microsoft Teams, emails or social media. The communication tools involved with UC technology consist of instant messaging, presence technology, conferencing and Internet Protocol Telephony (IPT). Email, telephony, conferencing, social networking tools and instant messaging have a presence but as a built-in capability (Elliot, Blood & Fernandez, 2022; Collins, 2018). Present trends for UCs include UC as a service (UCaaS). UCaaS is a cost-effective model for on-demand delivery of unified communications services in the cloud (Tefamicael et al., 2015). The most important barriers of UCaaS include:

- Security issues;
- Technical barriers;
- Legal barriers;
- Psychological barriers; and
- Market barriers (Dziembek & Turek, 2018).

The COVID-19 pandemic has forced people to work from home, which has presented a new range of challenges, which have been attended to with technology solutions for communication (Sanders et al., 2020). Communication with employees and external stakeholders has always been important pre-COVID-19 and still is the focus of some organisations post-COVID-19. Organisational communication strategies and practices play important roles in giving employees information, direction and support (Kartikawangi & Dahesihsari, 2020). Technology brings numerous benefits, but with the new technologies there are many challenges to overcome (Oertig & Buerger, 2006). UC technologies are very important and available in the market. UC becomes a strategic decision for businesses because it can address communication issues in new ways by delivering an integrated platform where all these applications are in use in a shared or unified environment (Scopserv, 2021). UC as a service enables an organisation to shrink costs, but it also enables it to place its emphasis on core competencies and allocate employees efficiently and thus focus on competitive diversity and advantage (Panetta, 2017).

The aim of this study was to determine the factors that influence the use of UC technologies within an organisation. The study investigated how management and employees in an Industrial Development Zone organisation, perceived the use of UC technology. The paper proceeds as follows: the problem investigated and the research objectives are discussed. A discussion on the background literature with a general overview of UC including benefits, drivers for adoption as well as components and the proposed UC conceptual model to improve employee efficiency and employee productivity follow. The remaining sections discuss the research methodology, the results and conclusions.

2. Problem Investigated

Organisations continue to become more fragmented and employees, at the same time, become more mobile. UC enables people to work together in real time and provides new ways of being more efficient (Silic & Back, 2016). With UC, employees are always accessible. This study investigated how employees in an organisation identify and use UC technology. It further investigated how access to the communications of organisations has been changed into effective collaborative communication. Due to improvements in technology and market growth, different studies support that the trend for UC is beneficial. The success, usability and ease of use of UC systems and technologies are however dependent on the applications being user-friendly. To improve communication, various communications and collaboration tools have been developed to enhance the efficiency and productivity of employees. The research problem investigated in this study is that communication with and between employees within the workspace has been challenging and the enabling factors have not been identified.

3. Research Objectives

The services offered by the IT (Information Technology) department, as an enabler to achieve corporate goals, must be strategic, methodical and delivered with unyielding commitment and passion. IT acts as a strategic enabler, by providing IT solutions that will support the organisation to achieve its strategic goals. The IT department of an organisation must provide high quality technology-based services, in the most cost-effective manner in collaboration with organisations, to meet the needs of the organisation.

The main objectives of this study were:

- To determine the factors that influence employees' perception of the use UC technology; and
- To propose a model to improve communication by using UC technology within the organisation.

4. Hypotheses

The following hypotheses were formulated for the study:

- H₁: The UC **presence** has a positive effect on the effective communication within the organisation.
- H₂: The UC **collaboration** has a positive effect on the effective communication within the organisation.
- H₃: The UC **Internet protocol telephony** has a positive effect on the effective communication within the organisation.
- H₄: The UC **video conferencing** has a positive effect on the effective communication within the organisation.
- H₅: The UC **instant messaging** has a positive effect on the effective communication within the organisation.
- H₆: The **usage** of UC technology has a positive effect on effective communication within the organisation.
- H₇: The **efficiency** of UC has a positive effect on the effective communication within the organisation.
- H₈: The employee perception of **technology** has a positive effect on the effective communication within the organisation.
- H₉: The **employment benefits** using UC technology have a positive effect on effective communication within the organisation.
- H₁₀: The **Organisations benefits** using UC technology have a positive effect on the effective communication within the organisation.

5. Literature Review

UC technology signifies innovations in communication technology that have grown over time into solutions, which combine various communications channels and collaborative technologies to expedite the cooperative use of information sharing and multiple communication methods (Elliot et al., 2022). UC offers a multi-faceted communications infrastructure that enhances communication to drive relationship building and abolish physical barriers that frequently impede effective communication and consequently productivity among the employees in an organisation. Fluker and Murray (2017) in Figure 1 show the path that effective communication leads to improved productivity.

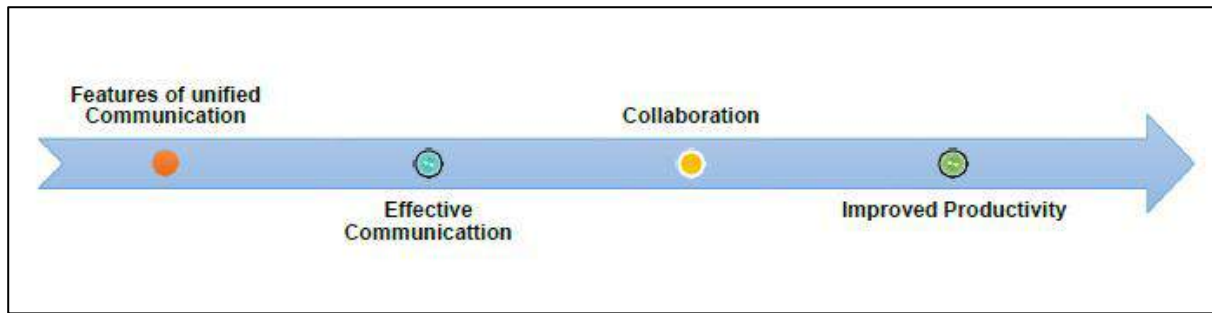


Figure 1: Path to effective communication and productivity (Fluker & Murray, 2017)

The long-established and efficient way of communicating in organisations were by travel and meetings (Denstadli et al., 2013). According to Perlow et al. (2017), a survey was conducted with 182 executive managers, which revealed that 62% stated that meetings had led to lost opportunities. In the survey, 65% stated that meetings caused them to delay the completion of urgent tasks and 71% stated that meetings are unproductive and inefficient. Most of the respondents to the survey, however, considered that meetings are sometimes essential to collate information for organisations efficiency, even though they are viewed as unproductive and inefficient. Information and technology have advanced to the extent that teams and service providers distributed over a geographically wide area can collaborate and communicate in real time by using UC (Aguilera, 2008). In a global environment, as employees become more mobile and organisations continue to get further fragmented, UC empowers individuals to collaborate in real time and enables efficient communication with various clients, suppliers and stake-holders for problem solving through information sharing via multiple communication methods (Elliot et al., 2022).

Recent advances in IT have propelled innovation in UC technologies into various modes of collaboration (Arnold, 2018). Most organisations' communications have moved from face-to-face to communication media such as email and conference calls (Burg, 2013). Distributed work, telework and virtual work are not new phenomena, specifically during the COVID-19 pandemic period (Henry, Le Roux & Parry, 2021). Effective communication entails not only the content of the message but also the comprehension of the content, the acceptance of the message and the delivery channel (Den Hartog, Boon, Verburg & Croon, 2013).

UC provides a platform to integrate collaboration applications into a single interface, with a consistent user experience across endpoints and network environments. The pillars of UC include voice, video, messaging, conferencing and mobility (Young, 2017) and can help organisations construct well-rounded collaboration plans (Figure 2).

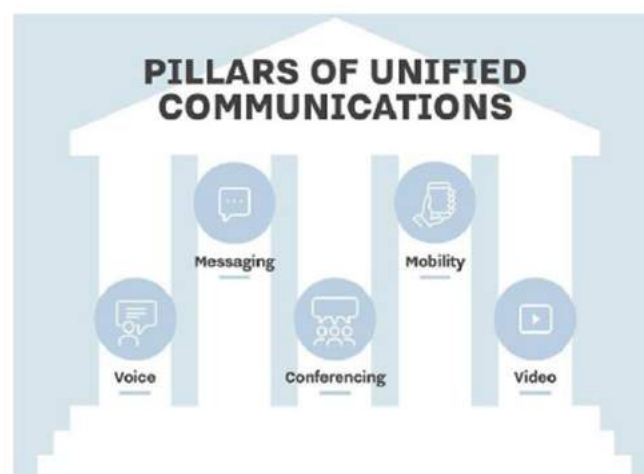


Figure 2: Pillars of Unified Communications (Young, 2017)

Recent advances in IT have propelled innovation in UC technologies into various modes of collaboration considerably (Arnold, 2018). Most organisations' communications have moved from face-to-face to communication media such as email and conference calls using technologies such as Zoom and Teams (Burg, 2013). Figure 3 illustrates the integration of various communication tools in a UC ecosystem, for example voice, instant messaging (IM), presence, desktop sharing, audio conferencing and video conferencing interacting in a unified way (AT&T Organisations, 2018).



Figure 3: Unified Communications tools (Computer Station Co., 2014)

5.1 Drivers for adoption of UC

The drivers of UC include improved employee collaboration, improved internal and external communication and creating a more mobile workforce (Figure 4).

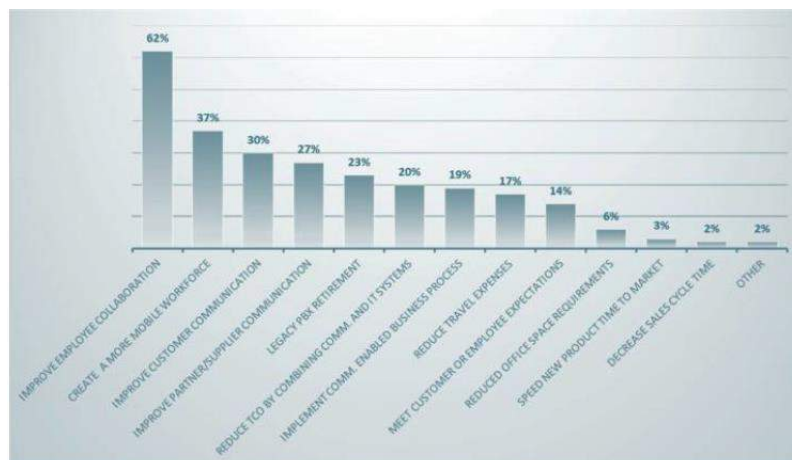


Figure 4: Organisations Drivers for UC (Fairbrother, 2015)

There are three main organisational drivers for the adoption of UC technology as follows:

- **Usage:** Venkatesh (2000) stated that behavioural intent (usage) has a positive effect on the purpose to use UC and collaboration technology;
- **Efficiency:** In order to accomplish speed and efficiency for user requirements, many organisations have used UC as a replacement or to complement out-dated communication channels to connect with customers and employees (Fikry & Mukhtar, 2012). UC offers provision for efficiency, speed, multi-tasking and increasing interpersonal relationships; and
- **Technology:** UC and collaboration technology offer pathways for the broadcasting of knowledge, enablement of decision making and UC of employees within the digital world (Vermesan et al., 2011). An effective technology platform provides access to information, supports plug and play communication and enables the revolution of knowledge and

information (Landoli, 2009). Furthermore, it provides tools for the quick creation of teams and networks to be flexible and adaptive based on open standards.

5.2 Employee and organisation benefits of UC

Contemporary UC technologies allow employees to collaborate and effectively share information in real time. A well-designed and implemented UC system significantly lessens multiple communications mechanisms in favour of faster, ad-hoc, one-on-one or group meetings expedited by instant messaging, presence, video, voice and web conferencing capabilities (Kelly, 2010). Online education is another notable application enabling employees' participation in training initiatives from various locations in real time benefitting the organisation by incorporating learning into the workday demands (Heather & Mckeen, 2011). Furthermore, UC tools empower employees to keep in touch with experts instantaneously when probing for particular proficiencies.

Productivity is a vital component of sustainable growth and competitiveness in the management process (Kongkiti et al., 2009). UC and collaboration have proven to enrich customer service, flexibility and competitiveness and reduced costs (Rash, 2010). According to Jones (2017), various explorations illustrated that knowledge exchange has a positive impact and leads to organisational growth and success. A vital component of organisation strategy is the development of a communication system to support effective sharing of knowledge. This notion is further fuelled by the knowledge economy that has triggered a rise of decentralised organisational structures resulting in a rapid virtualised working environment, which depends on virtual teams to achieve organisational objectives (Dušan, Krum & Zorana, 2014).

Collaboration technology perceptively increases the amount of potential expertise and partners accessible to an organisation and, in recent years, a variety of types of inter-organisational associations have become common place (Pisano & Verganti, 2008). Integration from supply chain to design coordination to innovative partnerships have become the norm (Attaran, 2007). In essence, UC improves productivity, reduces costs, enhances performance and user experience (Scott, 2020). The benefits of UC (Orange Organisations Services, 2018) are presented in Figure 5 and focuses on employee connectivity.

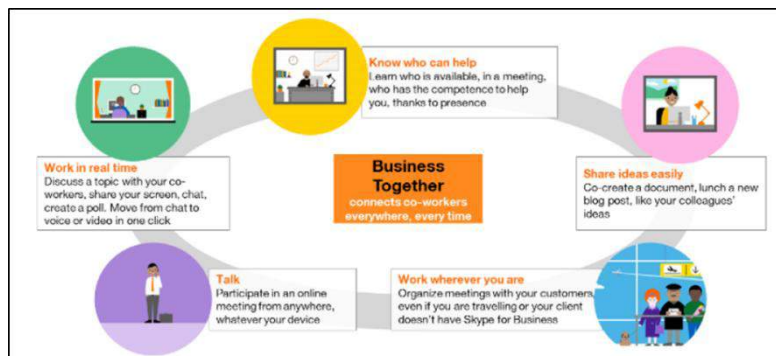


Figure 5. Benefits of UC (Orange Organisations Services, 2018)

5.3 Factors that drive adoption and use of unified communication

Most organisations aim to attain cost reduction and cost efficiency through economies of scale. Through UC a cost savings opportunity is achieved by having platform consolidation with Internet Protocol telephony (IPT), which can lead to the replacement of desk phones with mobiles (Bai, 2020). Another core area of UC, conferences, presents cost savings opportunities by replacing travel with telepresence. Instant messaging introduces additional cost savings which are achieved with the reduced number of phone calls and the ability to keep in touch with employees and clients.

UC enables organisations to improve organisations agility and increase flexible and dynamic working practices (Forrester, 2008). According to Almeida and Lourenço (2011), organisations identify the importance of UC technologies for increasing customer satisfaction, improving productivity and

reducing communications costs. These benefits however, come with Internet risks, which should be mitigated with firewall mechanisms, virtual private network (VPN) technologies and admission control security endpoints within the organisations.

The following factors, which were operationalised from the literature, influence employees' perceptions of the use of UC.

Presence

One of the greatest strengths of UC technologies is the features that include circumstantial presence tracking, which provides details about individual communication method preference and individual availability, intelligent notification services and on-demand switching between communications channels (Gartner, 2008). *Presence is defined as someone who is available or present but not necessarily seen* (Oxford Dictionary). Furthermore, presence information assists employees to perceive the availability of others and notify of their availability so that others know how to reach them easily (Fikry & Mukhtar, 2012). UC has accomplished empowering complex forms of presence signalling. The user's presence can be inferred from technical devices which indicate user presence statuses and can be combined to signal the status of a group (Riemer & Taing, 2009).

Collaboration

Globalising organisations, mobile work, outsourcing, inter-organisational teams, innovation and fulfilling customer and supplier's desires are motivating today's pre-requisite to enhance collaboration within organisations. IT is at centre of these trends (Heather & Mckeen, 2001). IT provides information integrity and connectivity, without which most collaboration energies would not be effective. A key enabler of collaboration is well-designed IT architecture (Johansen, 2007). Collaboration technologies include hardware, software and applications that support the achievement of collaboration (Camarinha-Matos et al., 2009). Collaboration forms part of the internal communication strategy and enables actively working together to achieve mutual goals (Scott, 2020).

Virtual interaction is being enhanced progressively every day with the proportion of time employees' work virtually increasing. Collaboration technologies show a critical role in enhancing knowledge generating and sharing practices and also in developing new products, processes and services (Fink, 2007). Additionally, Pisano and Verganti (2008), stated great ideas can come from anywhere and IT has dramatically reduced the cost of accessing them.

Internet Protocol Telephony (IPT)

The progress of UC was determined by advancement in Internet Protocol infrastructures along with revolutions in software-based communication media, such as instant messaging. In this regard, several voice communications will deliver a smooth and extensive communication experience to employees and clients. The growth of VoIP and other digital tools available on the market has directed organisations communications to enter into a new golden age by enabling the teams to be more productive and effective, where VoIP delivers strong telephony functionality, with texting, messaging and video conferencing added on (Grech, 2008). According to various investigations, the average savings that organisations receive after switching to VoIP range from 30% to 75% savings over traditional phone systems and this saving is likely to be higher than the average if the organisations require rich communications features, international calling or long distance calling (Collins, 2018).

Video Conferencing (VC)

Fikry and Mukhtar (2012) urge that the real-time conferencing (web and video conferencing) condenses the time for decision making for the organisation as it provides easy setup, point-and-click conference launches and links to present management. The use of video-communication is not new and has considerable benefits for connecting individuals in diverse locations, reducing travel time and expense (Oeppen, Shaw & Brennan, 2020). In a face-to-face work setting, teams often have impromptu meetings as they pass each other in the passage or over tea, which is possible on most video conferencing platforms, such as Microsoft Teams or Zoom. The concern with video conferencing is how to instil corporate culture and build trust and cohesion within groups (Alexander,

De Smet & Mysore, 2020). Gartner (2008) predicts that only 25% of organisations meetings will take place in person by 2024 (Karl, Peluchette & Aghakhani, 2021). Limited bandwidth, however, can result in major shortcomings, frustration, reduced performance and less effective action planning when compared to standard face to face meetings (Oeppen et al., 2020).

Instant Messaging (IM)

IM is widely accepted in society, however it is relatively under used in the work environment (Ou & Davison, 2010). IM permits team members to chat using text-based messages. If a team member needs clarity or quick answers, a simple “Instant Message” to each other may be a powerful tool that works in partnership for maximum communication clarity (Quan-Haase, Cothrel & Wellman, 2017). IM has become a valuable tool to support informal communication (Isaacs et al., 2004). The IM feature in UC is vital for effective communication between employees, as it can save time and improve instant communication among employees despite the belief that it can be disruptive (Ou & Davison, 2010). The IM functionality, if it is managed correctly, lets the employees send text messages to one another or to a group, which enables clarification or quick discussions removing the need for lengthy email communication (Aldea et al., 2012).

Conceptual Model

The literature revealed certain factors, which are illustrated in Figure 6, the conceptual model, which was tested in this study. The factors that affect employee perceptions include Usage, Efficiency, Technology and Employee and Business benefits. UC technologies include the factors Presence, Collaboration, IPT, VC and IM.

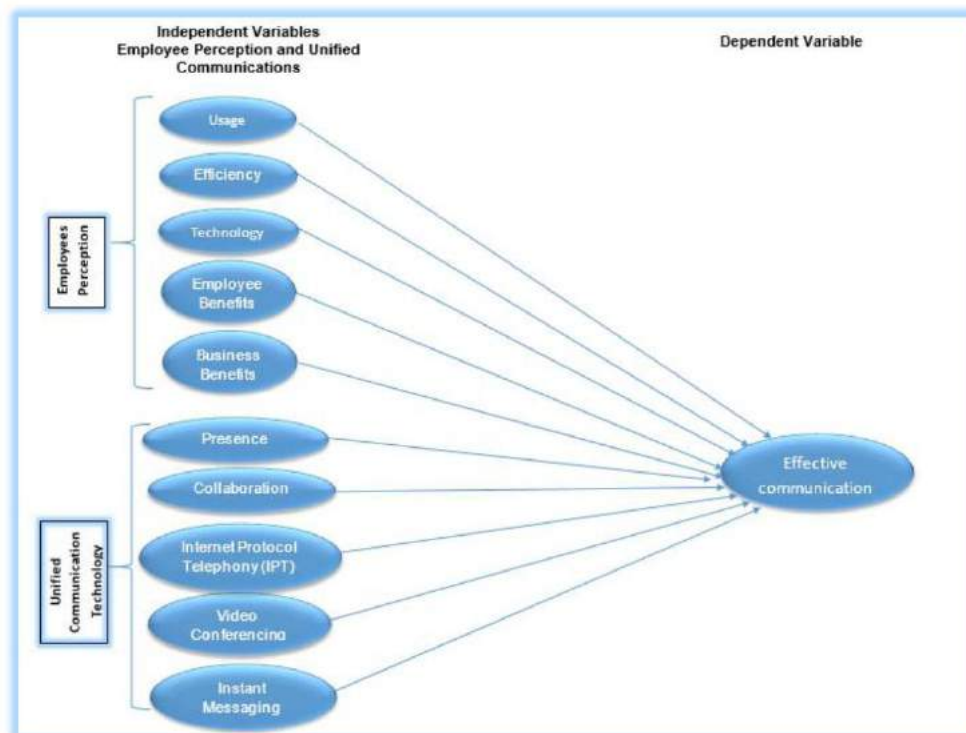


Figure 6: Conceptual model

6. Research Methodology

The study followed a positivistic research paradigm, which is deductive in nature. An empirical evaluation was conducted on the developed UC model containing factors (Figure 6) that influence effective communication and productivity of organisations. The questionnaire was divided into the following sections:

- Section 1 collected demographic information of the employees, who responded to the survey. Demographic information in this section included: age, gender, time period within the organisation, level of qualification, level of job position (operational staff, senior staff and management), preferred method of communication in personal life and preferred method of communication in the working environment;
- Section 2 incorporated a 5 point Likert scale with the statements aimed at gathering respondents' perception with regard to the influence of different factors of (UC) technology like the presence, collaboration, voice internet protocol (VoIP), video conferencing and instant messaging within organisations. Furthermore, section two gathered respondents' perception (EP) with respect to usage, efficiency, technology, employee benefits and organisations benefits on the adoption of this new technology, unified communication, within an organisation; and
- Section 3 asked respondents which functions under UC technology were used most often. A comprehensive list of commonly known UC technologies was outlined for selection by the respondents.

A pilot study was conducted with a convenience sample to examine if there were any impending issues. The pilot study required that the questionnaire be amended before being sent to the respondents. The sample included employees within the organisation who use UC technology for operational purposes. The sample size for this study was 300 respondents throughout the organisation who are currently using UC technology. One hundred and ninety five participants successfully completed the questionnaire representing a 65% response rate.

A 5-point Likert scale was used, ranging from (1) Strongly disagree to (5) Strongly agree. The online survey platform, QuestionPro was used to collect the responses and the university statistical consultant performed the statistical analysis using the Statistica software. Descriptive statistics, ANOVA and Exploratory Factor Analysis (EFA) were conducted using Statistica. Ethics approval was obtained from the university Ethics Committee.

7. Results and Findings

The respondents (n=195) in this study included 47% (n=91) males and 53% (n=104) females (Table 1). The age distribution of respondents for this study ranged from 18 years to older than 56 years. The working experience with the current employer depicted that the majority 51% (n=100) worked in the organisation for 5 years and more. Twenty-three percent (n=44) of the respondents had a diploma qualification, 26% (n=50) a degree qualification and 36% (n=71) a post-graduate degree qualifications. The respondents were 46% (n=90) operational staff, 28% (n=54) senior staff and 26% (n=51) were management level.

Table 1: Demographics (n=195)

Education	Matric	Higher Certificate and Diploma	Degree	PG Degree
	13(7%)	61(32%)	50(26%)	71(36%)
Work experience	<1 year	1-3 years	4-5 years	5+ years
	24(12%)	29(15%)	42(22%)	100(51%)
Level at work	Operational staff	Senior Staff	Management	
	90(46%)	54(28%)	51(26%)	
Gender	Female	Male		
	104(53%)	91(47%)		

The reliability of the measuring instrument is illustrated in Table 2. The Cronbach alpha coefficients reliability was 'excellent' for all the independent factors.

Table 2: Cronbach Alpha Coefficients (reliability) and correlations

Factors	μ	S.D.	Cronbach Alpha	Reliability	p-value	Correlation	Hypotheses
IF ₁ : Presence	3,95	0,70	0,90	Excellent	<.0005	0,455	H ₁ Accepted
IF ₂ : Collaboration	3,89	0,61	0,94	Excellent	<.0005	0,522	H ₂ Accepted
IF ₃ : Internet Protocol Technology	3,89	0,72	0,92	Excellent	<.0000	0,562	H ₃ Accepted
IF ₄ : Video Conference	3,90	0,59	0,83	Excellent	<.0005	0,668	H ₄ Accepted
IF ₅ : Instant messaging	3,84	0,62	0,90	Excellent	<.0005	0,665	H ₅ Accepted
IF ₆ : Usage	2,52	1,10	0,85	Excellent	<.0005	0,266	H ₆ Accepted
IF ₇ : Efficiency	3,75	0,68	0,91	Excellent	<.0005	0,610	H ₇ Accepted
IF ₈ : Technology	3,71	0,66	0,88	Excellent	<.0005	0,673	H ₈ Accepted
IF ₉ : Employment Benefit	3,91	0,64	0,90	Excellent	<.0005	0,702	H ₉ Accepted
IF ₁₀ : Organisation's Benefits	4,06	0,62	0,92	Excellent	<.0005	0,619	H ₁₀ Accepted
DF: Effective Communication	3,50	0,76	0,97	Excellent	0.093		

A correlation coefficient is statistically significant at 0.05 level for a sample size n ranging from 150 to 200 if $|r| \geq r_{crit}$ ranging from 0.159 to 0.138. A correlation coefficient with an absolute value greater than 0.300 can be considered as almost significant and of reasonable scale and those more than 0.50 represents a strong statistical correlation. The results of the analysis show that the most important determinants for UC technology collaboration are Presence ($r = 0.455$, $p < 0.005$) and Internet Protocol Telephony (IPT) ($r = 0.562$, $p < 0.005$). These UC technology factors are more critical and significant for collaboration of technology within the organisation and explain 88% of the variance in UC technology collaboration. Factors such as presence and IPT are more likely to improve the collaboration of technology that can influence effective communication within organisations. The independent factor Usage did not correlate ($r=0,222$) with Effective Communication and was not included in the final model.

Results further indicate that the most important determinants for employee perception factors are Technology ($r = 0,673$, $p < 0.005$) and Employee Benefits ($r = 0.702$, $p < 0.005$). These employee perceptions factors along with collaboration factors are more critical and significant for effective communication within the organisation. Factors such as technology and employee benefits are more likely to improve the employees' perception that can impact effective communication within organisations.

According to the multiple regression r^2 , two (2) independent variables for employee perception along with collaboration explain 54% of the variance in effective communication within an organisation, which is an indication that the selected variables are important factors influencing effective communication within an organisation. Technology and employee benefits and collaboration are more important in employee perceptions and can influence effective communication within an organisation. The employee perceptions along with collaboration have influence on effective communication within an organisation. Henceforth, it is significant that UC technology collaboration along with employee perception can influence communication in the organisation.

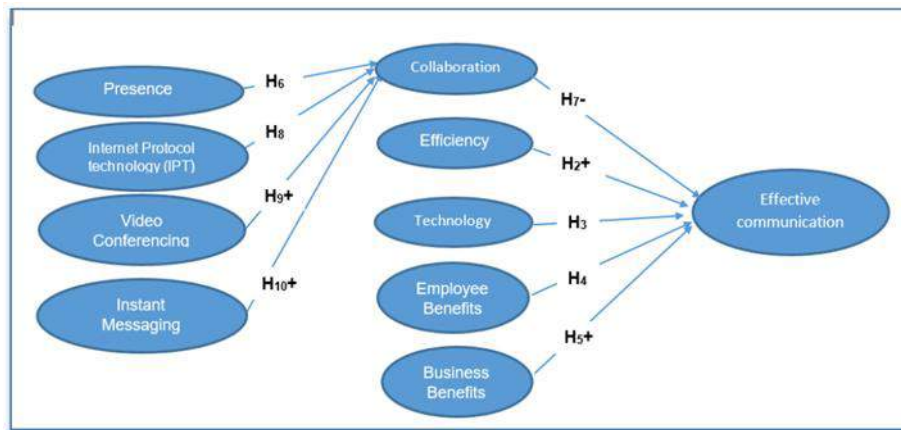


Figure 7: Final tested model after EFA

The final model illustrated in Figure 7 proved to be a satisfactory model for evaluating the effective communication within an organisation with unified technology. In this model, the factor Usage was removed. The results from the study shows that UC Presence and Internet protocol telephony (IPT) are factors that are most likely capable of influencing Collaboration of UC technology. The employees’ perception UC technology and Employee Benefits along with Collaboration are most likely to influence effective communication within an organisation.

8. Managerial Implications

Unified Communications will play an increasingly important role as people adapt to the evolving digital world through which they communicate and collaborate to improve the productivity within the organisation. Presence, which is defined as being available or present but not necessarily seen, attributes to growing employee flexibility, availability and accessibility and the sharing of knowledge which makes it easier to make decisions and respond quickly. Presence allows employees to work flexibly, which is in keeping with the new world of work and working from anywhere. This functionality depends on the IPT to be in place, structured properly and functioning well within an organisation to manage what is demanded in business in real time. This improves the competitive edge and makes service to customers more proactive and efficient in response time. The findings of this study highlight the importance of an organisation’s communications strategy. Table 3 highlights management interventions recommended by this study.

Table 3: Proposed managerial interventions (Author’ construction)

Business outcome	Description	Outputs to achieve outcomes
Cost efficiency	Reduction in national and international travel. Reduction in telephony costs.	Less dead time travelling. Reduce direct travel costs and carbon footprint.
Growth	Collaborate more effectively with distributed customers and partners. Effective collaboration with internal stakeholders	Open new geographic areas for opportunities. Productive collaborative interaction.
Time to Market	Team across geo-diverse regions.	Faster decision making through real time collaboration.
Credibility	Robust secure platforms.	High quality communication through infrastructure and networks.
Sustainability and talent attraction	Enable employees to collaborate in the workspace of tomorrow.	Work from anywhere. Flexibility. Increased agility. Improved collaboration- internally and externally.

9. Conclusions, limitations and future research

Previous studies have shown that efficient organisational processes coupled with the use of unified collaboration improves knowledge transfer and employee productivity (Riemer & Taing, 2009). Ferris et al. (2009) state that a good working relationship between team members, irrespective of physical nearness, is the basis of how most of the work is accomplished and objectives are reached within an organisation. The findings of this empirical study on effective communication, indicated that most of the respondents positively agreed that UC improved communication, UC increased employee performance and UC created positive effectiveness among employees. Further analysis of the results for this study indicated that the majority of the respondents agree that UC technology, along with Collaboration, have an effect on communication within an organisation.

Comparing Effective Communication within the organisation and various demographics, it was determined that a significant relationship existed between age and effective communication, between length of service and effective communication and between level at work and effective communication. The findings imply that younger people are familiar and see all the advanced UC technologies available in the market, adapt them and change the means of communication to accommodate their daily routines much more easily.

Furthermore, it was also evident that junior staff and management agreed and accepted that UC technologies can make communication more effective within the organisation, which is different to the view of middle management. It implies that the communication amongst and between junior staff and management is more efficient and effective than that of other levels of staff. This supported the statement by Reeves et al. (2008) that more collaborative and networked structures create conducive leadership and work environments with transparent information and competences, which enables decision making in accordance with the organisation's values, beliefs and responsibilities.

This study indicated that Effective Communication is essential for an organisation to function more efficiently by developing a strong working relationship amongst employees. Communication tools are essential as they make employees more efficient. The use of the correct UC technologies and collaboration, creating awareness of the UC technologies and providing training on the UC technologies for the employees within an organisation can create efficient communication and improve the productivity within organisations. The significant findings from this study are that UC improves collaboration between employees and this collaboration could increase employee productivity through effective communications within organisations. It was also evident that UC provides an improved communication flow encouraging stronger relationships among employees contributing to enhanced collaboration and a better quality of work.

Management should create awareness on how the use of UC technology benefits the employees. Furthermore, management must also create awareness among the employees how UC technology will assist the organisation to be competitive in the market with cost reductions and effective strategy. Creating awareness only, will not improve effective communication, it should also be accompanied by training on UC technology features given to the employees. Strategic Communication is essential in a digitally transforming and globally distributed workforce. For this to happen, communication must be clear and accessible across a number of touchpoints (Scott, 2020). Effective Communication is essential for an organisation to function more efficiently by having productivity enhancement and a strong working relationship among employees.

The limitations of the study is that it was conducted during the COVID-19 pandemic which limited the response rate. Future research will focus on the impact of the COVID-19 pandemic and how it has forced people to work from home, thus future research should focus on UC post-COVID-19.

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Developing a Framework For Assessing The Influence of Public Service Motivation on Core Work Evaluation and Counterproductive Work Behaviour

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Keywords

Core work evaluation
Counterproductive
work behaviour
Job satisfaction
Organisational
commitment
Public service
motivation
Work engagement

Abstract

The outcomes of low levels of public service motivation are low job satisfaction, organisational commitment, engagement and high levels of counterproductive work behaviour. This study's primary aim was to develop a framework to assess the influence of public service motivation on core work evaluation (job satisfaction, organisational commitment, work engagement) and counterproductive work behaviour among employees at 11 North West provincial government departments

The study was conducted within the quantitative research paradigm using a cross-sectional correlational survey design. The population included 61 954 public-service employees. The study used a stratified random sampling method consisting of four subgroups: senior management, middle management, junior middle management, and elementary employees.

The results revealed a positive correlation between PSM and JS, while OC positively correlated with PSM. Work engagement, PSM, OC and JS are positively related, while CWB negatively affects PSM, JS and WE. The measuring instruments were reliable and valid in the North West provincial government departments.

This study provides a theoretical and conceptual framework that public-sector managers can use to assess the impact of public service motivation on core work evaluation and counterproductive work behaviour.

1. Introduction

This research aimed to construct a framework to evaluate the impact of public service motivation (PSM) on core work evaluation (job satisfaction, organisational commitment, work engagement) and counterproductive work behaviour (CWB). Extensive research has investigated the influence of public service motivation on behavioural and work attitudes such as job satisfaction (Stefurak *et al.*, 2020; Homberg *et al.*, 2015; Crucke *et al.*, 2021; Bright, 2021; Palma, 2016; Kim *et al.*, 2013; Prysmakova & Vandenabeele, 2020; Boyd, Nowell, Yang & Hano, 2018), organisational commitment (Potipiroon & Ford, 2017; Pratama & Nurhidayah, 2019; Boyd & Nowell, 2020), work engagement (Vinarski Peretz, 2020; Mussagulova, 2021; De Simone *et al.*, 2016; Cooke, 2019), and counterproductive work behaviour (Vogel *et al.*, 2016; Koumenta, 2015). However, the literature is inconclusive about the influence of PMS on JS, OC, WE and CWB.

No previous research has investigated the influence of PSM (independent variable) on CWE such as JS, OC, WE and CWB (dependent variables) within the South African public-service context. These dependent variables can also be regarded as outcomes of PSM. Therefore, this study filled the gap by developing a framework to assess the influence of PSM on core work evaluation (JS, OC, WE) and CWB of employees in all 11 North West provincial government departments.

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This study developed a theoretical and conceptual framework for evaluating the impact of PSM on CWE (JS, OC, WE) and CWB. This research contributes to the theory and application of behavioural dimensions such as PSM, JS, OC, WE and CWB. Additionally, the measuring instruments were validated within the South African public service context. The study's results confirmed PSM's potential positive outcomes or consequences. For example, high levels of PSM led to high levels of JS, OC, WE and low levels of CWB. Therefore, motivated public service employees will have high JS, OC and WE, and these positive work behaviours will help prevent counterproductive behaviour (including corruption), which is necessary for effective corporate governance, service delivery, policy formation and implementation.

The following sections focus on the problem investigated, research objectives, hypotheses, literature review, methodology, results, discussion of results, managerial implications and conclusion.

2. Problem investigated

Public-service employees' low degree of PSM, JS, OC and WE and a high degree of CWB have been significant concerns (Perry & Vandenabeele, 2015). *The problem that was investigated is that the low levels of PSM led to decreased CWE (JS, OC, WE) and increased CWB.*

3. Research objectives

The study's objectives are to:

- Establish whether public service motivation, job satisfaction, organisational commitment, work engagement and counterproductive work behaviour scales are reliable and valid within the South African public-sector context.
- Investigate the relationship between public service motivation, job satisfaction, organisational commitment, work engagement and counterproductive work behaviour.

4. Hypotheses

The following hypotheses were developed in line with the research objectives:

- H1₀: The PSM, JS, OC, WE, and CWB scales will not be reliable and valid within the South African public-sector context.
- H1_A: The PSM, JS, OC, WE, and CWB scales will be reliable and valid within the South African public-sector context.
- H2₀: There is no positive relationship between PSM, JS, OC and WE and no negative relationship between PSM and CWB.
- H2_A: There is a positive relationship between PSM, JS, OC and WE and a negative relationship between PSM and CWB.

5. Literature review

The literature review focuses on the five constructs used in this study. The independent variable is PSM, while the dependent variables are JS, OC, WE and CWB. The literature review is aligned with the research objectives and hypotheses. Therefore, the literature review focuses on public service motivation, core work evaluation (job satisfaction, organisational commitment, work engagement) and counterproductive work behaviour. After that, the reliability and validity of the measuring instruments and the relationship between the constructs are discussed.

5.1 Public service motivation

Andersen *et al.* (2020) assert that PSM is an individual's attitude toward providing services to others to benefit society. Public service motivation is a broad term for "an individual's commitment to providing services to others to do good for individuals and society" (Caillier, 2014). According to Van Loon *et al.* (2018), PSM can be viewed as an individual's drive toward presenting public offerings that stem from rational (desiring to participate in and embellish public offerings), normative (dedication to the public hobby and a sense of duty), and affective (compassion and identification

with others) motives. According to Kim (2018), PSM is a multidimensional term comprising (1) self-sacrifice (SS); (2) compassion (COM); (3) attraction to public service (APS); and (4) commitment to public values (CPV). This study used Kim *et al.*'s (2013) International Public Service Motivation Scale to measure PSM. The scale consists of 16 items and four factors: attraction to public service – 4 items; commitment to public values – 4 items; compassion – 4 items and self-sacrifice – 4 items.

5.2 Core work evaluation

Core work evaluation (CWE) is a summary psychological assessment of an individual's work environment that focuses on the job, organisation and work activities (Webster *et al.*, 2014). The three sub-constructs comprising the core work evaluation are job satisfaction, work engagement and organisational commitment.

5.2.1 Job satisfaction

Job satisfaction is a happy or positive emotional state that results from an evaluation of one's job or experiences, or, more simply, "the degree to which individuals like (satisfaction) or loathe (dissatisfaction) their employment" (Top *et al.*, 2015). Job satisfaction consists of various dimensions and factors. In this study, the Facet Satisfaction Scale developed by Bowling *et al.* (2018) was used to measure JS. There are five factors and 25 items on the JS facet scale: work itself – 5 items; supervision – 5 items; co-workers – 5 items; pay – 5 items; and promotion – 5 items.

5.2.2 Organisational commitment

Organisational commitment refers to an employee's psychological relationship with their employer (Potipiroon & Ford, 2017), while Albdour and Altarawneh (2014) define OC as "the degree to which an individual identifies with and participates in a particular organisation." Meyer and Allen contributed to the literature on OC by proposing a three-component model of OC, including normative, emotional and perseverance (Thabane *et al.*, 2017). Regarding OC, Buda and Ling (2017) called these three key elements: affective (AC), continuance (CC) and normative (NC).

A worker's emotions are intimately tied to AC, which refers to the employee's emotional attachment to the organisation. It mainly entails forming an emotional bond with the organisation, identifying with it, and wanting to remain loyal to it. Continuance commitment refers to an employee's awareness of the costs associated with leaving or remaining with the organisation (Buda & Ling, 2017; Thabane *et al.*, 2017). If people believe that remaining with the organisation is greater than the cost of leaving, they will prefer to remain. Unlike AC, CC refers to a psychological attachment that encompasses the effort, time and growth invested in staying with the same organisation for many years. Finally, NC displays a worker's feeling of organisational duty. It has to do with the employee's strong level of obligation to continue working (Buda & Ling, 2017; Koc, 2018).

The organisational commitment was measured using Allen and Meyer's OC scale (1996), as validated by Maqsood *et al.* (2012). The questionnaire consists of three factors and 22 items: AC – 8 items, CC – 6 items and NC – 8 items.

5.2.3 Work engagement

Work engagement is defined as a positive, satisfying and work-related state of mind with three components: physical, emotional and cognitive (Wang *et al.*, 2017), while Pandita and Singhal (2017) defined work engagement as an attitude or behaviour characterised by being drawn to, committed to, busy with, involved in, and retained in the work or organisation. The three components of WE are vigour, commitment and immersion (Wang *et al.*, 2017). According to Junça-Silva, Caetano and Lopes (2017), there is a need to extend research on job engagement and examine it as a process due to its potential to improve workplace outcomes. Costa *et al.* (2016) presented a three-dimensional structure of WE, characterised by vigour (high levels of energy when working), dedication (strong involvement in one's job, experiencing a sense of enthusiasm), and absorption (complete concentration on one's work).

The Work Engagement Scale (WES), developed by Schaufeli and Bakker (2004), was utilised to measure WE. The questionnaire has 17 questions and three factors: vigour – 6 items, dedication – 5 items and absorption – 6 items.

5.3 Counterproductive work behaviour

Counterproductive work behaviour is defined as “a set of volitional acts as opposed to accidental or mandated that harm or intend to harm organisations and their stakeholders” (Spector *et al.*, 2006). In addition, counterproductive work behaviour is defined as any purposeful act by a member of an organisation that is deemed to go against the organisation’s legitimate interests (Whelpley & McDaniel, 2016). Workplace counterproductive behaviour encompasses a range of actions, including unproductive work behaviour, workplace misbehaviour, workplace deviance and workplace bullying (Fatima, 2016). According to DeShong *et al.* (2015), CWBs result in some undesirable consequences, including financial losses (e.g. paying or accepting bribes, fraud) and damage to the corporation’s reputation (e.g. discriminating against co-workers). In addition, counterproductive work behaviour can negatively impact the performance and wellbeing of the individual engaged in CWB, the individuals interacting with the one engaging in CWB, and the organisations where CWB occurs (Whelpley & McDaniel, 2016).

This study focuses on two dimensions of CWB: counterproductive workplace behaviour – organisation; and counterproductive workplace behaviour – person. Therefore, the CWB checklist developed by Spector *et al.* (2006) was utilised to assess CWB. The questionnaire includes 45 items and two factors. However, Spector *et al.* (2006) excluded items 12 and 45 in their analysis. Therefore, these two items were also excluded from this study.

5.4 Reliability and validity of the measuring instruments

The measuring instruments were validated and found to be reliable by the developers of the scales. Cronbach’s alpha internal consistency coefficient was used to determine each scale’s reliability. A Cronbach’s alpha value of 0.7 or greater is widely considered acceptable, whereas a value between 0.5 and 0.7 indicates moderate sample adequacy (Taber, 2018; Bell *et al.*, 2018). However, a scale with a value less than 0.5 is considered inconsistent (Walsh, 2003). Table 1 shows Cronbach’s alphas for the factors and scales.

Table 1: Reliability analysis

Scale and sub-scales	Authors	Cronbach's alpha	Number of items
APS	Kim <i>et al.</i> (2013)	0.70	4
CPV		0.54	4
Compassion		0.69	4
SS		0.78	4
PSM Scale		0.74	16
Work itself	Bowling <i>et al.</i> (2018)	0.72	5
Supervision		0.83	5
Co-workers		0.77	5
Pay		0.83	5
Promotion		0.82	5
Facets JS Scale			
AC	Allen and Meyer (1996) as validated by Maqsood <i>et al.</i> (2012)	0.83	8
CC		0.61	6
NC		0.64	8
OC Scale		0.84	22
Vigour	Schaufeli and Bakker (2004)	0.83	6
Dedication		0.92	5
Absorption		0.82	6
WE Scale			17
CWB-Organisation	Spector <i>et al.</i> (2006)	0.84	21
CWB-Person		0.85	22
CWB Scale		0.81	43

CFA is often used for studies developing and adapting scales with specific reference to (i) psychometrically evaluating measurements, (ii) validation of the structure, and (iii) testing the effect of the model (Kořar & Kořar, 2015). The International PSM instrument was validated by Kim *et al.* (2013), and the confirmatory factor analysis (CFA) revealed 16 items and four factors and found that the model fit is quite strong (SB_x^2 [df= 98] = 564.1, $p < .05$; CFI = 0.989; root mean square error of approximation (RMSEA) = 0.041 [.038,.044]; SRMR = 0.042). Therefore, the results support convergent validity, while the composite reliability of the set of reflective indicators for each dimension of PSM ranged from .716 to .824, indicating adequate internal consistency. The factor structure showed a four-factor structure with all items loading significantly onto their *a priori* dimension ($p < .05$), and the SFLs ranged from .556 to .812. The results support discriminant validity as the correlation estimates between the four factors ranged from .482 to .851.

The CFA of the facets JS scale measuring JS indicated that the FFM produced marginally good fit ($\chi^2 = 537.78$, $df = 265$; RMSEA = 0.08; CFI = 0.91; TLI = 0.90; SRMR = 0.06) (Bowling *et al.*, 2018). Bowling *et al.* (2018) also found that each “subscale produced high levels of internal consistency reliability, test-retest reliability and construct validity.” Maqsood *et al.* (2012) validated Allen and Meyer’s (1996) OC scale by conducting a CFA to test how well data supported the factor structure of the measures on individual item scores. Goodness-of-fit statistics of the three-factor model of the OCQ were “ $X^2 = 636.76^*$; $df = 206$; RMR = .10; RMSEA = .07; GFI = .87; AGFI = .84; IFI = .89; NFI = .85; CFI = .89; AIC = 783.97 and CAIC = 1021.53.” In addition, the correlation matrix of factors revealed that AC relates with NC ($r = .50$, $p = .01$) and with subscale of CC ($r = .29$, $p = .01$); and CC relates to NC ($r = .33$, $p = .01$).

A CFA of the UWES 17-item questionnaire to determine the factor structure and inter-correlations revealed “ $N = 1,242$; $X^2 = 1859.93$; $df = 232$; GFI = .82; AGFI = .77; RMSEA = .08; NFI = .86; NNFI = .85 and CFI = .87.” (Schaufeli & Bakker, 2004). The correlations between factors of UWES were very high (Vigour - Dedication .89; Dedication - Absorption .90 and Vigour - Absorption .90) (Schaufeli & Bakker, 2004).

Barbaranelli *et al.* (2013) conducted a CFA to validate the two-factor CWB scale. The two factors indicated “a significant and high correlation of .80”. Goodness-of-fit indices indicated an ambiguous solution: $X^2(859, N = 856) = 1,897, p < .001, RMSEA = .038$ [90% confidence interval: LL = .035, UL = .040, $p(RMSEA.05) = 1$], comparative fit index (CFI) = .88, TLI = .87, and weighted root mean square residual (WRMR) = 1.55. The RMSEA indicated an excellent fit to the data, while the other fit indices converged, evidencing an inadequate fit,

5.5 Relationship between public service motivation, job satisfaction, organisational commitment, work engagement and counterproductive work behaviour

Public service motivation affects CWE such as JS, OC, work engagement (WE) and CWB, either positively or negatively. A meta-analysis done by Homberg *et al.* (2015) revealed a “positive relationship between public service motivation (PSM) and job satisfaction (JS)” and considered PSM as a predictor of job satisfaction. Crucke *et al.* (2021) also found that PSM is a predictor of JS. Furthermore, studies by Bright (2021), Palma (2016) and Kim *et al.* (2013) revealed that PSM positively related to JS significantly. This positive relationship was confirmed in a study by Prysmakova and Vandenabeele (2020) among police officers in Poland and Belgium, which showed “that officers with higher levels of public service motivation also have higher levels of job satisfaction.” Furthermore, Breugh *et al.* (2018) found that “APS and CPV were significantly related to JS, while SS and COM were not.” However, a study by Boyd, Nowell, Yang and Hano (2018) showed that PSM was not significantly correlated to JS.

Wu, Ming and Huang (2019) found a negative relationship between JS and unethical behaviour. This negative relationship was confirmed by Wang *et al.* (2020), who found that JS and OC are negatively related to workplace deviance. However, Czarnota-Bojarska (2015) found a weak correlation between counterproductive work behaviour and work satisfaction.

Castaing's (2006) findings revealed a positive association between PSM, affective, normative and continuance commitment, while Potipiroon and Ford (2017) also found that PSM had a significant positive effect on OC. The study results of Nikkah-Farkhani *et al.* (2017) showed that OC “had a negative and significant effect on counterproductive work behaviour.” Baysal *et al.* (2020) found a negative relationship between abuse, withdrawal, affective and NC. In addition, there was a negative correlation between abuse, theft, withdrawal and continuance commitment.

Ugaddan and Park's (2017) study revealed a positive relationship between PSM and WE. On the other hand, Ariani (2013) found “a negative relationship between work engagement and counterproductive work behaviour”, while Filipkowski and Derbis (2020) confirmed “a negative correlation between work engagement and counterproductive work behaviour.”

The results of a study done by Vogel *et al.* (2016) showed a negative association between PSM and deviant behaviour (CWB), while Koumenta (2015) also found a negative and significant relationship between PSM and CWB. Vandenabeele (2009) found “that two of the four dimensions of PSM, namely politics and self-sacrifice, are entirely mediated by job satisfaction and normative and affective commitment, respectively.”

Based on the literature, the results revealed that high levels of PSM positively affect JS, OC and WE, and negatively affect CWB.

6. Methodology

6.1 Research method and design

This study was conducted within the quantitative paradigm. Therefore, a cross-sectional correlational design was deemed the most appropriate design to attain the research objectives.

6.2 Population

The study's target population comprises employees between post levels 1 and 16 at 11 North West provincial government departments. These include the Department of Education and Sports Development, Department of Public Works and Roads, Department of Community Safety and Transport Management, Department of Social Development, Department of Rural, Environment and Agricultural Development, Premiers Office, Department of Health, Department of Local Government and Human Settlement, Department of Tourism, Department of Economy and Enterprise Development, and Department of Culture, Arts and Traditional Affairs.

6.3 Sampling method

The study used a stratified simple random sampling method consisting of four subgroups (strata), namely senior management (SMS salary levels 13-16); middle management (MMS salary levels 11-12), junior middle management (JMM salary levels 8-10) and elementary employees (salary levels 1-7). A total sample size of 1 546, in line with the recommendation of Krejcie and Morgan (1970), was selected from the study population in the 11 provincial government departments to represent the strata: senior management, middle management, junior management and elementary staff. The sample of 1 546 representing the four subgroups (strata) per department is depicted in Table 2.

Table 2: Sample size per strata and department

Department	Senior management	Middle management	Junior management	Professionals/Elementary
Department of Education and Sport Development	14	33	29	77
Department of Public Works and Roads	12	27	39	92
Department of Community Safety and Transport Management	19	41	36	190
Department of Social Development	16	21	32	62
Department of Rural, Environment and Agricultural Development	9	18	14	67
Premiers Office	18	36	45	138
Department of Health	5	12	9	68
Department of Local Government and Human Settlement	8	15	12	55
Department of Tourism	8	19	13	61
Department of Economic and Enterprise Development	11	8	19	76
Department of Culture, Arts and Traditional Affairs	4	12	8	38
Total	124	242	256	924

Out of 1 546 questionnaires distributed, 1 031 were completed and returned. The response rate was 66.68%.

6.4 Measuring instruments

The questionnaire was divided into six sections. Section A comprises the respondents' demographic characteristics, including gender, age group, post-salary level, years of service, provincial government department and qualification; Section B comprises the questions relating to PSM; Section C measured JS; Section D OC; Section E WE, and Section F CWB.

The International PSM Scale, developed by Kim *et al.* (2013), was used to measure PSM. The Facet Satisfaction Scale of Bowling *et al.* (2018) measured job satisfaction. Allen and Meyer's (1996) scale, as validated by Maqsood *et al.* (2012), was used to measure OC. The shortened WES of Schaufeli and Bakker (2004) was used to measure WE, while the Counterproductive Work Behaviour Checklist, developed by Spector *et al.* (2006), was used to measure CWB.

6.5 Data analyses

The data was analysed using the following statistical techniques to attain the study's research objectives:

Descriptive statistics

Tables, graphs, means and standard deviations were used to present descriptive data. A frequency table was created to summarise the respondents' demographic information, including gender, age group, post-salary level, years of service, department and qualification.

Reliability and validity of the measuring instruments

Cronbach's alphas were calculated to determine the reliability of the factors and scales measuring PSM, JS, OC, WE and CWB. The validity of the measuring tools was determined using exploratory and confirmatory factor analyses. Exploratory and confirmatory factor analyses were done to determine the validity of the measuring instruments within the South African public service context.

Pearson's product-moment correlation

Pearson's product-moment correlation (r) was used to measure the relationship between PSM, JS, OC, WE and CWB.

7. Results

According to Table 3, the sample was almost evenly distributed by gender, with 50.2 % of respondents ($n = 518$) identifying as male and 49.8 % ($n = 513$) as female. The majority of respondents ($n = 370$; 35.9 %) fell into the 40 to 49 age bracket, followed by respondents in the 50 to 59 age bracket ($n = 242$). Additionally, 22.4 % ($n = 231$) of the sample fell into the 30 to 39 age bracket, while 10.1 % ($n = 104$) fell into the 20 to 29 age bracket. The smallest group of respondents were aged 60 and over ($n = 84$; 8.1 %). The 16 post-salary levels were divided into four subpopulations, namely senior management (SMS – salary levels 13-16), middle managers (MMS salary levels 11-12), junior middle managers (JM salary levels 8-10) and elementary staff (professionals salary levels 1-7). Most respondents ($n = 431$; 41.7 %) had worked for the North West provincial administration (departments) for six to ten years, while the fewest respondents, 1.2 % ($n = 12$), had at least 21 years of work experience. The Department of Community Safety and Transportation Management employed 18.5 % ($n = 191$) of the respondents, followed by the Premier's Office ($n = 158$; 15.3 %), while the Department of Culture, Arts and Traditional Affairs (CATA) employed only 4% ($n = 41$) of the sample. This was expected, as CATA is one of the province's smallest departments. Finally, most respondents (36.7 %) presented a diploma as their highest qualification, followed by 22.8 % ($n = 235$) with a master's degree, and only 4.1 % ($n = 42$) with a doctoral degree (PhD).

Table 3: Demographic characteristics of the sample

Variable	Level of the variable	N	%	Cumulative %
Gender	Male	518	50.2	50.2
	Female	513	49.8	100.0
Age	20-29	104	10.1	10.1
	30-39	231	22.4	32.5
	40-49	370	35.9	68.4
	50-59	242	23.5	91.9
	60 and older	84	8.1	100.0
Salary level	Salary level 1	54	5.2	5.2
	Salary level 2	55	5.3	10.6
	Salary level 3	47	4.6	15.1
	Salary level 4	59	5.7	20.9
	Salary level 5	65	6.3	27.2
	Salary level 6	98	9.5	36.7
	Salary level 7	69	6.7	43.4
	Salary level 8	68	6.6	50.0
	Salary level 9	98	9.5	59.5
	Salary level 10	102	9.9	69.4
	Salary level 11	64	6.2	75.6
	Salary level 12	109	10.6	86.1
	Salary level 13	83	8.1	94.2
	Salary level 14	38	3.7	97.9
	Salary level 15	18	1.7	99.6
	Salary level 16	4	0.4	100.0
Years' service	0-5 years	252	24.4	24.4
	6-10 years	431	41.8	66.2
	11-15 years	244	23.7	89.9
	16-20 years	92	8.9	98.8
	21-25 years	3	0.3	99.1
	26-30 years	2	0.2	99.3
	31-35 years	1	0.1	99.4
	36-40 years	3	0.3	99.7
	41 and more years	3	0.3	100.0
Department	Education and Sport Development	102	9.9	9.9
	Public Works and Roads	113	11.0	20.9

Variable	Level of the variable	N	%	Cumulative %
	Department of Community Safety and Transport Management	191	18.5	39.4
	Social Development	88	8.5	47.9
	Rural, Environment and Agricultural Development	72	7.0	54.9
	Premiers Office	158	15.3	70.2
	Health	63	6.1	76.3
	Local Government and Human Settlement	60	5.8	82.2
	Tourism	67	6.5	88.7
	Economy and Enterprise Development	76	7.4	96.0
	Culture, Arts and Traditional Affairs	41	4.0	100.0
Qualification	National Certificate (Matric)	42	4.1	4.1
	Higher Certificate	11	1.1	5.1
	Advanced Certificate	26	2.5	7.7
	National Diploma	150	14.5	22.2
	Diploma	72	7.0	29.2
	Post-Graduate Diploma	157	15.2	44.4
	Degree	158	15.3	59.7
	Honours degree	138	13.4	73.1
	Master's degree	235	22.8	95.9
	Doctoral	42	4.1	100.0

Source: Own compilation

The study's first objective was to determine the reliability and validity of scales measuring PSM, JS, OC, WE and CWB within the South African public-sector context. The Cronbach's alpha coefficient for the JS scale was 0.888, considered acceptable and consistent. Therefore, given the sample characteristics, the scale will revert to the same results after several iterations. Similarly, JS sub-scales ranged from 0.715 to 0.845. Cronbach's alpha values for AC, CC, NC, and OC were between 0.5 and 0.7, indicating moderate sample reliability for the specified scales (see Table 4). The Cronbach's alpha coefficient for the WES was 0.947, considered excellent, with sub-scales ranging from 0.849 to 0.876. Similarly, the PSM scale was 0.833, reliable, with sub-scales ranging from 0.553 (i.e. commitment to the public service) to 0.806 (i.e. commitment to the public service) (i.e. self-sacrifice).

Simultaneously, the reliability coefficient for CWB was 0.968, with the two sub-scales reverting to 0.893 for organisational CWB and 0.970 for individual CWB.

Table 4: Results of the reliability test

Factor and scales	Items	Cronbach's alphas	Mean	Std. dev.
Work itself	5	0.715	19.41	5.420
Supervision	5	0.834	18.26	8.046
Co-workers	5	0.793	24.34	5.647
Remuneration	5	0.845	19.80	7.265
Promotion	5	0.820	13.35	6.891
JS Scale	25	0.888	95.16	22.979
AC	8	0.642	27.93	7.162
CC	6	0.600	21.78	5.801
NC	8	0.524	27.01	6.032
OC Scale	22	0.664	76.72	12.697
Vigour	6	0.849	30.68	7.105
Dedication	5	0.876	25.19	7.636
Absorption	6	0.851	30.87	7.397
WE Scale	17	0.947	86.75	21.048
APS	4	0.726	18.80	1.480
CPS	4	0.553	18.52	1.749
Compassion	4	0.743	18.539	1.601
SS	4	0.806	15.81	3.031
PSM Scale	16	0.833	71.688	5.599
CWB-Organisation	20	0.893	28.70	8.018
CWB-Individual	22	0.970	26.67	8.898
CWB Scale	43	0.968	56.46	16.211

Source: Own compilation

Exploratory and confirmatory factor analyses were used to determine the validity of the measuring instruments. On scales of PSM, CWE constructs (JS, WE, and OC), and CWB, the Kaiser-Meyer-Olkin (KMO) sampling adequacy measure and Bartlett's test of sphericity were computed first. After the EFA, CFA was performed to retain the number of factors and determine the validity of each scale.

Results in Table 5 present the factor loadings based on a principal component extraction with Oblimin and Kaiser normalisation rotation for PSM. According to the results, six items loaded onto Factor 1 measuring APS. This factor was labelled *attraction to public service*. All six items loaded positively onto the first factor. Four items loaded onto Factor 2, measuring CPV. This factor was labelled *commitment to public values*. All four items loaded positively onto the second factor. Two items loaded onto Factor 3 measuring compassion. This factor was labelled *compassion*. One item loaded positively, and the other loaded negatively onto the third factor. Finally, four items loaded onto Factor 4, measuring self-sacrifice. This factor was labelled *self-sacrifice*. All four items loaded negatively onto the fourth factor.

Table 5: Factor loadings based on a principal component extraction with Oblimin with Kaiser normalisation rotation for PSM

Statements	Factors			
	1	2	3	4
It is fundamental that the interests of future generations are taken into account when developing public policies.	0.897			
To act ethically is essential for public servants.	0.800			
I empathise with other people who face difficulties.	0.789			
I feel sympathetic to the plight of the underprivileged.	0.619			
It is important to contribute to activities that tackle social problems.	0.513			
It is important that citizens can rely on the continuous provision of public services.	0.415			
I would agree to a good plan to make a better life for the poor, even if it costs me.		0.901		
I am willing to risk personal loss to help society.		0.814		
I believe in putting civic duty before self.		0.778		
I am prepared to make sacrifices for the good of society.		0.614		
I think equal opportunities for citizens are very important.			-0.860	
I admire people who initiate or are involved in activities to aid my community.			0.531	
Meaningful public service is very important to me.				-0.864
It is important for me to contribute to the common good.				-0.827
I get very upset when I see other people being treated unfairly.				-0.738
Considering the welfare of others is very important.				-0.598

Source: Own compilation

A parallel analysis was conducted to confirm the existence of the JS scale's factor count. As determined by the analysis, five factors had eigenvalues greater than the corresponding criterion value for a similarly-sized randomly generated data matrix. A confirmatory analysis was conducted using a forced five-factor rotation, as shown in Table 6. The forced five-factor loading based on a principal component extraction with Oblimin and Kaiser normalisation rotation for JS is depicted in Table 6. Four items were loaded onto Factor 1, measuring supervision according to the results. Therefore, this factor was labelled *supervision*. Of the four items, all four items loaded positively onto the component with factor loadings ranging between 0.918 and 0.793; for example, "All in all, I am very satisfied with this person as my manager" with a high factor loading of 0.918. Seven items loaded onto Factor 2 measuring promotion. This factor was labelled *promotion*. Five items loaded positively onto the second factor, and one item loaded negatively; for example, "I would be more content with my job if my promotion opportunities were not so poor", with a factor loading of 0.551; also, "All in all, I would rather have more opportunities for promotion" with a factor loading of 0.545. Three items loaded onto Factor 3 measuring pay. This factor was labelled *pay*. All three factors loaded positively onto the third factor, with factor loadings ranging between 0.894 and 0.882. Five items loaded onto Factor 4 measuring co-workers. Therefore, this factor was labelled *co-workers*. Of the five items, all the items loaded positively, with factor loadings ranging between 0.941 and 0.415. Four items loaded onto Factor 5 measuring work itself. This factor was labelled *work itself*. All four items loaded positively onto Factor 5; for example, "All in all, I would rather have some other kind of duties in my work" with a factor loading of 0.837; also, "I would be more content with my job if I were doing tasks that are different from the ones I do now", with a factor loading of 0.818.

Table 6: Forced five-factor loading based on a principal component extraction with Oblimin and Kaiser normalisation rotation for JS

Statements	Factors				
	1	2	3	4	5
All in all, I am very satisfied with this person as my manager	0.918				
Overall, I am very pleased with the way my manager supervises me	0.872				
I am more satisfied with my manager than with almost anyone I have ever worked for	0.866				
All and all, I would rather work for some other manager	0.793				
I am more satisfied with my opportunities for promotion now than with almost any other promotion opportunities I have ever had	0.480				
All in all, I am very satisfied with my chances for promotion		-0.332			
I would be more content with my job if my pay were not so low		0.844			
I would be more content with my job if my manager did not work here		0.789			
I would be more content with my job if my co-workers did not work here		0.648			
All in all, I would rather have better pay		0.591			
I would be more content with my job if my promotion opportunities were not so poor		0.551			
All in all, I would rather have more opportunities for promotion		0.545			
I am more satisfied with my pay now than I have almost ever been			0.894		
Overall, I am very pleased with how much money I earn			0.887		
All in all, I am very satisfied with my pay			0.882		
All in all, I would rather work with some other kind of co-workers				0.496	
All in all, I am very satisfied with my co-workers				0.941	
Overall, I am very pleased to work with my co-workers				0.732	
I am more satisfied with my co-workers than with almost anyone I have ever worked with before				0.692	
I am more satisfied with the types of work I currently do that with almost any other work I have ever done				0.342	
All in all, I would rather have some other kind of duties in my work					0.837
I would be more content with my job if I were doing tasks that are different from the ones I do now					0.818

Statements	Factors			
All in all, I am very satisfied with the things I do at work				0.628
Overall, I am very pleased with the types of activities that I do on my job				0.318

Source: Own compilation

Table 7 presents the factor loadings based on a principal component extraction with Oblimin and Kaiser normalisation rotation for the WES. According to the results, eight items are loaded onto Factor 1, measuring employee dedication. This factor was labelled *dedication*. All eight items loaded positively onto the first factor. Next, six items loaded onto Factor 2, measuring employee absorption. This factor was labelled *absorption*. All the six items loaded positively onto the second factor. Finally, three items loaded onto Factor 3, measuring employee vigour. This factor was labelled *vigour*. All three items loaded positively onto the third factor.

Table 7: Factor loadings based on a principal component extraction with Oblimin with Kaiser normalisation rotation for WE

Statements	Factors		
	1	2	3
When I get up in the morning, I feel like going to work.	0.917		
At my job, I feel strong and vigorous.	0.915		
My job inspires me.	0.910		
I find the work that I do full of meaning and purpose.	0.858		
I am enthusiastic about my job.	0.832		
At my work, I feel bursting with energy.	0.828		
When I am working, I forget everything else around me.	0.749		
I feel happy when I am working intensely.	0.562		
To me, my job is challenging.		0.892	
I get carried away when I am working.		0.877	
It is difficult to detach myself from my job.		0.792	
At my job, I am very resilient, mentally.		0.603	
I can continue working for very long periods at a time.		0.588	
I am immersed in my work.		0.486	
I am proud of the work that I do.			0.732
At my work, I always persevere, even when things do not go well.			0.724
Time flies when I am working.			0.697

Source: Own compilation

A confirmatory analysis was conducted using a forced three-factor rotation; the results are shown in Table 8. Table 8 presents the factor loadings based on a principal component extraction with Oblimin and Kaiser normalisation rotation for OC. According to the results, eight items loaded onto Factor 1 measuring CC. All the eight items loaded positively onto the mentioned factor with factor loadings ranging between 0.804 and 0.368. Six items loaded onto Factor 2 measuring AC. Therefore, this factor was labelled *affective commitment*. Five of the six items loaded negatively, with one loading positively onto the second factor. Seven items loaded onto Factor 3 measuring NC. Consequently, this factor was labelled *normative commitment*. All three items loaded positively onto the third factor. Of the seven items, five loaded positively onto the third factor, and two loaded negatively. For example, “I do not believe that a person must always be loyal to his or her organisation” with a factor loading of 0.532. Similarly, “I do not think that wanting to be a “company man” or “company woman” is sensible anymore”, with a factor loading of 0.690.

Table 8: Forced three-factor principal component extraction with Oblimin and Kaiser normalisation rotation for OC

Statements	Factors		
	1	2	3
Too much in my life would be disrupted if I decided I wanted to leave my organisation now	0.804		
Things were better in the days when people stayed with one organisation for most of their careers	0.693		
It would be very hard for me to leave my organisation right now, even if I wanted to	0.682		
Right now, staying with my organisation is a matter of necessity as much as desire	0.647		
If I got another offer for a better job elsewhere I would not feel it was right to leave my organisation	0.581		
One of the major reasons I continue to work for this organisation is that I believe that loyalty is important and therefore feel a sense of moral obligation to remain	0.501		
I am not afraid of what might happen if I quit my job without having another one lined up	0.486		
I feel that I have too few options to consider leaving this organisation	0.368		
I enjoy discussing my organisation with people outside it		-0.375	
I would be very happy to spend the rest of my career with this organisation		-0.478	
I do not feel a strong sense of belonging to my organisation		-0.851	
I do not feel like ‘part of the family’ at my organisation		-0.840	
This organisation has a great deal of personal meaning for me		-0.737	
I think that I could easily become as attached to another organisation as I am to this one		0.517	
Jumping from organisation to organisation does not seem at all unethical to me			0.353
I do not think that wanting to be a company man or company woman is sensible anymore			0.690
I think that people these days move from company to company too often			-0.534
I do not believe that a person must always be loyal to his or her organisation			0.532
I really feel as if this organisation’s problems are my own			0.491
I was taught to believe in the value of remaining loyal to one organisation			-0.469
It would not be too costly for me to leave my organisation now			0.342

Source: Own compilation

A confirmatory analysis was conducted using a forced two-factor rotation; the results are shown in Table 9. The results in Table 9 present the factor loadings based on a principal component extraction with Oblimin and Kaiser normalisation rotation for CWB. Results revealed that 27 items loaded onto Factor 1 measuring CWB aimed at an individual. Therefore, this factor was labelled *CWB–individual*. All the aforementioned items loaded positively onto the factor with factor loadings ranging from

0.960 to 0.406. Moreover, 14 items loaded onto Factor 2, measuring CWB towards the organisation. Therefore, this factor was labelled *CWB–organisation*. All the mentioned items loaded positively with factor loadings ranging from 0.795 to 0.363.

Table 9: Forced two-factor loading principal component matrix with Oblimin and Kaiser normalisation rotation for counterproductive

Statements	Factors	
	1	2
Took money from your employer without permission	0.960	
Threatened someone at work with violence	0.953	
Played a mean prank to embarrass someone at work	0.941	
Hit or pushed someone at work	0.925	
Made an obscene gesture (the finger) to someone at work	0.913	
Stole something belonging to someone at work	0.913	
Purposely dirtied or littered your place of work	0.907	
Destroyed property belonging to someone at work	0.901	
Started or continued a damaging or harmful rumour at work	0.888	
Verbally abused someone at work	0.880	
Did something to make someone at work look bad	0.870	
Put in to be paid for more hours than you worked	0.843	
Withheld needed information from someone at work	0.787	
Looked at someone at work's private mail/property without permission	0.745	
Threatened someone at work, but not physically	0.729	
Hid something so someone at work couldn't find it	0.728	
Said something obscene to someone at work to make them feel bad	0.722	
Made fun of someone's personal life	0.708	
Stolen something belonging to your employer	0.684	
Blamed someone at work for error you made	0.663	
Refused to help someone at work	0.657	
Insulted or made fun of someone at work	0.639	
Took supplies or tools home without permission	0.634	
Refused to take on an assignment when asked	0.582	
Purposely did your work incorrectly	0.557	
Ignored someone at work	0.502	
Started an argument with someone at work	0.406	
Left work earlier than you were allowed to		0.795
Daydreamed rather than did your work		0.731
Told people outside the job what a lousy place you work for		0.717

Statements	Factors
Purposely wasted your employer's materials/supplies	0.653
Tried to look busy while doing nothing	0.636
Purposely failed to follow instructions	0.617
Purposely came late to an appointment or meeting	0.572
Stayed home from work and said you were sick when you were not	0.562
Purposely worked slowly when things needed to get done	0.532
Purposely interfered with someone at work doing his/her job	0.517
Failed to report a problem so it would get worse	0.505
Insulted someone about their job performance	0.439
Came to work late without permission	0.428
Taken a longer break than you were allowed to take	0.363

Source: Own compilation

The fourth objective was to investigate the relationships between PSM, JS, OC, WE and CWB. A Pearson product-moment correlation was conducted to determine the strength of the relationship among the variables, with results displayed in Table 10 below.

Table 10: Results of the correlation test

Variable		PSM	JS	OC	WE	CWB
PSM	R	1				
	P					
JS	R	0.106	1			
	P	0.001**				
OC	R	0.137	0.430	1		
	P	0.000**	0.000**			
WE	R	0.417	0.675	0.368	1	
	P	0.000**	0.000**	0.000**		
CWB	R	-0.289	-0.127	0.085	-0.223	1
	P	0.000**	0.000**	0.006**	0.000**	

Note: $p \leq 0.05$, $p \leq 0.01$ **; small effect $r = 0.10$ to $r = 0.29$; medium effect $r = 0.3$ to $r = 0.49$; large effect $r = 0.5$ to $r = 1.0$

As can be seen from the Pearson product-moment correlation results, JS had a statistically significant small correlation with PSM as seen from the r-value of 0.106 howbeit significant on the 99th percentile. The correlation was positive; therefore, as one increases, there would be a concomitant increase in the other. OC similarly had a small statistically significant correlation with PSM ($r = 0.137$; $p = 0.000$ **) and a medium statistically significant correlation with JS ($r = 0.430$; $p = 0.000$ **). The relationship was positive. Work engagement had medium associations with both PSM ($r = 0.417$; $p = 0.000$ **) and OC ($r = 0.368$; $p = 0.000$ **), while the same had a large statistically significant correlation with JS ($r = 0.675$; $p = 0.000$ **). Lastly, CWB reverted negative small correlations with PSM ($r = -0.289$; $p = 0.000$), JS ($r = -0.127$; $p = 0.000$ **) and WE ($r = -0.223$; $p = 0.000$ **). Therefore, CWB would decrease with an increase in JS, PSM and WE. However, CWB had a small statistically significant positive relationship with OC ($r = 0.085$; 0.006 **).

8. Discussion of results

The study's first objective was to determine the reliability and validity of scales measuring PSM, JS, OC, WE and CWB within the South African public sector context. Cronbach's alpha is the most frequently used test to determine the internal consistency of an instrument. The average of all

correlations across all split-half combinations is computed using this test. A reliability score of 0.7 or greater is considered satisfactory (Bell *et al.*, 2018). Taber (2018) states that “a value between 0.5 and 0.7 indicates moderate sample adequacy.”

The Cronbach alpha coefficient for the JS scale was 0.888, which is considered acceptable and consistent. Additionally, JS sub-scales ranged between 0.715 and 0.845. Cronbach’s alpha values for OC were 0.664 with sub-scales, *inter alia*, AC, CC and NC ranging between 0.524 and 0.642, indicating moderate sample reliability for the specified scales. The Cronbach alpha coefficient for the WE scale was 0.947, considered excellent, with sub-scales ranging from 0.849 to 0.876. Similarly, the reliability coefficient for the PSM scale was 0.833, with sub-scales ranging from 0.553 (i.e. CPS) to 0.806 (i.e. CPS or SS). Simultaneously, the reliability coefficient for CWB was 0.968, with the two sub-scales reverting a reliability coefficient of 0.893 for organisational CWB and 0.970 for individual CWB.

Table 11: Comparison of Cronbach’s alpha coefficients of this study with previous studies

Scale and sub-scales	Authors	Cronbach’s alphas	Cronbach’s alphas for this study	Number of items
APS	Kim <i>et al.</i> (2013)	0.70	0.73	4
CPV		0.54	0.55	4
Compassion		0.69	0.74	4
SS		0.78	0.81	4
PSM Scale		0.74	0.83	16
Work itself	Bowling <i>et al.</i> (2018)	0.72	0.72	5
Supervision		0.83	0.83	5
Co-workers		0.77	0.79	5
Pay		0.83	0.85	5
Promotion		0.82	0.82	5
JS Scale			0.89	25
AC	Allen and Meyer (1996) validated by Maqsood <i>et al.</i> (2012)	0.83	0.64	8
CC		0.61	0.60	6
NC		0.64	0.52	8
OC Scale		0.84	0.66	22
Vigour	Schaufeli and Bakker (2004)	0.83	0.85	6
Dedication		0.92	0.88	5
Absorption		0.82	0.85	6
WE Scale			0.95	17
CWB-Organisation	Spector <i>et al.</i> (2006)	0.84	0.89	21
CWB-Person		0.85	0.97	22
CWB Scale		0.81	0.97	43

Source: Own compilation

Exploratory and confirmatory factor analyses were done to determine the validity of the measuring instruments within the South African public service context.

Validity for public service motivation

The factor loadings based on a principal component extraction with Oblimin and Kaiser Normalisation rotation for PSM revealed that six items loaded onto Factor 1 measuring APS and four loaded onto Factor 2 measuring CPV. In addition, two items loaded onto Factor 3, measuring compassion, and four loaded onto Factor 4, measuring SS. Although these factors are similar to the scale developed by Kim *et al.* (2013), the items loaded differently onto the identified facets. Table 12 compares the factors and item loading of the scale developed by Kim *et al.* (2013) with results obtained by the research under discussion.

Table 12: Comparison of PSM factors and item loadings

Kim <i>et al.</i> (2013)	This study
Factor 1: Attraction to public service	Factor 1: Attraction to public service
I admire people who initiate or are involved in activities to aid my community	It is fundamental that the interests of future generations are taken into account when developing public policies.
It is important to contribute to activities that tackle social problems	To act ethically is essential for public servants.
Meaningful public service is very important to me	I empathise with other people who face difficulties.
It is important for me to contribute to the common good	I feel sympathetic to the plight of the underprivileged.
Factor 2: Commitment to public values	It is important to contribute to activities that tackle social problems.
I think equal opportunities for citizens are very important	It is important that citizens can rely on the continuous provision of public services.
It is important that citizens can rely on the continuous provision of public services	Factor 2: Commitment to public values
It is fundamental that the interests of future generations are taken into account when developing public policies	I would agree to a good plan to make a better life for the poor, even if it costs me.
To act ethically is essential for public servants	I am willing to risk personal loss to help society.
Factor 3: Compassion	I believe in putting civic duty before self.
I feel sympathetic to the plight of the underprivileged	I am prepared to make sacrifices for the good of society.
I empathise with other people who face difficulties	Factor 3: Compassion
I get very upset when I see other people being treated unfairly	I think equal opportunities for citizens are very important.
Considering the welfare of others is very important	I admire people who initiate or are involved in activities to aid my community.
Factor 4: Self-sacrifice	Factor 4: Self-sacrifice
I am prepared to make sacrifices for the good of society	Meaningful public service is very important to me.
I believe in putting civic duty before self	It is important for me to contribute to the common good.
I am willing to risk personal loss to help society	I get very upset when I see other people being treated unfairly.
I would agree to a good plan to make a better life for the poor, even if it costs me	Considering the welfare of others is very important.

Source: Own compilation

Validity for JS

The forced five-factor loading based on a principal component extraction with Oblimin and Kaiser normalisation rotation for JS revealed that four items were loaded onto Factor 1 measuring supervision. There are seven items that loaded onto Factor 2 measuring promotion; three items that loaded onto Factor 3 measuring pay; five items loaded onto Factor 4 measuring co-workers; and four items loaded onto Factor 5 measuring work itself. Although the factor loadings are the same, the items of this study are differently loaded compared with the study of Bowling *et al.* (2018)

Table 13: Comparison of JS factors and item loadings

Bowling <i>et al.</i> (2018)	This study
Factor 1: Work itself	Factor 1: Work itself
Overall, I am very pleased with the types of activities that I do on my job	All in all, I would rather have some other kind of duties in my work
I would be more content with my job if I were doing tasks that are different from the ones I do now	I would be more content with my job if I were doing tasks that are different from the ones I do now
I am more satisfied with the types of work I currently do that with almost any other work I have ever done	All in all, I am very satisfied with the things I do at work
All in all, I am very satisfied with the things I do at work	Overall, I am very pleased with the types of activities that I do on my job
All in all, I would rather have some other kind of duties in my work)	
Factor 2: Supervision	Factor 2: Supervision
Overall, I am very pleased with the way my manager supervises me	All in all, I am very satisfied with this person as my manager
I would be more content with my job if my manager did not work here	Overall, I am very pleased with the way my manager supervises me
I am more satisfied with my manager than with almost anyone I have ever worked for	I am more satisfied with my manager than with almost anyone I have ever worked for
All in all, I am very satisfied with this person as my manager	All and all, I would rather work for some other manager
All in all, I would rather work for some other manager	I am more satisfied with my opportunities for promotion now than with almost any other promotion opportunities I have ever had
Factor 3: Co-workers	Factor 3: Co-workers
Overall, I am very pleased to work with my co-workers	All in all, I would rather work with some other kind of co-workers
I would be more content with my job if my co-workers did not work here	All in all, I am very satisfied with my co-workers
I am more satisfied with my co-workers than with almost anyone I have ever worked with before	Overall, I am very pleased to work with my co-workers
All in all, I am very satisfied with my co-workers	I am more satisfied with my co-workers than with almost anyone I have ever worked with before
All in all, I would rather work with some other kind of co-workers	I am more satisfied with the types of work I currently do that with almost any other work I have ever done
Factor 4: Pay	Factor 4: Pay
Overall, I am very pleased with how much money I earn	I am more satisfied with my pay now than I have almost ever been
I would be more content with my job if my pay were not so low	Overall, I am very pleased with how much money I earn
I am more satisfied with my pay now than I have almost ever been	All in all, I am very satisfied with my pay
All in all, I am very satisfied with my pay	
All in all, I would rather have better pay	
Factor 5: Promotion	Factor 5: Promotion
Overall, I am very pleased with my opportunities for promotion	All in all, I am very satisfied with my chances for promotion
I would be more content with my job if my	I would be more content with my job if my pay

Bowling <i>et al.</i> (2018)	This study
promotion opportunities were not so poor (were not so low
I am more satisfied with my opportunities for promotion now than with almost any other promotion opportunities I have ever had	I would be more content with my job if my manager did not work here
All in all, I am very satisfied with my chances for promotion	I would be more content with my job if my co-workers did not work here
All in all, I would rather have more opportunities for promotion)	All in all, I would rather have better pay
	I would be more content with my job if my promotion opportunities were not so poor
	All in all, I would rather have more opportunities for promotion

Validation for work engagement

The results of the factor loadings are based on a principal component extraction with Oblimin and Kaiser normalisation rotation for the WES showed eight items loaded onto Factor 1, measuring employee dedication; six items loaded onto Factor 2, measuring employee absorption; and three items loaded onto Factor 3, measuring employee vigour. Compared to the WE scale developed by Schaufeli and Bakker (2004), the factor loadings and the research reported on are similar in structure; however, the item loadings differ. A comparison of the two scales is depicted in Table 14.

Table 14: Comparison of WE factors and item loadings

WE scale (Schaufeli & Bakker, 2004)	This study
Vigour	Vigour
At my work, I feel bursting with energy	I am proud of the work that I do.
At my job, I feel strong and vigorous	At my work, I always persevere, even when things do not go well.
When I get up in the morning, I feel like going to work	Time flies when I am working.
I can continue working for very long periods at a time	
At my job, I am very resilient, mentally	
At my work, I always persevere, even when things do not go well	
Dedication	Dedication
I find the work that I do full of meaning and purpose	When I get up in the morning, I feel like going to work.
I am enthusiastic about my job	At my job, I feel strong and vigorous.
My job inspires me	My job inspires me.
I am proud of the work that I do	I find the work that I do full of meaning and purpose.
To me, my job is challenging	I am enthusiastic about my job.
	At my work, I feel bursting with energy.
	When I am working, I forget everything else around me.
	I feel happy when I am working intensely.
Absorption	Absorption
Time flies when I am working	To me, my job is challenging.
When I am working, I forget everything else around me	I get carried away when I am working.
I feel happy when I am working intensely	It is difficult to detach myself from my job.
I am immersed in my work	At my job, I am very resilient, mentally.

WE scale (Schaufeli & Bakker, 2004)	This study
I get carried away when I am working	I can continue working for very long periods at a time.
It is difficult to detach myself from my job	I am immersed in my work.

Source: Own compilation

Validation for OC

Regarding OC, the scale factor loadings based on a principal component extraction with Oblimin and Kaiser normalisation rotation showed that eight items loaded onto Factor 1 measuring CC, six items loaded onto Factor 2 measuring AC, and seven items loaded onto Factor 3 measuring NC. The factor structure was compared to Allen and Meyer's OC scale developed in 1996 and validated by Maqsood *et al.* (2012), and the results reported on are similar, howbeit the item loadings differ. A comparison of the two scales is depicted in Table 15.

Table 15: Comparison of OC factors and item loadings

Allen and Meyer's original OC scale (1996), as validated by Maqsood <i>et al.</i> (2012)	This study
AC	AC
I would be very happy to spend the rest of my career with this organisation.	I enjoy discussing my organisation with people outside it
I enjoy discussing my organisation with people outside it.	I would be very happy to spend the rest of my career with this organisation
I really feel as if this organisation's problems are my own.	I do not feel a strong sense of belonging to my organisation
I think that I could easily become as attached to another organisation as I am to this one.	I do not feel like 'part of the family' at my organisation
I do not feel like 'part of the family' at my organisation.	This organisation has a great deal of personal meaning for me
I do not feel 'emotionally attached' to this organisation.	I think that I could easily become as attached to another organisation as I am to this one
This organisation has a great deal of personal meaning for me.	
I do not feel a strong sense of belonging to my organisation.	
CC	CC
I am not afraid of what might happen if I quit my job without having another one lined up.	Too much in my life would be disrupted if I decided I wanted to leave my organisation now
It would be very hard for me to leave my organisation right now, even if I wanted to.	Things were better in the days when people stayed with one organisation for most of their careers
Too much in my life would be disrupted if I decided I wanted to leave my organisation now.	It would be very hard for me to leave my organisation right now, even if I wanted to
It wouldn't be too costly for me to leave my organisation now.	Right now, staying with my organisation is a matter of necessity as much as desire
Right now, staying with my organisation is a matter of necessity as much as desire.	If I got another offer for a better job elsewhere I would not feel it was right to leave my organisation
I feel that I have too few options to consider leaving this organisation.	One of the major reasons I continue to work for this organisation is that I believe that loyalty is important and therefore feel a sense of moral obligation to remain
	I am not afraid of what might happen if I quit my job without having another one lined up
	I feel that I have too few options to consider

Allen and Meyer's original OC scale (1996), as validated by Maqsood <i>et al.</i> (2012)	This study
	leaving this organisation
NC	NC
I think that people these days move from company to company too often.	Jumping from organisation to organisation does not seem at all unethical to me
I do not believe that a person must always be loyal to his or her organisation.	I do not think that wanting to be a company man or company woman is sensible anymore
Jumping from organisation to organisation does not seem at all unethical to me.	I think that people these days move from company to company too often
One of the major reasons I continue to work for this organisation is that I believe that loyalty is important and therefore feel a sense of moral obligation to remain.	I do not believe that a person must always be loyal to his or her organisation
If I got another offer for a better job elsewhere I would not feel it was right to leave my organisation.	I really feel as if this organisation's problems are my own
I was taught to believe in the value of remaining loyal to one organisation.	I was taught to believe in the value of remaining loyal to one organisation
Things were better in the days when people stayed with one organisation for most of their careers.	It wouldn't be too costly for me to leave my organisation now
I do not think that wanting to be a company man or company woman is sensible anymore.	

Source: Own compilation

Validation of CWB

The factor loadings based on a principal component extraction with Oblimin and Kaiser normalisation rotation for CWB revealed that 27 items loaded onto Factor 1 measuring CWB aimed at an individual, while 14 items loaded onto Factor 2 measuring CWB towards the organisation. Both scales consist of two factors, but the item loadings differ (see Table 16).

Table 16: Comparison of CWB factors and item loadings

CWB scale Spector <i>et al.</i> (2006)	This study
Factor 1: CWB – individual	Factor 1: CWB – individual
Started or continued a damaging or harmful rumour at work	Took money from your employer without permission
Insulted someone about their job performance	Threatened someone at work with violence
Made fun of someone's personal life	Played a mean prank to embarrass someone at work
Ignored someone at work	Hit or pushed someone at work
Refused to help someone at work	Made an obscene gesture (the finger) to someone at work
Withheld needed information from someone at work	Stole something belonging to someone at work
Purposely interfered with someone at work doing his/her job	Purposely dirtied or littered your place of work
Blamed someone at work for error you made	Destroyed property belonging to someone at work
Started an argument with someone at work	Started or continued a damaging or harmful rumour at work
Stole something belonging to someone at work	Verbally abused someone at work
Verbally abused someone at work	Did something to make someone at work look bad

CWB scale Spector <i>et al.</i> (2006)	This study
Made an obscene gesture (the finger) to someone at work	Put in to be paid for more hours than you worked
Threatened someone at work with violence	Withheld needed information from someone at work
Threatened someone at work, but not physically	Looked at someone at work's private mail/property without permission
Said something obscene to someone at work to make them feel bad	Threatened someone at work, but not physically
Hid something so someone at work couldn't find it	Hid something so someone at work couldn't find it
Did something to make someone at work look bad	Said something obscene to someone at work to make them feel bad
Played a mean prank to embarrass someone at work	Made fun of someone's personal life
Destroyed property belonging to someone at work	Stolen something belonging to your employer
Looked at someone at work's private mail/property without permission	Blamed someone at work for error you made
Hit or pushed someone at work	Refused to help someone at work
Factor 2: CWB – organisation	Insulted or made fun of someone at work
Purposely wasted your employer's materials/supplies	Took supplies or tools home without permission
Daydreamed rather than did your work	Refused to take on an assignment when asked
Complained about insignificant things at work	Purposely did your work incorrectly
Told people outside the job what a lousy place you work for	Ignored someone at work
Purposely did your work incorrectly	Started an argument with someone at work
Came to work late without permission	Factor 2: CWB – organisation
Stayed home from work and said you were sick when you were not	Left work earlier than you were allowed to
Purposely damaged a piece of equipment or property	Daydreamed rather than did your work
Purposely dirtied or littered your place of work	Told people outside the job what a lousy place you work for
Stolen something belonging to your employer	Purposely wasted your employer's materials/supplies
Purposely worked slowly when things needed to get done	Tried to look busy while doing nothing
Refused to take on an assignment when asked	Purposely failed to follow instructions
Purposely came late to an appointment or meeting	Purposely came late to an appointment or meeting
Failed to report a problem so it would get worse	Stayed home from work and said you were sick when you were not
Taken a longer break than you were allowed to take	Purposely worked slowly when things needed to get done
Purposely failed to follow instructions	Purposely interfered with someone at work doing his/her job
Left work earlier than you were allowed to	Failed to report a problem so it would get worse
Took supplies or tools home without permission	Insulted someone about their job performance
Tried to look busy while doing nothing	Came to work late without permission
Put in to be paid for more hours than you worked	Taken a longer break than you were allowed to take

CWB scale Spector <i>et al.</i> (2006)	This study
Took money from your employer without permission	

Source: Own compilation

Based on the results, the alternative hypothesis H_{1A} that the PSM, JS, OC, WE, and CWB scales will be reliable and valid within the South African public-sector context fails to be rejected.

The second objective was to investigate the relationships between PSM, JS, OC, WE and CWB. A Pearson product-moment correlation was used to determine the strength of the relationship among the variables. The results revealed that JS had a statistically significant small correlation with PSM, as seen from the r -value of 0.106 in the 99th percentile. Moreover, the correlation was positive; therefore, there would be a concomitant increase in the other as one increased. Bright (2021) investigated how perceptions of organisational prestige (POP) affect the link between PSM and public employee JS and intention to leave. Similarly, Bright (2021) also discovered beneficial associations between PSM and various work attitudes. Although PSM was a significant factor in POP perspectives and JS, POP somewhat moderated its effects and was the most significant predictor of JS. In addition, persons with high levels of PSM were more likely to hold positive POP perspectives, which increased their JS and decreased their intention to leave the organisation (Bright, 2021). Furthermore, Bright (2021) postulates that PSM maintains a direct and indirect association with JS. In other words, respondents with high levels of PSM were much more content with their occupations than those with lower levels of PSM, regardless of their perceptions of how residents evaluated their employer.

Regarding JS, a recent meta-analysis by Boyd and Nowell (2020) revealed a moderately significant relationship between PSM and JS and evidence that job factors may modify the relationship. Most studies have proven that the relationship between PSM and JS is contingent on SIP via job and organisational type. Boyd and Nowell (2020) emphasise that other researchers discovered a substantial positive correlation between PSM and JS in a sample of Chinese MPA students with full-time public-sector employment. The findings correlate with the findings of Boyd and Nowell (2020), Stefurak *et al.* (2020), Homberg *et al.* (2015), Crucke *et al.* (2021), Palma (2016), Kim *et al.* (2013), Prysmakova and Vandenabeele (2020), and Breugh *et al.* (2018), who all found a positive relationship between PSM and JS.

Organisational commitment similarly had a weak statistically significant correlation with PSM ($r = 0.137$; $p = 0.000^{**}$) and a medium statistically significant correlation with JS ($r = 0.430$; $p = 0.000^{**}$). The relationship was positive. According to Boyd and Nowell (2020), OC and identification and PSM predict employee engagement and wellbeing indicators. The researcher investigates whether PSM is a direct or indirect predictor of employee metrics. Regarding organisational citizenship behaviours in the Korean setting, the researcher observed PSM, work satisfaction and OC to explain organisational citizenship. The researcher discovered a significant direct relationship between PSM and OC and organisational citizenship. Similarly, a study of people in the UK prison system revealed a significant positive association between PSM and OCB after controlling for perceived organisational support and fairness (Boyd & Nowell, 2020).

Moreover, given the interest in the immediate work surroundings surrounding high-PSM individuals, the researchers propose that the relationship between PSM and OC would depend on the characteristics of their leaders (Potipiroon & Ford, 2017). The relationship between PSM and OC is more nuanced than commonly believed. The strength of this relationship depends on how much one enjoys and finds interest in their profession. Potipiroon and Ford (2017) found that the link between PSM and OC was significantly favourable when intrinsic motivation was strong. The positive effects of PSM on OC were greatest when intrinsic motivation and ethical leadership were high. Without intrinsic motivation and/or ethical leadership, the PSM–OC connection tended to be negative but non-significant (Potipiroon & Ford, 2017). This positive relationship between PSM and OC was confirmed in studies by Boyd and Nowell (2020), Castaing (2006) and Potipiroon and Ford (2017).

Work engagement had medium associations with both PSM ($r = 0.417$; $p = 0.000^{**}$) and OC ($r = 0.368$; $p = 0.000^{**}$), while the same had a large statistically significant correlation with JS ($r = 0.675$; $p = 0.000^{**}$). In line with the study's findings, Mussagulova (2021) found that PSM increases the positive relationship between job resources, and WE has garnered the most attention and relevance. Moreover, the published study on the relationship between WE and PSM within the context of JDR uses both job demands and resources and focuses initially on the moderating effect of PSM by conceptualisation (Mussagulova, 2021). However, Mussagulova (2021) emphasises that the theorisation of PSM's role in mitigating the link between job resources and WE gives public employees an incentive to organise their job resources to remain engaged, leading to improved performance. The study by Mussagulova (2021) found that public servants with a low level of PSM experience the negative association between red tape and WE more strongly, possibly because their level of PSM is not high enough to absorb the shocks of procedural constraints (Mussagulova, 2021). Mussagulova (2021) described the relationship between PSM and WE and the role of PSM in enhancing the positive effect of job resources and mitigating the negative effect of job demands on the desired individual and organisational work outcomes. However, the association between PSM and WE are poorly supported. Ugaddan and Park (2017) and Mussagulova (2021) also found a positive relationship between PSM and WE.

CWB reverted negative small correlations with PSM ($r = -0.289$; $p = 0.000$), JS ($r = -0.127$; $p = 0.000^{**}$) and WE ($r = -0.223$; $p = 0.000^{**}$). Therefore, CWB would decrease with increased JS, PSM and WE. However, CWB had a small statistically significant positive relationship with OC ($r = 0.085$; 0.006^{**}). Numerous researchers have attempted to link counterproductive behaviour with negative emotions, namely rage and violence, caused by stress and unpleasant work settings. It involves breaching both rules and laws and social conventions. The link between JS and CWB should therefore be negative. In line with the current study, numerous studies have shown a negative correlation between this behaviour and work satisfaction, speculating that the absence of work satisfaction – and the subsequent urge to “get even” with the employer – are the seeds of workplace deviance (Czarnota-Bojarska, 2015). Additionally, Czarnota-Bojarska (2015) found a negative association between JS and CWB. Despite relatively high levels of JS, the study indicates a propensity for CWB. The study further revealed relatively low JS levels and elevated CWB levels. According to Baysal *et al.* (2020), the relationship between CWB and OC is one of the most common challenges businesses encounter. The relationship between AC, NC and CC, as characteristics of OC, and abuse, production deviation, sabotage, theft and disengagement from CWB was investigated. In addition, Baysal *et al.* (2020) found that AC and NC have a negative direction and significant link with the dimensions of withdrawal and abuse. Vogel *et al.* (2016) and Koumenta (2015) also found a negative association between PSM and CWB. Czarnota-Bojarska (2015) found a negative association between JS and CWB. Baysal *et al.* (2020) found that AC and NC have a negative direction and significant link with the dimensions of withdrawal and abuse, and negative direction and strong correlations exist between the dimensions of commitment, withdrawal, abuse and theft.

The results confirmed the alternative hypothesis H_{2A} that there is a positive relationship between PSM, JS, OC and WE, and a negative relationship between PSM and CWB cannot be rejected.

9. Managerial implications

This research developed a framework to evaluate the impact of PSM on core work evaluation (JS, OC, WE) and CWB. The link between PSM, JS, OC, WE and CWB was also investigated. This study provides a theoretical and conceptual framework that public-sector managers can use to assess the impact of PSM on CWE and CWB. Furthermore, public-sector managers could use the validated instruments to assess these critical behavioural outcomes within the public service context. Public managers should understand how PSM influences CWE and CWB. The results revealed a positive correlation between PSM and JS, which is also confirmed by similar studies. In addition, OC had a positive relationship with PSM. Furthermore, work engagement, PSM, OC and JS are positively related.

The study's results confirmed public service motivation's potential positive outcomes or consequences. For example, high levels of public service motivation led to high levels of job satisfaction, organisational commitment, work engagement and low levels of counterproductive work behaviour. Therefore, motivated public service employees will have high job satisfaction, organisational commitment, and work engagement, and these positive work behaviours will help prevent counterproductive behaviour (including corruption), which is necessary for effective corporate governance, service delivery, policy formation, and implementation.

10. Conclusion

Low levels of PSM led to decreased core work evaluations (JS, OC, WE) and increased CWB. This study's primary aim was to develop a framework to assess the influence of PSM on CWE (JS, OC, WE) and CWB. No previous research has investigated the influence of PSM (independent variable) on core work evaluations such as JS, OC, WE and CWB (dependent variables) within the South African public service context. Therefore, this study filled the gap by developing a framework to assess the influence of PSM on CWE (JS, OC, WE) and CWB of employees in the North West provincial government departments.

The study was conducted within the quantitative research paradigm using a cross-sectional correlational survey design. The sample comprised 2 250 public service employees representing all categories of professionals within the 11 provincial government departments. The study used a stratified random sampling method consisting of four subgroups. A total of 1 546 questionnaires were distributed, and 1 031 were completed and returned.

The measuring instruments were reliable and valid within the South African public service context. The results revealed a positive correlation between PSM and JS, while OC positively correlated with PSM. Work engagement, PSM, OC and JS are positively related, while CWB negatively affects PSM, JS and WE. Work engagement and JS significantly predict PSM. The primary managerial implication is that this study provides a theoretical and conceptual framework that public-sector managers can use to assess the impact of PSM on CWE and CWB. Ultimately, this research contributes to the theory, conceptualisation and relationships between organisational behavioural dimensions such as PSM, JS, OC, WE and CWB.

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Black Managers Lived Experiences of Mentoring: An Interpretative Phenomenological Analysis

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Keywords

Mentor; Mentee;
Mentorship; Black
management; Apartheid;
Transformation; lived-
experiences

Abstract

This paper seeks to analyse the lived mentoring experiences of black managers. The study makes use of an Interpretative Phenomenological Analysis to achieve this aim. The participants were all from the petrochemical industry, as well as service companies or service providers within the industry.

The high levels of inequality in South Africa, diverse backgrounds, dissimilar opportunities, and varying levels of education makes for entirely different mentoring views and experiences as presented by the participants taking part in this study through semi-structured interviews. In assessing these lived experiences, the researchers investigated concepts such as employment equity, affirmative action and broad-based black economic empowerment, and aspects of mentorship.

The results showed that some organisations and mentors are mentoring their mentees in accordance with transformational policies, whereas others are not. The Ubuntu principles of care, respect, responsiveness, and interconnectedness are evident throughout the positive lived experiences of the participants and absent during the negative experiences. This confirms that Ubuntu is playing an important role in mentoring.

1. Introduction

Due to apartheid and South Africa's history, organisations need to, and are in a position (Cloete, Bunting, & Maassen, 2015) to eradicate the racial and gender inequalities that form part of the organisational framework (Mayer, Oosthuizen & Tonelli, 2019). Most of these inequalities are also still prevalent across society today. Organisations demonstrating inequality and a lack of diversity regarding management are most likely to experience problems when allocating the right mentors to mentees relating to race, gender, and background.

Mentees get allocated to mentors that are white or not of the same race, as companies do not necessarily have alignment between mentors and managers in terms of race. The previous generation's managerial composition does not yet align with that of the younger generation coming through the system. Even the younger generation's composition across all employment levels within organisations does not yet align to the demographics of the country. South African organisations still need much work to do in this regard. White, middle-aged mentors who have spent a part of their working life in apartheid may be resistant or ignore the benefits that may arise from being a mentor to a black manager due to their own lived experiences. In contrast to this, a black manager may want to embrace the opportunity. Many managerial positions are still filled by older white managers. It should be seen as a threat to organisations when it comes to transformation. This can create a risk in the

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workplace or within a certain sector or industry, as the next generation might lack the necessary skills or experience required to do the job.

Almost three decades into democracy, South African organisations are under more pressure than ever to improve the position of previously disadvantaged groups. Mentorship strategies and programs have become essential for transformative policies and practices. Black managers have the potential to successfully develop into better managers and eventually executives, to improve and transform the position of previously disadvantaged groups in South Africa. Not having the right mentor allocated to the right black manager may have a negative affect or slow down transformation in the workplace as these relationships are sometimes forced, unnatural and unproductive.

The researchers need to get a better understanding of the lived experiences of black managers under mentorship to understand (1) the progress made to present, regarding mentorship, (2) the progress and changes that still need to be made, and (3) the extent of the progress that needs to be made. For the purposes of this study, the term black is defined by the B-BBEE (Broad-Based Black Economic Empowerment) Amendment Act of 2013. It defines the term “black” as follows: “The term ‘Black people’ is a generic term which means Africans, Coloureds and Indians— (a) who are citizens of the Republic of South Africa by birth or descent; or (b) who became citizens of the Republic of South Africa by naturalisation— (i) before 27 April 1994; or (ii) on or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalisation prior to that date” (Coetsee, 2021).

Organisations have implemented very few policies and practices to assist black managers with mentoring in the workplace. Mentorship is a mechanism which can be used to accommodate and meet transformation policies and targets successfully across various types of organisations and sectors. Through research and practice, mentoring has emerged as the best strategy to transmit know-how in a mutually beneficial relationship for both the senior and junior manager (Santos, Pereira, Silva, Cadilhe & Cunha, 2019).

Mentoring across different races is not a natural act in South Africa due to its history of segregation. According to Thomas (2001), there are four major obstacles, namely: (1) negative stereotypes, (2) difficulty identifying with the other person, (3) protective hesitation, and (4) fear or scepticism of intimacy. A mentor who has a negative stereotype about someone based on race, will hold on to that stereotype until the individual has proven that they do not fit that stereotype. According to Thomas (2001), close mentoring relationships are much more likely to develop when both parties can identify with one another based on race, culture, age, or gender. If the mentor has trouble identifying with their mentee based on race, they might not see beyond their mistakes or weaknesses. South African companies that lack diversity might instil a sense of mistrust with mentees, as they might question whether the relations are authentic or even possible. This might have the opposite impact than what is expected from a valuable mentor and mentee relationship. The mentee might question whether the mentor is genuine or have an ulterior motive (Thomas, 2001). Mentors and mentees from the same race and background, will relate easier to each other when they have similar lived experiences, opportunities, culture, and fewer language barriers. These practices need to be continuously improved and reflect South Africa’s democratic principles based on recognising and implementing individual human rights in mind and practice in an equal manner (Ebrahim, 2018).

Historically, in South Africa, labour laws discriminated against people of colour (Joubert, 2017). Since democracy and the demolishment of Apartheid in 1994, things have changed significantly. The South African government has since introduced legislation that seeks to enact equal opportunities between South Africans and subsequently reversing the effects of Apartheid. Examples of these acts are The Labour Relations Act, 66 of 1995; Employment Equity Act, 55 of 1998; and Broad-Based Black Economic Empowerment Act, 53 of 2003 (BBBEE Act) (Joubert, 2017). The BBBEE Act seeks to economically include black South Africans through diverse and integrated entrepreneurial promotion and employment strategies.

The Broad-Based Black Economic Empowerment Act 53 of 2003 is an example of legislation which aims to not only correct racial inequality but also empower communities (Esser and Dekker, 2008). All South African organisations that want BBBEE classification need to reach employment equity targets. As a result, black managers need mentoring to accommodate the radical shift. If this is neglected, it could lead to negative economic downturns in the future, as the mentors do not share the necessary skills.

Employment relations in SA organisations will continue to be heavily influenced by EE and AA developments. The implementation of AA, as set out by the Employment Equity Act will continue to have an impact on employee relations practice and more particularly mentor-mentee relationships across different races (Mayer & Oosthuizen, 2019). Section 15(1) of the EE Act describes AA as a means to guarantee that qualified individuals from designated groups are granted access to equal employment opportunities throughout all levels and categories within organisations (Mayer & Oosthuizen, 2019). Legislative mechanisms by themselves will not reach EE in South Africa. According to Mayer and Oosthuizen (2019), employment relations departments within organisations need to implement programmes aimed at black advancement (e.g., literacy training), quality education for employees and the community in which the organisation functions, mentorship, and coaching programmes that aim to achieve equality, which ultimately overflows into the broader society.

1.1.1 Research Questions

The main research question to address the problem statement was: What are the lessons learned for future mentoring relationships to facilitate the transformation process within South Africa?

Three secondary research questions were addressed:

- Sub-question one: How do black managers view mentoring in South Africa?
- Sub-question two: What are the lived experiences of black managers of being mentored by white and/or black mentors?
- Sub-question three: What is the significance of having a black mentor for black managers in South Africa?

1.1.2 Purpose Statement

This paper presents an interpretative phenomenological analysis of the in-depth lived experiences of black managers regarding mentoring within various South African organisations or departments of organisations operating in the petrochemical industry, where the research has been done.

It is necessary to consider and advocate mentoring models that makes sense for Africa and Africans (Sikirivwa, Nyarwath & Muhenda, 2021). Such a model needs to be holistic and apply the best practices of Ubuntu (A Nguni term meaning humanity towards others) so that it is less focused on the individual and more inclusive and culturally aligned with the African context (Geber & Keane, 2016). South African mentors, such as the middle-aged white male or someone that is of a different culture than the black employee, may interact with the mentee in an unconsciously biased manner, which may have a negative impact on the mentee. When these managers mentor younger black managers, it is essential to remain aware of any mentoring that may contribute to “colonisation of the mind” (Geber & Keane, 2016, p. 502). Optimistically, issues of race in the future will gradually decrease as transformational mentoring and the application of Ubuntu are applied.

The current management and mentorship spread of organisations need to be aligned with the next generation of management regarding race and gender for mentorship programmes to make sense and be effective. The more diverse a company is, the more a mentor and mentee programme are likely to be aligned and successful which benefits the organization in the process. Okawa (2002) noted the significance of cultural similarity in mentoring. Mentoring may feel more natural when the mentor and mentee are of the same race and culture (Athey, Avery & Zemsky, 2000).

This paper primarily focuses on (1) how black managers define mentoring, (2) their lived mentoring experiences, and (3) the importance attached to having a black manager as a mentor. In studying these

three aspects, lessons can be identified that may facilitate the transformation process that is a matter of urgency in South Africa given its extremely unequal society.

1.2 Methodology

Qualitative studies normally follow an interpretive philosophy approach. This is due to the researcher needing to comprehend the subjective and socially constructed meanings that present themselves within the phenomenon being studied (Saunders & Lewis, 2018). Phenomenology was first introduced by Husserl (1931) as a means to comprehend the lived experiences of participants and to give meaning to their experiences. Interpretative Phenomenological Analysis (IPA) came into its own with the publication of Smith's (1996) paper in *Psychology and Health* which argued for an approach that was able to capture the experiential and qualitative and that could still dialogue with psychology. According to Smith, Flowers and Larkin (2009), IPA is a qualitative research approach committed to examining how people comprehend life experiences. It is seen by many as the most inclusive qualitative research approach with a sensitivity to the lived experiences of the participants (Alase, 2017). For the participants' stories to make sense, the interpreters needed to have a deep understanding of their lived experiences by putting themselves in the participants' shoes. The researchers needed to try and envision the lives of the participants and see the world and their experiences through their eyes. A combination of Burrell and Morgan's (1979) interpretative paradigm and Guba's (1990) critical theory paradigm was used for this research. Using these two paradigms made it possible to critically interpret the lived experiences of the participants. Guba's (1990) critical theory paradigm sets out the exploration platform of the phenomenon, whereas Burrell and Morgan's (1979) interpretative paradigm form the basis for the narrative of the lived experiences of those impacted. It was important to find a qualitative methodology that is participant-orientated and flexible to capture the real lived experiences of the managers that participated in the study (Alase, 2017).

This study focussed on the individual's perspective on the mentoring experience of the participant as a black manager. Experiences are likely to differ between participants due to the unique and potentially complex situation faced in South Africa.

1.2.1 Strategy and interview questions

The researcher conducted open-ended, semi-structured interviews lasting roughly forty-five to sixty minutes with each manager. Six questions were used as conversation framework or interview schedule. Each question contains a motive as to why the question was asked.

- Question 1: What is your current management role? This question assisted in describing the sample group.
- Question 2: How would you define mentoring? Motive: This question allowed insight into the way black managers viewed mentoring in South Africa, whether they had different views and whether their views were from those held in the Western Academic World.
- Question 3: What are your lived mentorship experiences as a black manager? Motive: This could give insight into the lived mentoring experiences of mentees through practical examples by the participants. It would enable a judgement on the presence of elements of Ubuntu in the mentoring experience of black mentors and mentees, as evidence of transformational mentoring.
- Question 4: What are your lived experiences in having a white manager as a mentor? Motive: In studying black managers' lived experiences in having a white manager as mentor, the researchers seek to better understand how mentoring in this type of relationship has progressed since the ending of Apartheid. This question also helps to gain insight into how employment equity and B-BBEE has contributed to the situation. Evidence of personal barriers between black and white South Africans could complicate mentoring and prevent transformation.
- Question 5: What is the significance of having a black manager as a mentor? Motive: This question gives the researchers a comprehensive view on how significant race still is in South Africa. The more transformed and developed a society, the less significant race should be.
- Question 6: What would you have done differently if you were the mentor? Motive: After a participant has reflected on and re-lived their mentoring experiences, it might have allowed the

participants to form a new view on what they could expect differently from mentorship. This question also targets the breaking down of personal barriers and its potential to transformation.

The research was cross-sectional in nature due to time constraints.

1.2.1 Population, unit of analysis, and sample

The target population was black managers, male and female, within the petrochemical industry that worked at a refinery or at surrounding service providers. For this study, the participants were selected from various departments within the selected companies. The unit of analysis included the lived experiences of mentoring of black managers. The purposive sampling technique was based on management status.

The traditional sample size for phenomenological research is between 2-25 participants. The researchers conducted ten interviews with black managers when saturation was attained.

1.2.2 Analysis Approach

Each interview was transcribed and analysed. The analysis of the interviews served as an open coding tool to identify and recognise patterns among the participants. The researchers used colour-coding to identify common themes. The patterns were grouped into thematic categories.

The transcripts of the semi-structured interviews were sent to the participants for verification and approval. A code was used to protect the identity of the participants (Alase, 2017).

2. Literature Review

Since mentorship of black managers is the focus of the paper, mentorship as a phenomenon is explored in the literature review. Sometimes mentoring and coaching are used as interchangeable terminology, although the approaches differ in many ways. Therefore, the concept of coaching is also explored.

2.1 Creating context

During the first thirty years of South African democracy, the discourse of heritage has been essential in correcting the wrongs of the past regarding the black majority who was deprived of their basic human rights. The rights of the black majority were systematically erased by the devastating effects of colonialism and, more specifically, Apartheid in a South African context (Geber & Keane, 2016). The Apartheid Government, with the main architect being Hendrik Verwoerd (Former Prime Minister of South Africa), created tribal homelands and Bantustans. These homelands were politically constructed based on fear, paranoia, and social and geographical exclusion of Africans from mainstream economic activity (Meskell, 2005).

Prior to 1994 and before the first democratic election of South Africa, black South Africans had to live with enforced separation from white cultural groups. Black South Africans were excluded from certain jobs, industries and positions. This created a vacuum in the country regarding aspects such as mentorship and coaching because black South Africans may have lacked knowledge and experience. Consequently, indigenous cultural values, norms and worldviews are still excluded from organisational and corporate practices (Geber & Keane, 2016).

2.2 Integration Programs and Policies

The ANC government introduced laws to promote equity and socio-economic development of groups disadvantaged by Apartheid which give rise to integration policies in organisations. The three integration laws investigated here, are (1) Employment Equity (EE) which is governed by the Employment Equity Act (EEA), (2) the Broad-Based Black Economic Empowerment (B-BBEE) which is governed by the Broad-Based Black Economic Empowerment Act (BEE Act), and (3) Affirmative Action (AA). The EEA focusses on implementing policies and strategies to rectify the disadvantages to ensure non-discriminatory portrayal in various levels of the workplace (Millers, 2015). This does include not only race, but also various other factors such as people with disabilities.

The B-BBEE objectives differ from the EEA in the sense that it has a stronger focus on the participation of black people in the economy and does not only focus on the employment relationship (Millers, 2015).

2.3 Employment Equity (EE)

The Employment Equity Act of 1998 (EEA) prohibits unfair discrimination against anyone on the grounds of (amongst others) race, gender, ethnic or social origin, colour, culture or language. The act requires employers to put affirmative action measures in place, ensuring equal treatment of previously disadvantaged groups within a public- or private entity. This often leads to a simple qualifying of numbers of certain groups, which subsequently lacks meaningful transformation (Geber & Keane, 2016).

Once the balances had been restored in the future, legislation will have to be revised to protect the rights of minorities such as people of mixed race, white people, Asians, females, and people with disabilities (Mayer, Oosthuizen & Tonelli, 2019). Reaching these targets is likely to benefit an organisation's B-BBEE score or improve its culture and dynamics. Improved B-BBEE scores may give access to other opportunities for an organisation such as government tenders. Improving the culture or the dynamics between different races within an organisation may lead to increased productivity, improved customer services, increased employee satisfaction and a more competitive organisation (Mayer et al., 2019). If employees are happy with their work culture, they are likely to stay. The organisation is also more likely to attract top talent when the current employees are already satisfied with their working conditions.

Negative viewpoints in South Africa towards EE and AA are slowing down the effectiveness of these laws across organisations (Stoffels, 2015). This is evident in the case for both women and men, who react negatively in fear of affecting their self-image because the perception exists that they were appointed in the position, not because of skills, but because of race (Mayer et al., 2019). Those who benefit from EE fear marginalisation, being victims of white manipulation or being sold out when appointed to these positions (Stoffels, 2015). According to Heilman, Block and Stathatos (1997), the stigmatisation argument indicates that professional employees believe in merit and are not comfortable with labels associated with EE such as being "incompetent" and "less qualified". White employees may still question the political and ethical legitimacy of policies flowing from the EEA, especially white middle-aged men, who spent a significant amount of their lived years in the Apartheid Era. White managers predominantly featured as "mentors" for black employees over the last 30 years due to the country's past. White employees have in the past and at present, fear retribution or revenge from members of previously disadvantaged groups, reduced living standards, unfair taxation, and reduction of career opportunities for themselves as well as their offspring (Leonard & Grobler, 2006). White employees associate B-BBEE, AA and EE with a reversed form of Apartheid.

2.4 Affirmative Action (AA)

Affirmative action is defined as, "a range of governmental and private initiatives that offer preferential treatment to members of designated racial or ethnic groups... usually as a means of compensating them for the effects of past and present discrimination" (Swain, 1996, p. 1). The aim of EE is to correct the unfair discrimination practices of the past, through creating equal opportunities for those that were previously discriminated against. The employer has a responsibility to apply these AA regulations (Stoffels, 2015). Applying AA in practice is very complex, often generating conflicting opinions on whether the policy is fair or not. Whilst many South Africans claim to be supportive of AA, it still receives criticism, especially from those it does not favour. South Africa's democracy is faced with the political uncertainty of how to correctly address the wrongs of the past at the same time, while building a nation with a single national identity (Reuben & Bobat, 2014). Similar efforts should be made with mentoring in that South Africa must establish a mentoring system that is authentically African, which encourages growth and development.

2.5 Broad-Based Black Economic Empowerment (B-BBEE)

Policies such as B-BBEE are aimed at rectifying the wrongs of the Apartheid legacy. The Department of Trade and Industry's (DTI) strategy in this regard is to ensure that these wrongs of the past are indeed rectified by ensuring that there is a radical increase of black individuals owning and managing current, as well as new businesses (Pike, Puchert & Chinyamurindi, 2018). The strategy further aims to increase the number of black representatives in executive and board positions and the increase in income levels to go along with it.

The DTI stipulates that all organisations who qualify must comply with the legislative requirements set out by the B-BBEE Act. The B-BBEE scorecard is a mechanism that presents the weightings that certain behaviours and ownership structures contribute to organisations' B-BBEE score, ultimately contributing to social justice. In complying with B-BBEE, organisations are set to gain more tenders from both the private and public sectors (Pike et al., 2018). One of the disadvantages of B-BBEE is that it requires a significant amount of administrative effort from organisations to monitor the compliance (Oosthuizen & Naidoo, 2010). Organisations who participate in B-BBEE practices need a B-BBEE certificate to prove that they are indeed complying to these policies. This certificate is issued by an accredited third party specialising in these compliance audits.

Reuben and Bobat (2014), noted that the most popular research topics on B-BBEE rarely only discuss B-BBEE but comprise of EE and AA as well. It is essential to qualitatively understand the role of B-BBEE legislation and to understand experiences holistically, to subsequently gain a better and deeper understanding thereof (Chinyamurindi, 2017).

According to the DTI, B-BBEE includes all black people in South Africa. The term 'black people' in this instance does not refer to the black race. It also includes people of mixed race as well as Indians (Van Wyk, 2010). Women, youth, workers and citizens living with disabilities are also included, especially those living in rural areas and the term 'black people' is specifically aimed at citizens affected by and excluded as a result of Apartheid (Pike et al., 2018). Under the rule of the African National Congress (ANC), the government of South Africa implemented B-BBEE to transform the economic makeover in the country radically. Issues like fronting and unequal pay based on race is holding back the rate of transformation required to see the economy flourish (Tait, 2012).

There may be a perception that the white minority in South Africa are disadvantaged through a reversed form of Apartheid (King, 2013). This may be a contributing factor to why white managers may not be the ideal mentors for black employees. They might feel that they are being disadvantaged through the process and therefore have a negative attitude towards the mentee. Even though there are many shortfalls when it comes to B-BBEE and its legislation, the government is more determined than ever to implement the policy more fiercely (Jeffery, 2013).

2.6 Mentorship and Coaching

Most managers and other employees use mentoring or coaching to become more effective at their work (Stambaugh & Mitchell, 2018). Even though these terms are not new, academic interest in these terms grew considerably over the last few decades to such an extent that it is believed that a manager's success depends on mentorship and coaching (Koopman, Englis, Ehgrenhard & Groen, 2021).

2.6.1 Mentorship

According to Johnson (2015), mentoring is an interpersonal relationship between a mentor and mentee, where the mentor guides, counsels and supports the mentee. The experience can be mutually beneficial and not only beneficial to the mentee, as with traditional mentoring (Malin & Hackmann, 2016). Mentorship can be provided through educational programs that are experienced at professional organisations or it may occur in an informal manner in an individual's daily life. Mentors are anyone from a manager or senior at work, a friend, family member or someone who guides, counsels, or supports.

Mentorship is a concept that is often difficult to define. According to Peiser, Ambrose, Burke and Davenport (2018), traditional organisational mentoring can be defined as the transmission of organisational cultures and values. This form of mentoring promotes the identity of the mentee as well as the company. It differs from traditional mentoring in that it is more collaborative in nature. Transformational mentoring allocates more fluid roles to both the mentor and mentee. This form of mentoring focuses on development and growth for both parties (Peiser et al., 2018). An indigenous transformational mentoring programme combines Western and indigenous perspectives in that mentors need to incorporate reciprocal learning, as well as implement applicable elements of Ubuntu (Geber & Keane, 2016).

Peretomode and Ikova (2019) explained that a mentor is a more experienced and trusted person, who gives mostly advice to younger people, over a certain period. Mentorship has also been identified as a personal enhancement strategy where one individual develops another by sharing ideas, expertise, values, skills, perspectives, proficiencies and attitudes. Mentoring has various benefits including career advancement, increased pay and job satisfaction (Ellis, 1992; Allen, Jacobson & Lomotey, 1995; Johnson & Nelson, 1999; Bova, 2000). According to Crawford and Smith (2005), the quintessence of mentoring is individuals' personal and professional development. Crawford and Smith (2005) continued to explain that a mentor is someone who can “afford the protégé with opportunities to learn and practice, as well as to reward him or her so that acquired knowledge, performance, and motivation can increase” (p.64). According to Darwin (2000), mentoring relationships have been enclosed in a language of dependence and paternalism which originates from a power-dependent, hierarchal relationship, aimed at continuing the status quo.

Harris (1999) stated that if mentoring is based on a single definition, then the personal, complex nature of the mentoring experience by under-represented groups, such as black management or individuals that do not fit into a certain profile, are often excluded. Even though there has been an increase in research on mentoring, more research needs to be done when it comes to previously disadvantaged groups and their mentorship or coaching experiences. It is important not to exclude coaching as a managerial development and transformation method in the workplace.

2.6.2 Coaching

According to Zuñiga-Collazos, Castillo-Palacio, Montaña-Narváez and Castillo-Arévalo (2020), managerial coaching looks at enhancing the skills of employees through a practical method. This improves the skills of an individual employee to inspire those around them, improve their communication, encourage, and manage new talent towards the same desired results. The possible benefit to the company is that the coaching influences the commitment of the individual at a personal level as well as at a team level. Presently, more managers, executives and companies are starting to realise the benefit of managerial coaching, to improve individual and company performances (Zuñiga-Collazos et al., 2020). The use of practical methods to enhance the skills of Africans through managerial coaching makes more sense for Africans and African businesses as access to formal education remains a problem. The literacy rate of Africans is poor compared to the rest of the world. Most of these problems can be attributed to colonisation and decolonisation.

Managerial coaching consists of a relationship between two individuals, namely the manager and the coach, where the main goal is to create a sustained and positive change in the behaviour of the manager being coached. This should ultimately improve the quality of the professional and personal life of the manager. Sustained change through managerial coaching mainly focuses on the employee's working life, whereas those benefits can be transferred to their personal lives too (Zuñiga-Collazos et al., 2020). Mentorships should not only apply to the professional side of relationships but should also seek to develop and make connections with the personal side. Personal issues should not be viewed separately from professional issues, as they impact each other.

According to Lawrence (2017), most definitions of managerial coaching highlight the important role of the leader needing to oversee the development of their subordinates. McCarthy and Milner (2020) expand on this by mentioning that coaching consists of various sets of skills. These skills are

observing, tentative listening, questioning, setting goals, and giving the right feedback (McCarthy, 2014). Managerial coaching can be seen as a form of management approach which aims to improve the current position of subordinates, inspire innovative thinking, and maximise an individual's potential (Wagstaff, Arthur & Hardy, 2018). The main goal of managerial coaching is to improve the subordinate's overall confidence, development and performance (Woo, 2017). Clear communication and appropriate feedback can broaden perspectives and be achieved (Ellinger, Ellinger, Bachrach, Wang & Elmadağ Baş, 2011).

There are some useful examples of literature on coaching in the South African context, where coaches are encouraged to remain conscious of, as well as apply African values such as Ubuntu to these coaching practices. Geber and Keane (2016) provide some relevant studies that reflect cultural values, particularly focusing on using coaching in cross-cultural scenarios. There is a general lack of research on coaching that is based on African values.

It is important to coach leaders and base their training on deeper cultural knowledge, as this will improve the cultural intelligence (CQ) within an organisation or society. If individuals gain a better understanding of each other's cultures, norms and backgrounds, they are likely to become more tolerant and accepting of one another. To achieve CQ within an organisation, it is paramount to comprehend management and leadership issues which are unique to Africa and South Africa.

African values such as Ubuntu are generally not valued enough in South African businesses or by South Africans who are white. Additionally, coaching does not necessarily address these shortfalls accordingly (Myres, 2013). A study done on the top hundred South African companies found that multiple companies use coaching as a means of leadership development for black talent. This is, however, not incorporated into the business strategy and is largely based on Western values and norms, with little to no reference to Ubuntu (Geber & Keane, 2016). Businesses need to revise their business strategy when it comes to coaching to incorporate African values such as Ubuntu to give coaching by South African businesses an African identity.

2.6.3 Mentoring vs Coaching

Mentoring can be defined as a guard, advisor and friend (Koopman et al., 2021). The mentor is responsible to provide numerous functions which support, counsel or guide the mentee as the project or work is performed (Kram, 1983). St-Jean, Radu-Lefebvre and Mathieu (2018), define that the goal of mentoring programs is to strengthen the mentees' self-efficacy. These definitions are evidence of the change of mentoring, initially serving a widened focus on skills development, to now, also including personal development as mentee by a mentor or more experienced person (Koopman et al., 2021). Coaching can be defined as the process of on-going, on-the-job training carried out regularly by a person with the intent of developing another person's skills. Feldman (2005), describes coaching as the facilitating of the learning process. The transition of these definitions proves that a shift occurred in the meaning of coaching. A shift from instructing to facilitating development.

2.7 Ubuntu Philosophy

The isiZulu definition of Ubuntu is 'Umuntu ngumuntu ngabantu' which translates to 'a person is a person through other people' (Geber & Keane, 2016, p.502). According to Msila (2015), applying the spirit of Ubuntu, allows for cohesiveness, teamwork, caring for each other within the collective vision of the group, organisation or country. Geber and Keane (2016), explains that Ubuntu is a nature of being and a way of living, that differs significantly to the way of being and living in the West. This does not mean that the West lacks humanism and empathy but rather that it focusses on individual interconnectedness, whereas the way of Ubuntu is deeply rooted in connection to community. Ubuntu can be defined as "I am a human being because I belong" (Geber & Keane, 2016, p. 502).

According to Madise and Isike (2020), Ubuntu is relied on to bring unity, healing and continuity within a society. Spalthof (2013), stated that Ubuntu serves as "the force which defends against further collapse of society" (p. 4). Ubuntu is considered a social construct, meaning that the definition is not static (Madise & Isike, 2020). According to Swanson (2007), "it makes a fundamental contribution to indigenous 'ways of knowing and being.' With differing historical emphasis and (re)

contextualization over time and place, it is considered a spiritual way of being in the broader socio-political context of Southern Africa” (p. 53).

Personhood is obtained and the idea that it needs to be obtained in a community could naturally challenge Western thinking which tends to focus on the individual and individual performance rather than the community. Ramose (1999) further explains that the significance of initiation into a community is not purely to obtain personhood but creates a link between those initiated and their ancestor which may further challenge Western thinking which has different views in this regard. Therefore, business leaders must avoid trivialising world views from third world countries, particularly African countries.

It is necessary to seek a balance through applying and testing an integrated value system, where values from the West and African values such as Ubuntu are integrated in a way that best suits South Africans. Multiculturalism has in many instances become the desired outcome, resulting in the neglect of considerations of complex issues and their alignment, and in this respect Ubuntu cannot merely be a buzzword (Geber & Keane, 2016). Therefore, self-awareness practices and exposure to different perspectives will assist businesses in keeping organisational culture constructive and dynamic.

2.8 Ubuntu in Mentoring

Individual rights and individualism are not always upheld when it comes to Ubuntu, which differs from pure Western thinking. Therefore, some of Ubuntu's values need to be excluded, as it may differ too greatly from modern day society entirely. Ubuntu values which are still relevant can be applied more directly to mentoring programmes (Geber & Keane, 2016). According to Nobel Peace Prize laureate, Maathai (2005), “p[Pe]ople without culture feel insecure and are obsessed with the acquisition of material things, which give them a temporary security. Without culture, a community loses self-awareness and guidance and grows weak and vulnerable. It disintegrates from within as it suffers a lack of identity, dignity, self-respect and a sense of destiny” (p. 24). Organisations and the South African society should preserve cultural identity by allocating mentors to mentees that are from the same race or background and who share a common value system, e.g., Ubuntu. There should be balance in the implementation of Western and African values to progress as a society as well as within organisations, whilst staying true to African identity and preserving the right values.

The philosophy of Ubuntu can play an important role in a work environment. According to Munir (2020), when employees are treated like humans through respecting their socio-cultural values and listening to them, they tend to perform better. The needs and rights of others need to be respected when it comes to implementing Ubuntu. According to Khomba (2011), “Ubuntu philosophy also implies that if people are treated well, they are likely to perform better” (p.17).

The Ubuntu characteristics of identity, dignity, self-respect, and destiny relates to mentoring goals and interactions (Geber & Keane, 2016). This relation is especially important in a country with a history of the exclusion of the majority of its population in an unfair and inhumane manner. It is important to be conscious of the different features of Ubuntu and how this opposes the Western worldview in many ways. Acknowledgement needs to be made that there are adjacent elements across these worldviews and that there are often more similarities than not. This can result in a future where leaders, mentors and coaches can affiliate with worldviews from different cultures, ultimately breaking walls down between South Africans.

According to Geber and Keane (2016), certain worldviews, such as the African worldview and more particularly Ubuntu, tend to receive hostile treatment from the West. Westerners tend to be overly biased towards their practised worldviews and tend to see their views as being superior to that of third world nations. This sort of mindset is likely to overflow to business and society. This ultimately reflects on mentor-mentee relationships, where either the mentor or mentee may be biased towards one view or the other, especially if they are from different races, cultures, or backgrounds. Mentors and coaches should embrace best practices from other cultures instead of opposing them.

2.9 Transformational Mentoring

Mentoring and coaching with different worldviews in mind can bring about change at a macro level within companies (Ivey, 2013). This is beneficial for a society like South Africa's, that is undergoing and still needs to undergo further changes in the workplace regarding the composition, policies, and practices of its organisations (Geber & Keane, 2016). By applying a Western worldview, the world is categorised into dualities such as mind and matter, living and non-living. In contrast to this, through Ubuntu the world is seen as holistic, an attribution of human motivation or behaviour.

Hierarchy in Ubuntu is valued as normal, whereas the West is constantly aiming for equality, being a universal value. Some of the other differences are that Ubuntu sees success as (1) belonging to the collective, (2) encouragement of working together, (3) being modest, and (4) harmony with others and the community. The Western worldview on the other hand encourages success through (1) competition, and (2) individual achievement even if it is through critique or conflict. Indigenous transformational mentoring combines both indigenous and Western worldviews into a typical mentoring programme (Geber & Keane, 2016). Mentors need to be willing to learn about Ubuntu's principles and apply them to their mentoring practices. Respect and awareness of different worldviews need to be applied in mentoring across different cultures and races.

2.10 Social identification and choice of mentor

Based on social identification theory (Tolman, 1943) individuals tend to identify themselves with different social categories such as religion, gender and age, and in South Africa specifically with race due to the historical past that used race as a basis for segregation. Ashforth and Mael (1989) state that social classifications firstly enables an individual to cognitively segment the social environment, enabling the individuals to define others and ascribed characteristics of the category to those associated with the category. Secondly, it enables individuals to define themselves in the social environment. Social identification is to belong to some human aggregate.

Ashforth and Mael (1989) identified four principles relevant to group and social identification, used interchangeably in this regard. Firstly, social identification is a perceptual cognitive construct that is not linked to any specific behaviours or the experience of feeling the underlying emotional state. The individual identifies with a group because they are psychologically entwined with the fate of the group. Secondly, social identification is linked to the personal experience of successes or failures of the group. Thirdly, social identification is distinguishable from internalisation. Identification refers to the self regarding social categories, whereas internalisation refers to the implementation of values and attitudes within the self as guiding principles. Even if an individual defines themselves in terms of the category, group, or an organisation, they may not necessarily agree with the values, attributes, authority or characteristics of the applicable category, group or organisation.

Lastly, identifying with a group is like identifying with a person, such as mentor-mentee, doctor-patient, and husband-wife (Ashforth & Mael, 1989). Organisations often promote generalised identification of an individual with the organisation through the routinisation of charisma. This could be prevalent in the mentor-mentee relationships proving ineffective in dealing with black and previously disadvantaged mentees.

3. Results and Findings

3.1 Understanding of mentorship

The first theme investigated was the mentees' understanding of mentorship. The results revealed that black managers had a similar and fairly accurate understanding of what is meant by mentorship. Participant A, B, C, F and I cited the following: to give assistance, support, or guidance to the mentee. The assistance, support or guidance was mostly given to assist the mentee to grow or reach their goals. Three participants (Participant A, B & H) viewed mentoring as "the assistance you give to your team members whether it be a senior or the lowest team member - you have to assist them" and subsequently they have to assist you.

Participant F made a statement on how he perceived guidance in the context of mentoring: "Mentoring is standing on the shoulders of someone who is currently seeing further than you in

pursuit of your interests.” Participant A, G and J understand mentoring as the training or coaching of mentees so that they can develop and improve their skills and expertise. Participant G and A stated that mentoring is about unlocking the “special expertise” of the mentee.

Participant A and H considered a mentee’s needs and expertise as central in their understanding of mentoring. Participant H, I and J further viewed mentoring as encouraging growth on the mentee's side. According to Participant I, his “job is to enable them and maximize their potential so that they can be able to grow up to a level that is required”. Participant D made a single statement around mentorship being the impartment or sharing of information with those being mentored. Participant G and J explained mentorship as developing others. All the understandings and explanations of mentoring given by the participants can be linked to the mentee's development as single thematic category.

3.2 Lived Mentoring Experiences of Black Managers

Two of the participants (Participants A & E) had lived mentorship experiences by mostly being mentored by white mentors. Both these participants mentioned that they had supportive white mentors and a generally positive experience. Participant A stated: “I knew that he wanted the best for me.” Participant E mentioned that his white mentor would even call him during the night to find out if he was safe. Although both participants experienced compassion, their experiences were somewhat different. Both stated that the white mentors entrusted them with responsibility to perform tasks, whilst installing belief in them simultaneously. Participant E adds that the mentors “trusted” him and “liked” him, which made him believe more in himself. Participant A mentioned that her white mentor pointed out that in comparison to other mentees she may not have had the necessary “competencies or education”, but that he (the mentor) still wanted to see her excel in life. This comment by her white mentor installed trust and belief in the participant to go far in life. Participant E had mostly positive mentoring experiences, while Participant A had some negative experiences as well with regard to the mentors who were responsible for her positive experiences.

In Participant A’s first mentoring experience of having a white manager as a mentor, she experienced a lack of respect from the mentor in the initial stages of their relationship. The participant stated that during a meeting with a client, the mentor started “swearing” at the participant. The participant excused herself and left the meeting. She further told him if he “cannot respect” her, she will put in a “grievance or report” against him. Another white mentor took her “under her wing” and taught her a lot. This mentor seemed to be very possessive towards the mentee participant, which added another negative aspect to the lived mentoring experiences. The mentor did not allow her to communicate or work with anyone except herself, as it seemed that she might have been intimidated by her.

There were some unfortunate racist behaviours towards Participant A on two occasions during her lived mentoring experiences as a black manager. The first incident was when a mentor called her “bushy” (i.e. a bushy afro hairstyle) and although she “never saw it as a racist comment”, it should be noted that others are likely to view such a statement differently. The second incident was when the participant was assigned to a project in a different part of the country. She stated that: “When I got there, I had a bit of trouble with some of my colleagues that didn’t accept us. As a different race, they didn’t accept us.”

Participants C and J mentioned only having white mentors during their lived mentoring experiences, with no mention of a black mentor from either participant. Participant J mentioned that a white manager gave him guidance and taught him “that you have to stand up for yourself”. He further adds that the same white mentor taught him “solve the problems, do not run away from problems”.

Participant J recalled lived experiences of a white mentor who instilled belief in him and encouraged him to take opportunities when they arise. He stated that this particular mentor told him: “You are not destined. So, you should always look for opportunities.” This was followed by another statement: “Where you see an opportunity, where you see you can make a difference, then that is what you should strive for.”

In contrast to the participant that only had white mentors, there were also participants (Participant D & G) who were in their lived experiences predominantly mentored by black mentors up to this point in their lives. Participant D mentioned that he learned a lot from the black managers he previously worked with. These colleagues fulfilled a mentorship role for him during his tenure.

Participant G spoke highly of an inspirational black mentor who has given him guidance and made him believe in himself. "He was inspiring," as he taught him "how to achieve the goals that you want". He continued to mention that: "The most important thing that mentors need to do is to unlock people's awareness within themselves." Participant G made a comprehensive point around why mentorship was not a formally introduced concept throughout his lived experiences. He argued that mentoring was a natural relationship that forms between a mentor and mentee. He explained further by saying that the idea of mentorship should form naturally and had never been formally introduced during his lived experiences. He argued that a mentee is likely to form a relationship with a mentor who shared similar "attributes" with him.

There were certain participants (Participant F, H & I) that have had significant mentorship experiences from both black and white mentors during their lifetimes on both a personal and professional level. Participant F stated, "I was very fortunate to be mentored by the best people in the industry that are currently holding senior positions." He added that "the nice thing about being mentored by those guys is that they understand the industry". As a result, there were insights shared with him on how to make his business succeed within the industry. Participant H spoke highly of a white mentor that installed belief in him through one memorable act. He got himself into trouble at work whereafter his mentor approached him and told him: "Face whatever happens here today, as you are one of my stars." Instead of breaking him down, the mentor gave him an "opportunity to prove everyone wrong". She (the mentor) motivated him (the participant) that day to turn his career around in giving him the necessary emotional and physical support. He confirms this by stating: "that was the turning point in my career". It is worthwhile to note that the relationship was not only professional but personal too. Participant I mentioned a positive mentoring experience from a white mentor, where this mentor gave him the necessary guidance and training on how to perform his work successfully. As confirmed by the participant, "she took me through the process, and I actually learned a lot under her". He further mentioned a similar positive mentoring experience from a black mentor, who gave him the guidance and training required to be a safety officer. He stated: "So he took me throughout the whole thing, the site-based safety, risk assessments, toolbox talks, tools, and equipment inspections."

Participant B was the only participant who had negative mentoring experiences from mostly white mentors, as well as a single negative experience from a black mentor. At one of the previous companies he worked, he confirmed that "it was difficult as a black man". From the interview, it was evident that there was racist behaviour by the predominantly white management, as he was "looked down on as a black person" and "no one took him seriously". This oppressive culture has created a negative mentoring culture within this organisation where white mentors could still be resistant to change.

3.3 The Significance of a White Manager as a Mentor

Two participants had limited to no white mentors in their lived mentoring experiences and could not fully contribute as a result. After analysing the codes and noting the frequencies it is evident that there were both positive and negative lived experiences of having a white mentor as experienced by the participants. It is important to note that the majority of these experiences were positive. Three of the participants (Participant A, E & H) mostly had white mentoring experiences. Although mostly positive, there were certain negative mentoring experiences as experienced by Participant A that should be noted under this sub-section. As stated earlier, the participant had a white mentor who became overly controlling and allowed her very little freedom or interaction with others. She capitalised on the participant's hard work. The situation got to the extent where the company sent the mentor back to the head office, where the mentor initially came from, after the company conducted a performance evaluation.

Participant E spoke highly of his mentors who were predominantly white. It is evident that these mentors were supportive and entrusted the participant with responsibility on numerous occasions. The mentors would show the participant how to do the job correctly and then trusted him to perform it safely.

Participant H mentioned an important relationship that he had with a white mentor in discussing his lived experiences. The participant recalled that this mentor was and still is a relevant figure in his life. The participant goes on to mention another white mentor who entrusted him with responsibility to get tasks done as this person gave him the ability to make decisions.

As stated earlier, Participant A experienced an unfortunate incident whereby a white mentor started swearing at her in front of a client. The same mentor also referred to her as “bushy”, which many women of colour would deem racist. Given how close their relationship was, she forgave the mentor for swearing at her as well calling her “bushy”. The following experience may give further insight as to why she may be so accepting and forgiving. This participant “grew up with white people being owners of companies, businesses, running businesses and being managers”. So, to her it has been the norm for “the boss of the company to be white” and “the manager to be white”. These are circumstances that the participant was used to.

As mentioned earlier, Participant B mostly had negative experiences of mentoring by white mentors. He mentioned that the experience “wasn’t good, as it basically was just dictatorship”. He felt that black people had no say within the organisation.

Participant C and Participant I both had one white mentor who gave them guidance or support to solve problems. Participant C’s mentor taught him to “solve the problems” and “not run away from problems”. He also taught the participant to be independent and “stand up for yourself”. Participant I had positive mentoring experiences from various white mentors during his attendance at university. He formed good and lasting relationships with some of his lecturers and professors.

Participant F had a unique story to tell, as he was greatly influenced in his youth on a personal level by a white mentor. Golf was introduced to him by a white person, who after a few months invited the participant to stay with the mentor and his family for a few months. He was fourteen years old at the time and “lived with them for a good eight years”. The white family was very supportive of him emotionally and physically. They kept close contact after the family had to relocate and remain in contact up to today. He experienced love from this family. He was “helped and encouraged” by this white mentor and his family and “considered them as his own family”. They treated him with “respect and dignity”, and “they were willing to share not only their experiences but their resources as well”, something he also strives to do as a mentor for his mentees in the present.

Participant G and J each had a single positive lived experience with a white mentor. According to Participant G, the manager thoroughly coached him, as he confirmed in the following statement: “he actually coached me that for us to achieve what we want, is superb”. The white mentor was also a significant motivator in the participant’s life. The participant confirmed this when he stated that: “he is the one who actually motivated me to do my postgraduate.” He also confirmed that it was “very informal how he mentored” as well as “natural”. This white mentor also entrusted him with responsibility, as he would give him tasks “and then he would just watch from a distance”. The mentor also taught him sustainability through integrity. This mentor factored in sustainability in his decision-making process. The participant further stated that sustainability “does not go hand in hand with dishonesty” and that you cannot separate sustainability from integrity. According to the participant, many organisations have failed as “they are not honest or do not have integrity”.

According to participant J, his experience was very positive, mostly due to the equal and consistent treatment he received from this white mentor. According to the participant, it did not matter to the mentor whether you are “black or white, any colour, he was handling us the same”. The consistent treatment was another admirable trait portrayed by this white mentor. Participant J confirmed this trait

when he stated that, “even when there are ups and downs in our country, we always talk”. The relationship between participant J and the white mentor was not solely professional, but personal as well. According to participant J, “even like today. He is on pension, but we still talk”. The participant continued saying, “the mentorship is always carrying on, I would think, say a lifetime”. These statements yet again confirmed the importance of these mentor-mentee relationships stretching beyond a professional one. These relationships seem to leave a lifelong mark on both the mentor and mentee.

3.4 The Significance of a Black Manager as a Mentor

A split in opinions by the participants was evident regarding the significance of having a black mentor. Three of the participants (Participant A, B & E) stated that race had no significance for them, whereas five participants (Participant C, F, G, H & J) stated that it was indeed significant. It is also important to note that two of the participants (Participant D & I) were undecided on whether race was significant for them and made additional comments as to why they were undecided.

Participant A and E gave similar responses on the matter, as they were both adamant that race was not significant. This is important for the researchers to note as both participants predominantly had positive mentoring experiences in having white managers as mentors throughout their careers. According to Participant A it did not matter whether “it is a black or white manager”, as long as that mentor has respect. She also mentioned that “I feel that as a leader, you need to mentor people and as a manager you must be a people’s person. So, whether you are black or white makes no difference.” To this participant other attributes, like showcasing respect, is more significant than race. Participant A stated that as a coloured woman, she felt that they “are always in the middle” compared to other races. “So, whether your manager is black or white, you need to fit in with them”.

Participant E stated that he does not “have a problem working under the black, the whites, the Indians or the coloureds” as race is not significant to him. What he does find significant is that there needs to be mutual respect between a mentor and mentee.

As seen throughout the interviews, Participant B mostly had negative experiences from both black and white mentors. Subsequently, he viewed race as not being significant when it comes to mentoring. He said that having a black or white mentor would “not have made a difference, as it depends on the mindset of the person”. Most participants (Participants C, F, G, H & J) agreed race was indeed significant in the relationship between the mentor and mentee. It is also worth noting that four of the participants (Participants C, F, G & H) had both black and white mentors during their lived mentoring experiences. Participant J is the only exception in this regard, as he only mentioned a positive mentoring experience from a white mentor. Participant C stated that “previously there were no black mentors or managers. Now everything is quite easier for us to be leaders”.

The participant argued that the younger generation should be able to see opportunities for themselves and take necessary action to capitalise on it. Participant C and F gave a comprehensive overview as to why having a black manager was significant to them. They both believed that things had changed for the better in the South African society and that black individuals had much better opportunities now than in the past. Participant F stated that “we as blacks, we understand our struggle better than anyone else and being mentored by a black person who is open minded” makes the process more effective, resulting in a more positive outcome for both the mentor and mentee. Participant F continued to build on this statement when he confirmed that, “given our history, black people were not given opportunities”, so it is encouraging for him to see that “South Africa has changed and is busy transforming for the better.” Participant G says that “there is still a barrier between relationships, especially personal relationships between people of colour and whites”. “There is still that grey area, whereby that relationship ends only on a professional level”, and rarely overflows to a personal level, especially if the mentor and mentee are not of the same race. Participant G mentioned that when one talks about a personal relationship, it must be “guided by respect” and can result in wonderful outcomes. This is important for the mentor and mentee relationship so that the relationships form “on a personal level not only on a professional level”.

Participant J said that race was indeed significant as black people understood each other's culture and their way of doing things. This participant also mentioned that it was easier for a black mentor to relate to certain situations in comparison to a white mentor. He continued by saying, "to a white mentor, you have to explain and make him understand" which is not the case with a black mentor. According to Participant D, the race is not significant. Whether a mentor is black or white, it has no impact on him. He did, however, mention that in terms of communication, "it is better because of the language barrier" as people of the same culture are likely to "understand each other better". He went on to make an interesting point on the lack of support between black people, stating that "there is those notions that with us as blacks we don't give one another the necessary support". He further mentioned that when a black mentor feels that a black mentee "can do better than him, he will make sure that he doesn't get the necessary attention to maybe be promoted to the position where he is supposed to be". Lastly, he elaborated further on this point by highlighting black mentors "become cautious when giving out information", as they feared information they were sharing "might come up against them", making them reserved to share information with their fellow black mentors, mentees or colleagues. Similar to Participant D, Participant I made additional statements on the matter in which it seemed that he agreed with the importance of race in EE, BBBEE and equity, but that once a black person is appointed, race should not be an issue, as equity had been attained in terms of race. However, on a personal note he believes "that goals and standards are the same" in terms of mentoring and that a mentor needs to comprehend these goals and standards. Based on the latter, the participant confirmed that he "won't go with a white or black manager who does not understand the goals and standards, as the objectives remain the same at the end of the day". To conclude, this participant felt that regardless of race, the objectives of mentorship should be reached.

3.5 Black Managers' Perspectives on lessons learned for future mentoring

There are various views from the participants on what they would do differently as mentors going forward. Some of the themes that stood out were: (1) forming personal relationships with mentees, (2) instilling belief, (2) addressing shortfalls, (3) increased interaction, and (4) encourage authenticity and developing others. Participant G and Participant I both emphasised that going forward, they would focus on the personal aspects of mentoring. Participant I was adamant when it came to future mentoring relationships. He would "not just keep it professional", by getting to know different mentees from different races in a social context. It should become a mutually beneficial friendship for both the mentor and mentee. He further stated that he would be focussing on one-on-one sessions so that he "can be able to go deeper". The participant further added that by crossing this personal barrier, the mentor and mentee were likely to confide in each other. Participant G and Participant I also mentioned the importance of understanding each mentee's aspirations, and shortfalls, as well as encouraging authenticity. Participant I confirmed that going forward as a mentor, he would try to understand that people are authentic in that they "have different aspirations and different ways of looking at things". The mentor needs to identify weaknesses and strengths and build on them. He mentioned that this needs to be done to maximize the potential of the mentees. Participant G also highlighted that going forward, he would encourage his mentees to follow their own dreams, so that they do not become a mutation of him, ultimately striving towards authenticity. Another sub-theme that arose from the interviews was that going forward, increased interaction and communication with their mentees was important. According to Participant D, he would give mentees more information in terms of professional career development, as well as giving personal advice on issues such as using their money wisely. Participant H stated that going forward, he would increase his interaction with mentees, as well as form closer bonds by having one-on-one sessions. The feedback given by Participant D and H, indirectly indicated that they also understood the importance of a mentoring relationship being both professional and personal.

Participant B and Participant I stated that going forward, they would focus on the development of mentees, which encapsulated codes such as giving guidance to mentees as well as encouraging growth. According to Participant B, he would "make sure guys are given room to grow and guidance as well". According to Participant H, "we all have our skills and at the end of the day I want to help you take your skills and make it your strength". Participant I contributed to this view and added that "one need to look at the weaknesses and strengths and build on them".

3.6 Discussion

3.6.1 Understanding mentoring

There are significant similarities between the definitions of mentoring as given in the literature and how the black managers from the interviews understand it. As the literature states, mentoring is where the mentor guides, counsels and supports the mentee (Johnson, 2015). The majority of the participants (Participant A, B, C, F & I) viewed mentoring as giving assistance, supports or guidance to the mentee. Participant A, G and J had very similar views on mentoring. They explained mentoring as the training or coaching of mentees to develop skills and expertise. Identifying the mentee's needs and expertise are central in Participant A and H's understanding of mentoring. Participant D experienced mentoring as the impartment or sharing of information with the mentee. According to Participant G and J mentoring is to develop others. The researcher found this view significant, as it aligns with all other definitions. It can possibly serve as a summarised definition for mentoring.

There are various different views from the participants on what they would do differently as mentors going forward. Some of the themes that stood out were: forming personal relationships with mentees, installing belief, addressing shortfalls, increased interaction, encouraging authenticity and developing others. The literature mentions the significance of having both a personal and professional relationship within a mentoring relationship (Crawford and Smith, 2005). This highlights the significance of this factor when it comes to successful mentoring. It is also mentioned on multiple occasions under the participants' lived mentoring experiences, confirming this factor's significance. The main themes that arose on the understanding of mentoring is that mentoring is the development of others, followed by assistance and guidance given to the mentee. Training and coaching are the next set of themes, which were each mentioned twice by Participants A and J and Participant C and G respectively.

3.6.2 Lived Mentoring Experiences of Black Managers

In assessing the codes as presented by the data analysis, it is evident that the lived mentoring experiences between participants differ significantly. It confirms that white and black people, as well as mentors and mentees, still have different views as South Africans on mentoring relationships. There is also a difference in behaviour between how black and white mentors treat their mentees, as they most likely had their own mentoring experiences. South Africa's high levels of inequality, diverse upbringings, unequal opportunities, and differing levels of education makes for entirely different mentoring views and experiences.

It is evident that there were positive as well as negative experiences from both black and white mentors. The positive experiences were linked to themes such as, emotional, and physical support from a black or white mentor, instilling belief, guidance or assistance, solving problems, training, mutual respect, and sharing of information. In contrast, there were also negative experiences. These negative experiences were linked to themes such as, racist behaviour by white mentors as well as lack of respect from white mentors. As stated in the literature, negative attitudes towards EE by white mentors slow down progress within South African organisations in the fear of affecting self-image (Mayer et al., 2019).

According to Geber and Keane (2016), to achieve cultural intelligence (CQ) within an organisation, it is important to consider management and leadership issues unique to South Africa and find unique South African ways of dealing with those issues, especially between different races. The training and coaching of leaders need to be based on gaining a better cultural knowledge, especially in a multicultural society like South Africa. Sharing these different worldviews and perspective, allow for a higher level of thinking within society and organisations. Several CQ principles are already present in the participants' lived mentoring experiences from white and black mentoring experiences. Respect is one principle that is evident in the positive mentoring experiences of the participants. However, to culturally integrate the other principles, the relationship between mentor and mentee needs to be personal and not merely professional, so that concepts such as Ubuntu can effectively be incorporated.

The literature confirms that mentoring is an interpersonal relationship between a mentor and mentee (Johnson, 2015). Other literature states that the essence of mentoring is the development of individuals on both a professional and personal level (Crawford & Smith, 2005). Participant G made a valuable contribution on the importance of a mentoring relationship needing to be both personal and professional to break down the barriers between people of different races, as these mentoring relationships rarely overflow onto a personal level.

Participant G also argued that a mentee is likely to form a relationship with someone who shares similar attributes with them. As Thomas (2001) confirms this in the literature, close mentoring relationships form easier when parties share attributes such as race, culture, age, or gender. According to Athey et al. (2000), mentoring may feel more natural when the mentor and mentee are of the same race or culture.

Black mentors can relate more easily with black mentees regarding cultural issues, as African cultures share similar attributes. This allows for the relationship between mentor and mentee to form more naturally. It is important to note that although the relationship has the potential to form naturally, there is still a personal element required for a mentoring relationship to be mutually beneficial, even between a black mentor and mentee. According to the literature, mentoring is the best strategy to share knowledge in a mutually beneficial relationship for both the mentor and mentee (Santos et al., 2019). Malin and Hackmann (2016) add that the experience can be beneficial to the mentor and mentee, and not only beneficial to the mentee as with traditional mentoring.

The researchers have noted that most positive experiences by black managers in having white mentors had a personal aspect to their relationship, i.e., the relationship was both personal and professional. Five of the participants (participants A, E, F, G & J) had positive experiences where they had strong personal relationships with their mentor. Participant A, E, G and J formed friendships with their white mentors that took the relationship far beyond their professional relationships. The researchers recognised that there is a strong connection between a positive relationship experience and how personal it is. The mentoring relationship experienced by Participant F was at the extreme end of personal, as a family relationship formed between the mentor and mentee.

To improve CQ, the organisation needs to further create awareness to prevent mentors from being culturally exclusive and making explicit cultural references on how certain cultures do things. They should strive to be inclusive and aim to create a caring culture by telling each other stories so individuals can learn, relate, share, and explore (Geber & Keane, 2016). To integrate these principles, the relationship between the mentor and mentee needs to be personal, as the integration of these principles are personal. The researchers argue that to drive a culturally integrated mentoring response, the relationship between mentor and mentee needs to be personal. If not, the implantation of such principles will be artificial and short-lived.

The lived mentoring experiences in having a white manager as mentor has delivered a mixed set of results. Three of the participants predominantly had positive mentoring experiences from white mentors. Participant A however highlighted some negative traits displayed by two white mentors with whom she had a positive mentoring experience in general, as well as a separate incident where colleagues did not accept them based on race. The two isolated negative incidents experienced by participants A and B are evidence that there were still white managers living in the past, as they are resistant to transformation and progress. The behaviour by the white mentor who was overly controlling and restrictive was evidence of a white mentor who perhaps feared retribution from previously disadvantaged groups, reduced living standards and job losses (Leonard & Grobler, 2006). The same can be said about the organisation responsible for the all-round negative mentoring experiences as experienced by Participant B. The way the mentor swore and spoke to the mentee and the racist nick name given to her is evidence of white mentors who still had negative attitudes towards EE. These behaviours are slowing down progress within South African organisations in the fear of affecting self-image as white South Africans (Ivey, Geber, and Nänni. 2013).

3.6.3 The Significance of Having a Black Manager as a Mentor

The majority of the black managers agreed that having a mentor of the same race was indeed significant, as mentoring across different races was not a natural act especially in South Africa with its past of segregation. Close mentoring relationships are much more likely to form when the mentor and mentee can relate with each other based on race, culture, age, or gender (Thomas, 2001). Three of the participants convincingly agreed with the literature.

Even though Participant D did find race significant on a personal level, he also viewed language as a possible hinderance to communication when it comes to mentoring across differences. According to Participant F, black mentors and mentees get along more easily, as they understand each other's struggles. "Struggle" in this instance refers to the economic hardships that the majority of black South Africans faced daily. Participant J believes that race is indeed significant when it comes to culture and beliefs. African traditions and beliefs are often difficult for white South Africans to comprehend and incorporate into organisations. It is much more convenient and fairer to have a black mentor who understand these traditional or cultural situations, as they are likely to have experienced it themselves at some point.

Another main theme as expressed by the participants on the significance of having a black manager as mentor is that it encourages the realisation of better opportunities for black South Africans post-Apartheid. Participant F was encouraged by the progress South Africa has made in providing opportunities for black South Africans through transformation. Black people did not have the same opportunities in the past as they do in the present. This is largely due to transformative laws such as B-BBEE, EE and AA, which has the main function of correcting the wrongs of the past and addressing issues like inequality and lack of opportunities as experienced by black South Africans. Participant C added that there are more opportunities now for black people to be leaders. Strategies like B-BBEE aims to increase black representation at the executive and board level.

4. Conclusion

Although there are numerous positive examples in the data, certain South African organisations still lack equality and diversity as seen in the analysis, where certain organisations still have an oppressive culture toward black employees. These problems create a degree of mistrust between individuals of different races within such an organisation. This level of mistrust is likely to also have a negative effect on mentoring relationships, especially between employees of different races. White, middle-aged mentors who still have the mentality of Apartheid are still resistant to mentoring relationships and the benefits that may arise from it. It should be seen as a threat to organisations and society when it comes to transformation as it will hinder progress within organisations. Although significant progress has been made as seen with some of the participants, much more still needs to be done.

It is evident in the way certain mentors, black or white, treated their mentees that some companies are indeed on track regarding implementing policies (from EE, AA & B-BBEE legislation) and mentorship programmes that support transformation in applying best practices such as Ubuntu. The Ubuntu principles of care, respect, responsiveness, and interconnectedness are evident throughout the feedback given by the participants. This applies particularly to business sectors where focus needs to be placed on gaining a better understanding on cultural aspects in the workplace to allow for a more inclusive organisation, and better relationships between employees of different backgrounds and races. The researchers noted that the mentoring participants' understanding aligned with the Western view of mentoring. Most of the participants viewed mentoring as giving assistance, support, or guidance to the mentee, whereas literature defines mentoring as a personal enhancement strategy where the mentor develops the mentee by sharing ideas, expertise, values, skills, perspectives, proficiencies and attitudes.

The lived mentoring experiences as presented by the data analysis differ vastly between participants. It confirmed that South Africans, black and white, differed positively and negatively. The way a white mentor treats or handles a black employee differs significantly between individuals and organisations. The same can be said about black mentors. South Africa's democracy is still facing the same issue of correctly using policies following legislation such as EE, AA & B-BBEE, to correct the wrongs of the

past, whilst building a nation with a single identity (Rueben & Bobat, 2014). Similarly, South Africans should find a single identity when it comes to addressing the shortfalls posed by mentoring. The more transformed and developed a society is, the less significant race ought to be. It is evident from the data that the majority of the participants still view race as being significant given the history of South Africa. Factors which contribute to this are that black people share similar or related cultures, languages, backgrounds, and the history of one or other form of struggle against inter alia Apartheid. It is also easier for a black mentor to form personal relationships with a black mentee because they share some of these elements just mentioned.

4.1 Theoretical Contribution

South Africa is a very diverse and complex society. A society that is constantly faced with enormous social-economic issues and the complexities of correcting these issues. Transformational mentoring allocates more fluid roles to both mentor and mentee, focussing on the growth of both parties (Peiser et al., 2018). In conjunction with concepts such as Ubuntu, transformational mentoring can assist South African organisations in finding a single identity for mentoring. Mentoring that combines Western and indigenous views into an authentic South African view. This process should not be forced, but handled with the correct intent, urgency, and desired outcome in mind, so that past mistakes are not repeated. Multiculturalism has, in many instances, become the desired goal, resulting in neglect of certain issues and how they are resolved so that terms such as Ubuntu lose its depth and value (Geber & Keane, 2016).

5. Managerial Implications

Management and stakeholders need to do more to create an inclusive society in an organisational culture that allows for better understanding of cultural differences and encourages improved relationships between employees of different races. Organisations need to improve on CQ by dealing with issues when it comes to diversity (Geber & Keane, 2016). Leaders, managers, and mentors need to be coached on deeper cultural knowledge to improve the CQ within an organisation or society, especially in a complex society like South Africa. If individuals gain a better cultural knowledge of each other, individuals will become more tolerant and accepting, ultimately forming a single identity.

Based on the results of the study, mentoring should be used more in a transformational manner within organisations, where the mentee learns from the mentor and the mentor from the mentee. They should also develop more of a personalised relationship, The mentor must also take a keen interest in the personal career and life aspirations of the mentee. Mentees should be encouraged to have agency to identify their own development opportunities as well, with the mentor providing support for this.

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Factors Influencing the Work Engagement of Human Resource Practitioners

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Keywords

HR practitioners; work engagement; meaningful work; leadership; communication

Abstract

Human Resource (HR) practitioners are perceived as custodians of work engagement in organisations, but there is a paucity of research conducted among the work engagement of HR practitioners themselves. The purpose of this study was to explore factors influencing the work engagement of HR practitioners. An on-line survey was conducted among HR practitioners in the Nelson Mandela Bay area, selected via convenience and snowballing sampling. It was established that Meaningful Work, and Rewards and Recognition, predicted work engagement among this group of HR practitioners. Recommendations with regards to these factors are presented to managers of HR practitioners, as well as to line and senior managers across all functions in organisations.

1. Introduction

The Human Resources (HR) department is a strategic role player and key enabler in organisations, with proven evidence of the value that strategic human resource management (SHRM) provides to organisational performance (Oh et al., 2017). Dave Ulrich (1996), renowned for seminal work in SHRM, identified Strategic Business Partner, Change Agent, Administrative Expert and Employee Champion as crucial HR roles in ensuring the alignment of human resources with organisational vision, values and strategy, and in establishing HR as a business partner (Ulrich, 1996). A qualitative study by Fareed et al. (2022), conducted in an information and technology environment in Pakistan, identified eight important areas in which HR needs to demonstrate effectiveness to make a meaningful contribution to the organisation. These include strategic recruitment, provision of support and services, communication, compliance to policy, proactive HR practices, responsiveness to employee needs, support of careers and fulfilling HR responsibilities. In South Africa, these roles are amplified as human resource practitioners are not only concerned with the achievement of organisational goals and the goals of the HR function itself, but also subscribe to the national agenda of transformation through ensuring compliance to labour law and upholding social justice and equality, while promoting inclusivity and employee empowerment within organisations. However, even the best developed bundles of HR practices cannot meet their intended purposes if they are not implemented by competent and committed HR practitioners (Oh et al., 2017). In this respect, the South African Board for People Practices (SABPP, 2022a) identified pillars of professionalism and core competencies required by HR practitioners to ensure that they make an impact in the organisation. HR practitioners need to understand and support the HR objectives and strategies of the organisation, while recognising their rationale and the outcomes that are expected. Practicing HR is therefore not a mechanical function. For HR practitioners to be effective, they need to be engaged in what they do, demonstrate passion for the profession and deal competently with the challenges associated with the profession.

HR practitioners operate in a fast moving, pressurised environment and are exposed to many stressors (Abdalmajeed Alshibli & Alzu'bi, 2019; Fareed et al., 2022). In South Africa, HR practitioners do not

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only have to interact with senior managers, mid-level managers, supervisors, employees and trade union representatives across various organisational departments, but they have to also deal with external stakeholders and service providers such as the Department of Labour (DOL), SETAs, pension and provident funds, and medical insurance institutions. Further challenges relate to diversity, labour turnover, skill shortages, technology, employee development and adjustment to change (Dlamini et al., 2021). Stress-related challenges typically encountered by HR practitioners are changing industry and business conditions, opposing needs of employers and employees, complex administrative requirements, communication breakdowns, conflict, employee grievances and disciplinary inquiries. Ironically, HR is also the custodian of health and safety, and employee wellness in an organisation (Saks, 2022; Tran et al., 2022), a role which became especially prominent during the Covid-19 pandemic (CIPD, 2021). In addition to these factors, HR practitioners often feel under-recognised in an organisation, having to quantify the impact of people practices in the organisation and being referred to as a service rather than a core function (Fareed et al., 2022). Not being able to cope with these challenges and demands place HR practitioners at risk (Warnich et al., 2021) and their work engagement could be threatened (Kwon et al., 2019).

Work engagement is a positive and satisfying state of mind resulting in the employee being energised, absorbed and dedicated to their job as well as the broader work environment (Schaufeli & Bakker, 2003; Joubert & Roodt, 2019). Work engagement therefore contains a physical, cognitive and emotional component (Taghavi, 2019). Work engagement is associated with constructive relationship building, commitment, loyalty and productivity (Chalermjirapas et al., 2019; Moletsane et al., 2019). Facilitating work engagement is one of the greatest challenges for contemporary organisations and specifically for HR as a custodian of the HR function in organisations (Gyensare et al., 2019; Saks, 2022). It is therefore vital that HR practitioners themselves are engaged in their roles to have an exponential effect on the work engagement of other members of the organisation, including leaders and employees. While most studies on work engagement focus on employees or the role of HR practices in work engagement (Saks, 2022), this study specifically focused on the work engagement of HR practitioners themselves. The study was conducted in the Nelson Mandela Bay region, in the Eastern Cape of South Africa, and was done in partial fulfilment of the requirements for the degree of Masters in Business Administration.

2. Problem Investigated

Strategic HRM is crucial for attaining organisational goals (Oh et al., 2017) and in South Africa the HR department in any organisation also contributes to economic and social transformation. Human resources practitioners should be exemplary HR administrators, act as strategic partners and change agents, while protecting the interests of employees (Ulrich, 1996). HR practitioners often work under challenging circumstances (Abdalmajeed Alshibli & Alzu'bi, 2019; Dlamini et al., 2021). In the face of these challenges, the work engagement of HR practitioners is essential for them to make meaningful contributions to the organisation in pursuit of vision and strategy, interact positively with various stakeholders and act as role models to both leaders and employees. While much research had been conducted on work engagement or the role of bundles of HR practices on engagement, the work engagement of HR practitioners themselves has been neglected in research. Neglecting the engagement of HR practitioners in the organisation will have dire results as HR has a cross-functional influence in the organisation. In addition, Schultz (2021), concluded that HR practitioners need self-leadership to navigate and design the future of HRM, and that engagement influences their ability to have an impact in this respect. As such, the results of the study have relevance for industry, and specifically HR leaders and senior managers that are concerned with the optimisation of HR departments and the future of the HR function in the organisation. From an academic perspective, the results contribute to knowledge of the drivers of engagement in organisations, and specifically from the perspective of the HR practitioner.

Results from this study are of therefore of value to the HR profession and the field of knowledge in Human Resource Management (HRM), as well as managers and leaders responsible for and involved with HR practitioners and to HR practitioners themselves.

3. Research Aim

The aim of the study was to describe the role of HR practitioners in South African organisations, identify factors influencing work engagement and specifically factors influencing the work engagement of HRM practitioners. To achieve this aim, HR practitioners were surveyed to determine their levels of engagement, and the extent to which communication, meaningful work, leadership support, rewards and recognition influenced their work engagement.

4. Literature Review

4.1. The role of HR Practitioners in Contemporary South African Organisations

Human Resources are both a means and an end to achieving organisational strategic goals (Taylor et al., 2012). In this respect, the HR department in an organisation needs to ensure the supply and maintenance of talent in the organisation and at the same time ensure that the organisation operates as a humane community in which employees thrive while optimally contributing to organisational strategy (Melé, 2013).

The South African Board for People Practices (2022) encapsulates five capabilities of HR: strategy, talent management, HR governance, risk and compliance, analytics and measurement, and HR service delivery. HR practitioners are expected to be leaders, problem solvers and communicators with excellent HR and business knowledge and display high levels of integrity and professionalism. They are not only responsible for the HR function across the HR value chain, but also for enabling leaders and line managers in managing employees successfully in a changing and diverse environment. In this respect, HR practitioners fulfil a role as agents of change and transformation. In addition to these roles, HR practitioners ensure compliance to labour legislation, such as the Employment Equity Act (EEA) of 1998, the Affirmative Action (AA) Act of 1998, the Skills Development Act (SDA) of 1998 and the Skills Development Levy Act (SDLA) of 1999, as well as the Labour Relations Act of 1995 (Nel et al., 2021).

The responsibilities of HR practitioners are broad and if they are not engaged in terms of their roles and functions, they will not be able to deliver the mandate that they are entrusted with by the government, organisation, management and employees. As such, the focus of this study is on work engagement and specifically the work engagement of HR practitioners.

4.2. Work Engagement

Kahn (1990, p. 694) defines work engagement as the harnessing of organisational members' selves to their work roles and state that engaged employees are those who apply themselves physically, cognitively and emotionally while performing in a role. Work engagement is characterised by vigour, dedication and absorption (Schaufeli et al., 2002). An engaged workforce is essential for organisations to attain competitive advantage in a dynamic world (Shrotryia & Dhanda, 2020; Vermeulen & Scheepers, 2020). Employees who are engaged expend extra effort in their work. They experience mental and emotional connection with their work, teams and the organisation (Bakker & Albrecht, 2018). However, disengaged employees exhibit less commitment, exhaustion, distrust and low performance (Lin, 2010). Employees differ in terms of various levels of work engagement. In this respect, Kwon et al. (2019) categorised four employee engagement profiles: the disengaged, barely engaged, moderately engaged and highly engaged employee. The highly engaged employee puts in extra effort, influences others positively, remains with the organisation and advocates for the organisation. Such a person is open to learning and performance improvement, which are essential aspects of continuous improvement and adjustment to change. Rothbard and Patil (2011), in their framework of work engagement, highlighted in-role and extra-role performance, proactivity, adaptivity, creativity and client satisfaction, as well as organisational commitment as the outcomes of work engagement. It can therefore be expected that HR practitioners who are engaged will find purpose and meaning in what they do, feel enthusiastic and immerse themselves in their roles. However, as postulated by the Job Demands-Resources (JD-R) model, for work engagement to take effect, the right organisational and job conditions need to be provided, and these can come from the organisation, the task itself, interpersonal relations and the organisation of work (Saks, 2022). In this study, four work engagement factors were investigated in relation to the engagement of HR

practitioners within the organisation, namely Communication, Leadership Support, Meaningful work, and Rewards and Recognition. These are discussed in the subsequent section.

4.3 Work Engagement Factors

Communication is no longer an after-thought, as it is understood to be essential in achieving superior outcomes (Vora & Patra, 2017). Through communication, organisational vision and strategy are clarified, and this provides rationale for job and role expectations. Communication is a vital factor in the engagement of employees as it is entwined with leadership and relationship building (DeKay, 2012; Kelly & MacDonald, 2019). Communication influences knowledge, attitudes and behaviour, and as such, needs to be intentional, inclusive, clear and not fear-inducing. When more time and resources are spent on internal communication tools and channels, employees engage more readily with each other and with senior managers (Vora & Patra, 2017). Effective and efficient communication leads to involvement, motivation, innovation, higher productivity and work engagement (Vora & Patra, 2017). In the context of this study, Communication as a factor is operationalised as HR practitioners being informed of the organisational vision and strategy, understanding how HR vision is aligned with organisational vision, having clarity about their role in HR, receiving information that enables effectiveness and efficiency and being able to voice opinions about how to improve HR work in the organisation.

Leadership and leadership support emerge as important factors in work engagement (Sahban, 2019; Vermeulen & Scheepers, 2020), career development and employee wellbeing (Tafvelin et al., 2019; Allan, 2020). Leaders need to be value-based and authentic to be trusted by employees, while leaders also play an integral role in the development of employees through serving as coaches and mentors (De Oliveira et al., 2019). In a changing environment, transformational leaders elicit extraordinary results from employees and teams (Iqbal et al., 2015). Saks (2022) highlights that caring leadership and management results in employees caring for the organisation, which subsequently enhances employee work engagement. This is perceived to be in line with the social exchange theory which postulates that positive behaviours are reciprocated in kind. For the purpose of this study, Leadership as a factor is operationalised as the leader playing an integral part in the career development of the HR practitioner, seeking the practitioner's input, having regular performance conversations with the practitioner, helping the practitioner solve problems, and the leader being seen as credible with a meaningful impact on the organisation's success.

Tan et al. (2019) identified meaningful work as a key driver of work engagement, while Matsuo, Arai and Matsuo (2019) linked meaningful work to job satisfaction, life satisfaction and work engagement. Employees who experience meaning, transcend their personal needs and pursue external issues they consider worthwhile in their pursuit towards a greater purpose in life (Tan et al., 2019). Meaning in work emerges when employees have a clear understanding of their expectations, abilities and objectives, both in terms of the organisation and society (Nair, 2020) which drives them to connect with their own self, others and humankind. Job characteristics, as explained by the job demands-resources (JD-R) theory is relevant to the concept of meaning (Tan et al., 2019), however without the necessary resources, employees could experience exhaustion and burnout. Allan (2020) posits that meaningful work is a buffer against negative factors that cause stress and anxiety and that it is a crucial element in quality work performance. For the purpose of this study, Meaningful Work as a factor is operationalised as the HR job having personal meaning to the HR practitioner, the practitioner being able to add real value to the organisation, while having a sense of contributing to transformation in South Africa, experiencing growth on a personal level in the job and having a sense of making a difference.

Many authors, Das (2013), Mehta et al. (2017), Majumdar (2019) and Saunderson (2019), as well as Sidhu and Nizam (2020) emphasise rewards and recognition as factors in employee satisfaction, engagement and retention. Rewards and recognition constitute private or public acknowledgement of achievement and can be monetary or non-monetary. Monetary rewards give material wealth and social status (Mehta et al., 2017), but do not affect satisfaction or performance if not aligned with the needs of the individual. It could therefore be posited that a high need for meaningful work (purpose

that transcends personal needs) may reduce a concern for rewards and recognition. Increasing an employee's responsibility and sharing their innovative ideas are forms of recognition. However, Sidhu and Nizam (2020) opine that non-monetary rewards are often overlooked and should therefore also be used as a factor in employee engagement. For the purpose of this study, Rewards and Recognition is operationalised as the HR practitioner feeling valued for the contribution made to the HR department, as well as to the broader organisation, and being recognised for performance-related achievements by the direct manager, line managers, colleagues and employees for the contribution made to HR, support given to managers and the delivery of HR services within the organisation.

5. Research Methodology

For this study, a positivistic paradigm was adopted. A positivistic paradigm assumes that research can and should be done objectively, and that the reality about a phenomenon is revealed through probing the perceptions or observations of a larger group of subjects (Park et al., 2020). The positivistic paradigm contrasts with the interpretivist paradigm which seeks to uncover rich meaning from the unique experiences of purposefully selected individuals through intensive interrogation methods such as interviews or focus groups and narrative analysis (Davies & Fisher, 2018). The positivistic paradigm is aligned with quantitative approaches while interpretivism is aligned with qualitative approaches. For this study, a quantitative approach was adopted, in the form of an on-line survey with a questionnaire as data collecting tool to measure the work engagement levels of HR practitioners in the Nelson Mandela Bay area and the extent to which the identified factors influenced their work engagement levels. A quantitative approach determines cause and effect connections amongst variables in a structured manner and provides an indication of the predictive value of variables (Grover, 2015).

The population for the study comprised HR practitioners in the Nelson Mandela Bay (NMB) region. Due to limited time available for conducting the study, convenience and snowball sampling were adopted as the most practical sampling techniques for the study (Meadows, 2003). To ensure trustworthiness in terms of diverse representation, the NMB HR Forum was approached to distribute the questionnaire to HR practitioners. Members of the forum were informed via email of the purpose of the survey and had to indicate their willingness to participate in the study, thereafter another email was forwarded to them with a link to the questionnaire. The questionnaire was accompanied by an introductory letter, providing information on the focus and purpose of the study, aspects of anonymity, voluntary participation and the approximate time required for completion. The questionnaire was administered on QuestionPro, a web-based survey solution. Advantages of this approach involved providing anonymity, privacy and convenience to the participants, but also it is a less costly and time-effective method to use. The questionnaire consisted of three sections. The first section elicited biographical data via closed-ended answer options. The second section measured work engagement factors on a Likert-type scale, ranging from strongly disagree (5) to strongly agree (1). This section was self-developed but was informed by the literature review and reliability was established. The third section, also a Likert-scale, consisted of the Utrecht Work Engagement Scale (UWES), which was developed by Shaufeli and Bakker (2003) and is known for obtaining Cronbach's alphas of between .80 and .90 (Vallières et al., 2017). In this study, the Cronbach alpha coefficients obtained for the scales varied between 0.85 and 0.92 which confirmed reliability (Olvera Astivia et al., 2020). Before distribution, ethics clearance was obtained. The study was conducted while the country was on Alert Level 3 during Covid-19 and 42 useable, completed questionnaires were received. The responses were representative of HR practitioners who were mostly responsible for salary, wages and benefits (14.3%), training and development (31.1%), HR generalist work (17.9%), and employee relations (17.9%), with 7.1% focusing on HR administration or other related aspects (10.7%). The profile of the respondents was 70% female, 32% Black, 32% White, 19% Indian and 14% Coloured, while respondents were mostly aged between the ages of 30 and 59 (76%), and with either Grade 12 (15%), diploma (18%), Advanced Diploma/degree/B.Tech (33%), postgraduate diploma/honours degree (27%) or masters/doctoral degree (6%) as the highest qualification. A large proportion (40%) of the sample had a length of service of ten years or more, and a further 33% had a length of service of between four and 10 years, an indication of most respondents being relatively established in their organisations.

IBM SPSS Statistics 27 software was employed for the statistical analyses. Other than descriptive statistics (mean scores and standard deviation), results for confirmatory factor analysis (CFA), reliability analysis, correlation analysis and regression analysis are presented.

6. Results and Findings

Table 1 presents descriptive statistics for statements relating to the engagement levels of the respondents. The aggregate mean score for the Engagement Scale is 3.78, leaning towards agree responses and the aggregate standard deviation is 0.88, showing a narrow spread of responses (0.55 – 1.07) and therefore relative consistency among the responses.

Table 1: Work Engagement levels of HR practitioners

Work Engagement	Mean	SD
At work, I feel bursting with energy	3.49	0.96
I feel the work that I do is full of purpose and meaning	4.06	0.55
While I am at work, time tends to fly	4.14	0.65
I feel strong and vigorous doing my job	3.89	0.77
I am enthusiastic doing my job	3.94	1.07
I forget everything around me while I am working	3.22	0.89
My job inspires me	3.88	1.04
I feel like going to work when I get up in the morning	3.69	0.99
I feel happy when I work intensely	3.84	0.81
I feel proud of the work that I do	4.13	0.79
I am fully immersed in my work	3.89	0.82
I am content working for long periods of time	3.79	0.96
My job is challenging	3.94	0.89
When I am working, I get carried away	3.44	0.94
I am very mentally resilient at performing in my job	3.78	1.04
It is difficult to detach myself from my job	3.14	1.00
I always persevere, even when things do not go well	4.04	0.76
Aggregate mean score and standard deviation	3.78	0.88

CFA (presented in Table 2) was used to determine whether the factor structure employed in this study fitted the data and could therefore be considered valid (Wegner, 2012). The factors measured were Communication, Meaningful Work, Leadership Support, Rewards and Recognition, and Workplace Engagement. All of the parameter estimates were found to be statistically significant with a p-value of above 0.5 and as such the model fit could be assessed. This was done through a combination of goodness-of-fit indices. In cases where the modification indices showed that two items were highly related ($MI > 20$), pathways between them were opened to enable them to correlate. All of the factors retained their statements, except for the factor Work Engagement, for which two insignificant items had to be removed. Interestingly, the one statement that had to be removed referred to ‘being carried away when working’ and the other to ‘finding it difficult to detach from work’. Both of these statements reflect absorption, even though the concept of Work Engagement was holistically considered in this study. Table 2 presents the results for the CFA and the final factor structure.

Table 2: CFA and Final Factor Structure

Factor	Parameters sig	CMIN/df	CFI	SRMR	RMSEA
Communication	all significant (p<0.1)	1.634	0.911	0.0802	0.133
Meaningful Work	all significant (p<0.05)	1.096	0.988	0.0817	0.052
Leadership Support	all significant (p<0.05)	1.202	0.972	0.0746	0.075
Reward and Recognition	all significant (p<0.05)	1.356	0.956	0.0719	0.099
Workplace Engagement	all significant (p<0.05)	1.215	0.937	0.0883	0.077
Cut-off for Good model fit: CMIN/df <3.00 CFI >0.95 SRMR <0.05 RMSEA <0.08					

Cronbach alpha coefficients were calculated for the factors confirmed via the CFA. As indicated in Table 3, the alpha coefficients were 0.85 or higher, indicating very good internal consistency/reliability (Olvera Astivia et al., 2020).

Table 3: Cronbach Alpha Coefficients

Factor	N of items	Cronbach alpha
Communication	7	0.85
Meaningful Work	7	0.89
Leadership Support	9	0.92
Reward and Recognition	7	0.90
Engagement	15	0.91

Table 4 presents descriptive statistics for the factors measured in this study. The standard deviations are all low, ranging between 0.53 and 0.73, indicating consistency in the responses to these factors and provide a solid base for reporting. The highest mean score is 4.1 for Meaningful Work, and the lowest is 3.70 for Rewards and Recognition, with all leaning towards agree responses.

Table 4: Descriptive Statistics for the Factors extracted via CFA

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Communication	37	2.14	5	3.99	0.56
Meaningful Work	37	2.57	5	4.19	0.53
Leadership Support	37	2	5	3.85	0.66
Reward and Recognition	37	2	4.86	3.70	0.73
Work Engagement	37	1.93	4.87	3.85	0.56

Correlation analysis (Table 5) provides an indication of the extent (significance) to which the factors are related, with a positive correlation (direction) indicating that if a factor increases, the related factor will also increase. A correlation greater than 0.5 indicates a strong relationship, while a correlation greater than 0.3, but smaller than 0.5 indicates a moderate relationship, and a correlation lower than 0.3 indicates a weak relationship. All of the factors measured in this study are positively correlated, with the relationship between Meaningful Work and Work Engagement ($r=0.752$), Rewards and Recognition and Work Engagement ($r=0.710$), and Leadership Support and Engagement (0.517) showing the strongest relationships. However, it should be noted that a correlation does not depict influence. To establish influence, regression analysis could be utilised, as was done in this study.

Table 5: Correlation Analysis

Correlations between factors measured in the study					
	Communication	Meaningful Work	Leadership Support	Rewards and Recognition	Work Engagement
Communication	1	0.502**	0.740**	0.659**	0.474**
Meaningful Work		1	0.410*	0.592**	0.752**
Leadership Support			1	0.673**	0.518**
Rewards and Recognition				1	0.710**
Work Engagement					1
** Correlation is significant at the 0.01 level (2-tailed)					
* Correlation is significant at the 0.05 level (2-tailed)					

To establish if the engagement factors measured in this study had an influence on Work Engagement, a linear regression analysis was conducted (Table 6). Regression analysis is used to measure the relationship between independent variables and a dependent variable and gives an indication of how the dependent variable changes in relation to change in the independent variables (Wegner, 2012). The regression analysis was done in three steps. In the first step, it was determined that the independent or predictor factors (Communication, Meaningful Work, Leadership Support and Reward and Recognition) explained 68.7% of the variation in the dependent variable, Work Engagement.

Table 6: Regression Analysis Assess Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.829a	0.687	0.648	0.33309	2.108
a Predictors: (Constant), Reward and Recognition, Meaningful Work, Leadership Support, Communication					
b Dependent Variable: Work Engagement					

In the second step of the regression analysis, significance was established. The overall model was found to be significant ($F=17.58$, $df=4$, $p=0.000$), as illustrated in Table 7.

Table 7: Regression Analysis

ANOVA: Engagement and factors of engagement						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	7.802	4	1.95	17.58	.000b
	Residual	3.55	32	0.111		
	Total	11.352	36			
a Dependent Variable: Work Engagement						
b Predictors: (Constant), Rewards and Recognition, Meaningful Work, Leadership Support, Communication						

In the third step of the regression analysis, the significance of predictor factors was determined, as indicated in Table 8. Meaningful Work ($p=0$) and Reward and Recognition ($p=0.014$) emerged as significant predictors of Work Engagement for the HR practitioners surveyed in this study. Meaningful Work is responsible for 53.8% and Reward and Recognition for 40.1% variation in Work Engagement. An analysis of the residuals delivered a mean residual of 0 and a histogram with a normal distribution, giving confidence in the results obtained.

Table 8: Significance of Predictor Factors

Coefficients ^a								
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		
	B	Std. Error	Beta			Tolerance	VIF	
1	(Constant)	0.497	0.505		0.985	0.332		
	Communication	-0.18	0.16	-0.178	-1.124	0.269	0.388	2.58
	Meaningful Work	0.576	0.134	0.538	4.293	0	0.622	1.609
	Leadership Support	0.136	0.135	0.159	1.003	0.323	0.388	2.577
	Rewards and Recognition	0.307	0.118	0.401	2.597	0.014	0.409	2.443
a	Dependent Variable:							
	Work Engagement							

7. Discussion

The role and strategic function of HRM in co-creating, enabling and supporting organisational vision, values, strategy, culture and ultimately team and individual effectiveness, has been firmly established (Ulrich, 1996; Oh et al., 2017; Fareed et al., 2022). In addition, in South Africa, where change and transformation emanating from global, national and local forces are paramount, the role and function of HRM cannot be separated from the national mandate for creating a fair and equal society, therefore ensuring social justice. These challenges require HR practitioners who are competent, committed and effective (Oh et al., 2017; Fareed et al., 2022) with extensive knowledge of HR best practice, a deep understanding of the role of HRM, passion for the profession as well as resilience (Kwon et al., 2019; Warnich et al., 2021), therefore HR practitioners who are engaged. Using the definition of work engagement postulated by Khan (1990), this would imply that HR professionals harness their self to their role in HR, and apply themselves physically, cognitively and emotionally while performing in this role.

This study therefore probed the work engagement levels of HR practitioners and determined the extent to which communication, meaningful work, leadership support and rewards and recognition influenced the engagement of these practitioners. Knowing which factors drive the engagement of HR practitioners will assist HR directors in creating an environment in which HR practitioners can optimally function, in accordance with their role. The literature review emphasised that communication is vital for leadership and relationship building (Kelly & MacDonald, 2019) as well as sustainable competitive advantage and feedback, but that communication needs to be purposeful, consistent and transparent (Fareed et al., 2022). Leadership support implies leaders are concerned with the career development of HR practitioners as well as their wellbeing (Sahban, 2019; Tafvelin et al., 2019; Allan, 2020; Vermeulen & Scheepers, 2020). The experience of meaningful work is considered to be a key driver of engagement and will ensure that HR practitioners feel connected to a higher purpose in their work role (Tan et al., 2019). The last factor, rewards and recognition has been associated with persistence, satisfaction and engagement, but needs to meet individual preference and must be linked to performance and therefore have an element of authenticity (Mehta et al., 2017).

The results from the study showed that the HR practitioners surveyed self-reported high levels of engagement, with the descriptive results revealing an aggregate mean score of 3.78 and an aggregate standard deviation of 0.88. Considering that the study was conducted in 2021, during the disruptive Covid-19 period, and HR having had to take a lead in managing the resulting employee-related issues in organisations, the results can be considered as satisfactory and reflect resilience. HR practitioners reported purpose and meaning, being absorbed (time flies), feeling proud of the work that they were doing, with higher levels of perseverance, among others.

The factor structure for the study was confirmed by the CFA, giving validity to the results (Wegner, 2012). Correlation analyses revealed that all of the factors correlated positively, with the strongest relationship between Meaningful Work and Work Engagement, and Rewards and Recognition and Work Engagement. The mean scores for the factors ranged between 3.70 and 4.19, sketching a positive picture of the environment in which the HR practitioners operated. It is therefore not surprising that the respondents reported relatively high levels of work engagement, with the aggregate mean score of 3.85 for the factor of Employee Engagement reflecting agreement. The results from the regression analysis showed that, of the factors measured, Meaningful Work and Rewards and Recognition were significant predictors of the engagement levels of HR practitioners. These are therefore factors that should get attention within organisations to maintain higher engagement levels of HR practitioners and to gain performance, constructive relationship while building, innovation, loyalty and involvement.

Communication and Leadership Support, however, did not materialise as predictors of Work Engagement. Since the correlation analyses revealed positive relationships among all of the factors, it can be considered a reasonable observation that Leadership Support and Communication are also important in establishing Meaningful Work and providing Rewards and Recognition. Leaders and managers are able, by virtue of their position, to clarify vision, explain the rationale for decisions and empower employees to provide meaning, and then reward and recognise employees for their performance. This power to share knowledge and information and reward HR practitioners, should not be limited to direct supervisors, but should be a collective management strategy in the organisation. The reason for this remark is that HR practitioners deliver services across all functions within the organisation and if there is a culture of recognition, HR service delivery will continuously improve. The influence of leaders on the work engagement of HR practitioners, through communication, creating meaning, and rewarding and recognising achievement, therefore cannot be minimised.

8. Managerial Implications

The study has implications for management, not only for the direct managers of HR practitioners but also for line managers and senior managers across the organisations. Firstly, organisational leaders need to reflect on the strategic role HR practitioners fulfil in the organisation and understand why the engagement of this cohort of employees is essential. In this respect, the SABPP 2022 presents both the South African HRM systems standards and HR competency model to demonstrate the strategic role of HR across the HR value chain in organisations and the expectations that are placed on HR practitioners to fulfil strategic, change agent, administrative and employee champion roles (Ulrich, 1996).

In this study, two factors were extracted that specifically predicted the work engagement of HR practitioners. The first factor was Meaningful Work. To provide meaning, HR practitioners need to understand that they fulfil a crucial role within the organisation and that their influence also stretches outside of the organisation in terms of supporting transformation in South Africa. As such, senior management should expose all HR practitioners, irrespective of their rank in the organisation, to discourse on the organisational vision, mission, values and strategy. The conversations should be continued within their respective HR teams, and then be drilled down to an individual level, for each HR practitioner to understand how his/her role, knowledge and behaviour affect overall organisational success and contribute to creating a humane organisation that promotes justice and fairness for all employees, thus contributing to a greater good. In addition, HR practitioners should be enabled and

challenged to craft their own roles within the organisation, as this may lead to creating meaning in-line with their personal values and strengthen extra-role performance. HR departments should digitalise HR tasks that have become repetitive to prevent the under-stimulation and underutilisation of HR practitioners. They should enable HR practitioners to fulfil their change agent and strategist roles by structuring formal and informal engagement with line managers and as such activate a true business partner relationship.

The study revealed that the HR practitioners surveyed experienced high levels of work engagement. Since this study was conducted during an especially tiring Covid-19 lockdown period, it provided evidence of the work engagement and commitment of HR practitioners to goals that transcend self-interest. This observation is especially important in terms of the second main factor that emerged in this study as a predictor of the engagement of HR practitioners, namely Rewards and Recognition. HR managers, senior managers and line managers, across all functions within the organisation, play an important role in the continuous engagement of HR practitioners. HR practitioners should be recognised and praised for their contributions to the organisation. Praise is a value in African culture, and this custom should be established within organisations. This can be done in gratitude rounds during or at the conclusion of meetings. As such, a positive lens on problems and challenges should be adopted, to reinforce high levels of positive energy and positive experiences. There is also place for tangible rewards, in the form of tokens of appreciation that are intermittently given for exceptional and consistent good service delivery.

While leadership support and communication did not emerge as main drivers of work engagement, the correlation analysis in this study clearly showed that these two factors cannot be discounted, and managers should ponder how their support and communication relate to perceptions that HR practitioners have of the meaning of their work and whether their work and contributions are appreciated. Senior leaders, HR practitioners and line managers should communicate purposefully, considering what the most pivotal messages are and how these messages should be delivered. Leaders, through positive communication, providing feedback and building constructive relations, contribute to meaning experienced by employees, and in the context of this study, the meaning experienced by HR practitioners. For effective communication, multiple media, ranging from face-to-face meetings, electronic chat platforms, email and personal contact can be used. On a more personal level, inclusivity and mindfulness should be practiced, breaking down personal barriers which could be caused by authority and status differences, and diverse backgrounds. Opportunities for bottom up rather than top-down feedback should be created. When this is done within a group or team context, everyone is made aware of the broader context, and collaborate problem-solving and mutual learning are likely to occur more naturally.

9. Conclusion

HR practices are considered important in enhancing the work engagement of all employees and HR practitioners are seen as custodians of employee work engagement in organisations. However, it has become evident that in terms of research, very little attention had been focused on the work engagement of HR professionals themselves. This study therefore only represents a beginning in the exploration of the engagement of HR practitioners. The results of the study are encouraging, indicating that the HR practitioners surveyed do perceive their roles as meaningful and that they are engaged. As such, these HR practitioners serve as exemplary role models to leaders and employees within their organisations in terms of work engagement. Recognising the strategic role that HR practitioners play in their organisations and rewarding them for their contributions to goal achievement are vital for their continuous work engagement, especially during turbulent times.

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The Antecedents and Outcomes of Talent Management in a Botswana Local Government Institution

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Keywords

Ethical organisational talent culture, Organisational commitment, Positive work outcomes, Productive energy, Talent management, Talent retention

Abstract

Talented employees are essential for delivering valuable services to the public. Botswana local government institutions should invest in a workplace culture that embraces talent management practices to achieve its Vision 2030 goals. The primary purpose of this research was to determine the antecedents and outcomes of talent management in a Botswana local government institution. A quantitative approach was followed, collecting data from a stratified random sample of employees at a Botswana local government institution (N=405). Various measurements were used to assess ethical organisational talent culture, talent management, job satisfaction, adult state hope, meaning in life, voluntary turnover, productive energy and organisational commitment. The results showed a poor ethical organisational talent culture and inadequate talent management practices. Ethical organisational culture predicted talent management. Talent management was related to positive individual outcomes (i.e. job satisfaction, adult state hope, meaning in life), productive energy and organisational commitment. Talent management mediated the relationship between organisational talent culture and voluntary turnover intentions and partially mediated the relationship between ethical organisational talent culture and productive energy. The results of the research highlight the importance of ethical organisational talent management cultures to promote positive individual and organisational outcomes. Recommendations for practice are made.

1. Introduction

The value of local government institutions to public welfare cannot be overstated (Masuku & Jili, 2019; Musekiwa & Mandiyanike, 2017). Worku (2020) refers to an extensive list of responsibilities that public sector officials must fulfil to meet the service demands of a diverse society, such as the “city, public and private companies, diplomatic missions, visitors, and entrepreneurs conducting day-to-day business activities”. Local government institutions require skilled and competent employees to meet the service needs (Mabope, 2018). A human capital shortage hampers the Botswana public sector from achieving its performance goals, resulting in public dissatisfaction (Tshukudu, 2020). Talent management can be used as a strategic tool by emerging markets, such as Botswana, to achieve service performance goals and competitive sustainability (Ambrosius, 2016; Ahammad et al., 2017).

This study focuses on applying talent management in a Botswana local government institution. More specifically, this paper explores the antecedents and outcomes of talent management practices for the selected Botswana local government institution. Botswana celebrated its 50th anniversary as an independent country in 2016 (Mogalakwe & Nyamnjoh, 2017). Despite being dubbed Africa's "new democratic hope," Botswana society is still plagued by high unemployment, poverty, anti-apartheid

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spillovers from South Africa, revenue leakages, and poverty (see Mogalakwe & Nyamnjoh, 2017). According to the Global Competitiveness Report, Botswana is still ranked low in human capital development, despite some signs of economic growth (Scwab, 2019). In addition, Barkhuizen et al. (2014) found that Botswana local government institutions reported significantly poorer talent management applications than their South African counterparts.

According to Rudhumbu and Maphosa (2015), Botswana's poor talent management practice results from inadequate management knowledge and incompetence. Botswana's local government institutions will rely on talent to achieve the country's Vision 2030 sustainable development goals (Musekiwa & Mandiyanike, 2019). Vision 2030 requires implementing local economic strategies to empower communities, expand financial income-generating avenues, eradicate poverty, and reduce income inequalities. Talent is the most sustainable source of competitive advantage to achieve Vision 2030 goals (see Elegebe, 2019; Musekiwa & Mandiyanike, 2019).

As a result, research on the antecedents and outcomes of talent management for a Botswana local government institution is required. We hope that by providing a more holistic perspective on talent management within an emerging market context, we will fill a gap in talent management research (Gallardo-Gallardo et al., 2020; Theys & Schultz, 2020). Next, we unpack the variables considered for this study.

First, we will look at the antecedents of talent management in local government institutions. Much has been written about creating work environments that allow talent to flourish and grow (Redelinghuys et al., 2019). Organisations, it is argued, must foster a talent culture that promotes formal career development opportunities and career-oriented strategic plans (Mohan et al., 2015). From this viewpoint, we investigate how an ethical talent culture can improve talent management practices in local government institutions. Ethical talent cultures are critical to research as local government institutions in Sub-Saharan Africa continue to be scrutinised and criticised for mismanagement and corruption (Mudeme & Holtzhausen, 2018; Pillay, 2014). Moreover, poor ethical behaviour prevents local government institutions from reaching their performance objectives (Motshwane, 2018). Järvi and Khoreva (2020) encourage research into how cultural contexts can facilitate talent implementation processes, influencing the behaviours and attitudes of talent required for achievement and organisational performance.

Second, we concentrate on negative and positive individual talent management outcomes in the Botswana local government context. We investigate the possibility of voluntary turnover among local government employees as a negative outcome of talent management. According to Son et al. (2020, p. 2191), increased voluntary turnover rates result from inadequate talent management practices. Recent statistics show that voluntary turnover intentions among local government employees in Southern Africa are escalating (Mzezewa, 2019). Retaining a talent pool is a significant concern, as losing skilled employees is costly and undermines institutional performance (León & Garca-Saavedra, 2020). As a result, we concentrate on how talent management can contribute to positive work (i.e. job satisfaction) and personal outcomes (i.e. adult state hope and meaning in life). Job satisfaction is an essential attitudinal variable to investigate because it is directly related to the service performance of local government employees (Park, 2020). Local government institutions require competent and satisfied employees to provide skilled and effective services to the broader society (Worku, 2020). Unfortunately, local government employees are also subjected to physically, psychologically, and emotionally demanding work environments (Dubale et al., 2019; Bester & Hofisi, 2020). We investigate adult state hope as a resilience trait that individuals can use to overcome workplace adversity (Snyder, 2000). Adult state hope is also a valuable concept to investigate in talent management as an individual strength that fosters goal-directed behaviour in the workplace (see Bolander et al., 2017; Snyder et al., 1996). Meaningful work experiences are required for goal-directed behaviour (Van Wingerden & Van der Stoep, 2018). Prospective employers who provide meaningful work experiences can attract and retain talent (Claus, 2019). We investigate how a meaningful talent environment can influence the meaning in the life of employees in a local government institution, given the significant amount of time employees spend on their daily tasks.

Third, we consider how talent management can help to improve collective employee outcomes such as productive energy. Productive energy is concerned with how employees can achieve group and organisational objectives through collective behaviours and actions (Cole et al., 2012). The talent management field has been criticised for focusing on individual characteristics while ignoring the collective talent potential of groups and teams (Thunissen et al., 2013). Teamwork is vital for government institutions because it improves individual, group, and organisational performance (Mafini & Poee, 2013).

Finally, we look at organisational commitment as an organisational level outcome of talent management. Commitment is central to Ulrich and Smallwood's (2012) definition of talent. According to these authors, talent is the “competence [knowledge, skills, and values required for today's and tomorrow's jobs; right skills, right place, right job, right time] commitment [willingness to do the job] contribution [finding meaning and purpose in their job]” (see Ulrich & Smallwood, 2012). In public organisations, organisational commitment is essential for service efficiency and effectiveness to society (Lizote et al., 2017). Organisational commitment thus reflects the employee attitudes that translate into public sector performance (Berberoglu, 2018).

The following is the structure of this research article. We begin by defining the terms talent and talent management in the study context. Following that, we present the theoretical foundations and hypotheses for the variables identified for the study. Following that, we present the study's research design and findings. Finally, we conclude this study by discussing the findings and recommendations for practice and future research.

2. Theory and hypotheses development

2.1 Ethical organisational talent culture and talent management

Organisational culture is a concept derived from human resource management theory that describes how things are done in a company (Lundy & Cowling, 1996). Organisational culture reflects employees' underlying values, norms, principles, rules, and philosophy as demonstrated by what is considered acceptable workplace behaviour (Martins & Terblanche, 2003; Schein, 1990). Swailes (2020) recently elevated talent management practice by emphasising talent practices' ethical and socially responsible implementation. According to Swailes (2020), ethical talent management practices should include, among other things, fair talent identification practices, visible talent management programs, and processes for monitoring the progress and well-being of employees.

Local government institutions must foster a workplace culture that promotes ethical human capital practices while allowing public sector reform to improve services even further (Matsiliza, 2013; Yahiaoui et al., 2015). The type of organisational culture (e.g., bureaucratic, innovative, or supportive) influences workplace talent development initiatives (Musriha, 2013; Rasool et al., 2012). The more supportive the organisational culture, the more likely it is to advance development in the local government (Cloete, 2016). Talent review processes can help identify talent and guide them for advancement to higher management levels (Campbell & Hirsh, 2013). As a result, an organisational talent culture facilitates staffing levels (Shabankareh et al., 2015). Staffing levels remain a significant issue in government-owned and controlled departments (Salajagheh et al., 2014). To move forward with workforce planning initiatives, Goodman et al. (2013) recommend that local government institutions recognise the importance of training and development, information management, diversity management, and unions. A planning and development culture improves organisational competitiveness (Burma, 2014).

As a result, local government institutions must develop a high-performance culture that hires, rewards, and retains talent (Swinford, 2017). According to Zhou (2017), competitive rewards serve as key incentives for high-quality talent. Performance management systems should serve as the foundation of a talent management culture in which talent is recognised for adding value to the organisation (Kotbra et al., 2011). Nonetheless, performance evaluation processes appear not transparent and are not communicated to all stakeholders (Ndevu & Muller, 2018). Failure to train employees on performance

management and insufficient performance management knowledge and experience results in a misalignment of strategic and operational plans for local governments (Khalid et al., 2015).

Kaptein's (2008) Corporate Ethical Virtues Model is used in part in this study. The model consists of eight dimensions (i.e. clarity, congruency of supervisors, congruency of management, feasibility, transparency, discussability and sanctionability) representing the business ethics necessary to promote ethical behaviour while preventing unethical behaviour. Based on the context of this research, we were interested in leadership behaviour (i.e. ethical role modelling by leaders), feasibility (i.e. ethical behaviour based on available resources), supportability, share commitment to ethical behaviours through fairness) and discussability (i.e. opportunity to raise and discuss issues' (Cabana & Kaptein, 2019, p.3).

Ethical leadership and moral values are critical to Botswana's local government institutions (Cheteni & Shindika, 2017). According to Mbandlwa et al. (2020), ethical governance begins with leadership modelling ethical workplace behaviours. Leadership is also responsible for laying the groundwork for organisational resourceful and ethical performance (Grigoropoulos, 2019). Leadership commitment toward talent is essential in facilitating talent management in local government institutions, as documented (Magolego, 2013; Mpofu, 2013). According to Xuanhui and Wouter (2014), leadership is transmitted across the organisation through performance measurement, administrative ethics, and organisational learning, which significantly impacts organisational performance over time. Leadership can improve institutional performance by developing local government talent to help them keep up with changing conditions (Qhibi, 2017). Employee performance is enhanced by a culture that values human capital development (Mohamed & Abukar, 2013). Leaders who invest in employee training are 75% more likely to retain their talent through succession planning (Damer, 2020). According to Kontoghiorghes (2016), high-performance organisational cultures predict talent attraction and retention. In the latter study, high-performance cultures were defined by quality, technology-driven support for creativity, open communication, effective knowledge management, respect, and integrity. However, dominant government policies and structural arrangements stymie HR retention efforts (Kakumba & Fennell, 2014). Local government leaders must implement practical business strategies relating to employee development, engagement and empowerment, and a positive work experience to improve retention (Izard-Carroll, 2016).

According to Nzewi et al. (2016), operational dynamics are required in South African local municipalities to drive strategic intent and organisational learning. Operational dynamics is frequently a reflection of the administrative culture of local government, which is underpinned by the values that shape individuals' behaviour, motivation, and performance (Dwivedi, 2005; Kandula, 2006). Wan (2017) discovered that the Competing Values Framework's collaborative and competing values could be used to promote work community and customer-centricity. According to Andersson (2019), local government employees' ethics and integrity are the pinnacles of instilling public trust in service delivery. Organisational dynamics should foster a high-involvement work culture in which employees can participate in decision-making that affects government institutions' performance and productivity (Irawanto, 2015; Qi & Wang, 2016). As a result, organisations with established values and norms outperform those without established cultures (Chepngeno et al., 2012).

H 1: Organisational talent culture will be positively related to talent management

2.2 Talent management and positive individual outcomes

Talent management and job satisfaction: Job satisfaction is defined as an individual's pleasurable emotional experience resulting from a positive evaluation of one's job performance or values (Spector, 1998). Employee satisfaction with management support for talent management and talent compensation is a consistent predictor of public sector employees' job and institutional satisfaction (Lesenyeho et al., 2018a; Theron et al., 2014). Paadi et al. (2019) found that talent attraction, development, and retention predicted public sector interns' life, work, and organisational satisfaction. On the other hand, Maleka et al. (2016) discovered that poor supervisory support and a lack of employee involvement contributed to municipal employee dissatisfaction. According to Khoza (2019),

the leading dissatisfaction factors for local government employees were poor working conditions, a lack of promotion opportunities, and insufficient job security. Worku (2020) emphasises the importance of clear job descriptions and opportunities for training and development for local government employees to improve job satisfaction and service performance. According to Barkhuizen and Gumede (2021), job satisfaction mediated the relationship between talent mindset, talent deployment, talent engagement, and voluntary turnover intentions in a public sector institution.

Talent management and adult state hope: Hope is recognised as an essential psychological resource for various reasons, including career development and job performance (Yotsidi et al., 2018). According to Ashkar (2019), psychological hope can reshape organisational structures and foster vibrant organisational cultures. Clearly, hope is essential for both the individual and the organisation. We use the adult state hope theory (see Snyder et al., 1996) for this study, which defines hope in two central tenets: success agency and pathways to meet goals. As a motivational component of hope, agency refers to individuals' perceived ability to initiate and pursue essential goals. Pathways include individuals' perceived ability to generate plans and strategies to achieve these goals. Hopeful thinking requires agency and pathways (Martin-Krumm et al., 2014). According to the adult state hope theory, individuals with high hope have the perceived capacity, confidence, and motivation to use multiple pathways to achieve their goals, regardless of impediments (Nel & Boshoff, 2014).

Adult state hope is helpful for studying talent management because both constructs advocate goal achievement and performance (Youssef & Luthans, 2007). Dries (2013, p. 280) refers to theoretical perspectives that regard "talent as motivation" and a combination of "input" and "output" factors. From an input standpoint, talent emphasises aspects such as "effort, motivation, ambition, and career orientation," whereas talent as an output includes "performance, achievements, and results" (see Dries, 2013). According to the Resource-Based Theory, talented employees, as a unique resource, contribute to an organisation's competitive advantage through their competencies (Orlando et al., 2021). As a result, talent management is the strategic pillar that drives talent goals to pursue organisational performance and competitiveness (Kontoghiorghes, 2016). From a motivational perspective on talent, we argue that talent management can significantly contribute to government employees' adult state hope. There is some evidence of a link between talent management indicators (i.e. ethical leadership, organisational climate, organisational justice, skill variety, task significance, job feedback, job identity, and job autonomy) and psychological hope (Grobler & Joubert, 2020; Kong et al., 2018). Brouze (2013) found evidence that psychological hope moderated the relationships between job demands (i.e., work overload) and adverse individual outcomes like burnout. Psychological hope also mediated the relationships between job resources (for example, career advancement opportunities and supervisory support) and positive states like work engagement.

Talent management and meaning in life: Meaning is a concept that can be applied to both an individual's personal and professional life (Geldenhuys et al., 2014). Meaningfulness can be both dispositional and psychological, with employees taking responsibility for the psychological stability they experience in their personal and professional lives (Nierenberg et al., 2017). Steger's (2012) meaning in life theory is used in this study. According to Martela and Steger (2016), the meaning in life theory encompasses three key areas: coherence (i.e., "a sense of comprehensibility and one's life making sense"), purpose (i.e., "a sense of core goals, aims, and direction in life"), and significance (i.e., "a sense of life's inherent value and having a life worth living"). Meaning in life entails a sense of self-transcendence in which individuals feel the need to grow by transforming themselves and their surroundings while progressing towards a goal (Fairlie, 2011). Talented employees are perceived to be purposeful, goal-directed, and value-adding individuals attracted and developed through various talent management initiatives to realise organisations' strategic ambitions (Thunissen, 2015; Wiblen & McDonnell, 2020). According to Thompson (2013), meaningful work can entice talented employees to join organisations. Similarly, talent will remain in organisations offering personal and professional development opportunities and meaningful work (Al Rina & Atan, 2020). According to Claus (2019, p. 207), progressive organisations should focus on creating a meaningful employee experience to "attract and nurture the talent they require." As a result, local government institutions are tasked with creating meaningful work environments through talent management practices that will contribute to

the meaning in life that employees derive from their workplace. Meaning in life can then be achieved, according to HRD theory, by establishing meaningful workplace cultures that embrace “a sense of purpose, community, belonging, and inclusivity” (Bailey et al., 2019, p. 84). This idea supports the global push to create more talent-inclusive workplaces (see Meyer, 2020), in which all employees can add value to the organisation.

H 2: Talent management is significantly positively related to positive work-related outcomes (i.e. job satisfaction, adult state hope, meaning in life)

H 2.1 Talent management is significantly positively related to job satisfaction

H 2.2 Talent management is significantly positively related to adult state hope

H 2.3 Talent management is significantly positively related to meaning in life

2.3 Talent management and negative individual outcomes: Voluntary turnover intentions

The term "voluntary turnover intentions" refers to an employee's decision to leave an organisation of their own (Theron et al., 2014). Carmeli and Weisberg (2006) define turnover as three cognitive withdrawal processes: thoughts of leaving the job, intentions to look for another job, and finally, the intention to quit. The lack of talent management practices that promote career advancement will likely result in voluntary talent turnover (Schaap & Olckers, 2020). Local government institutions require talent to meet society's service expectations and contribute significantly to public welfare (Masuku & Jili, 2019; Tshukudu, 2020). A lack of talent management infrastructure, i.e. job resources, poor administrative and technological infrastructure, insufficient training, and poor performance management practices, all contribute to public sector employees' intentions to leave (Austen & Zachy, 2015; Fahim, 2018). Employee social relationships and coordination are critical to the performance of service-based economies in which local government institutions operate (Rosales, 2015). The nature of local government service delivery is people-centred, requiring continuous interactions with service recipients (Lues, 2016). Because of citizens' diverse and rapidly changing needs, providing service is not always an easy task (Nxumalo, 2017). Management and colleague social support can play an important moderating role between talent management and voluntary turnover intentions (Du Plessis et al., 2015).

H 3: Talent management is negatively related to voluntary turnover intentions of Botswana local government employees

2.4 Talent management and group-level outcomes: Productive energy

Much has been written about the value of a motivated workforce in job and organisational performance (Owens et al., 2016; Yongxing et al., 2017). Energetic people appear to achieve their goals in less time and derive more joy from the paths to their goals (Schippers & Hogenes, 2011). According to Järvi and Khoreva (2020), talented employees are the behavioural role models and strategic catalysts who energise and inspire their colleagues to exceed performance expectations. Productive energy, also known as collective energy, is essential in talent management because it considers employees' cognitive processes and affective and behavioural resources to pursue organisational goals (Cole et al., 2008). Talent management unleashes the passion, commitment and performance required from individuals to support the business vision, mission and goals (McArdle & Rademan, 2008). Talent management will necessitate the development of dynamic organisational capabilities in which employees will feel a sense of vitality and learning to sustain team innovation (Schiuma et al., 2007; Vivaz-López, 2014). Barkhuizen and Stanz (2010) discovered a significant positive relationship between organisational energy and talent management practices such as management talent mindset, talent review processes, talent deployment, workforce planning, career development, and performance management in a study. Mpofu (2013) discovered that talent management practices in local government institutions are significant predictors of productive energy. In the study, talent management and productive energy were related to employees' voluntary turnover intentions.

H 4: Talent management is significantly positively related to productive energy

2.5 Talent Management and Organisational Commitment

Gallardo-Gallardo et al. (2013) define the commitment perspective on talent as a dedication to the individual's work and the organisation. Organisational commitment is critical in facilitating the link between talent management and organisational performance (Almaaitah et al., 2020; Sarangal et al., 2020). According to Pa'wan and Said (2020), improving talent management can boost organisational commitment in developing countries. The relationship between talent management practices and organisational commitment is well established (Abazeed, 2018). According to Malkawi (2017), talent acquisition, development, and retention positively affect organisational commitment, with talent retention ranking highest among the other variables. Nobaricidishe et al. (2014) discovered a significant relationship between talent management and its sub-variables, such as talent attraction, retention, development, and organisational commitment.

H 5: Talent management is significantly positively related to organisational commitment

2.6 Talent management as a moderator-mediator between organisational talent culture and individual, group and organisational outcomes

In what follows, we discuss the variables' possible mediating, and moderating roles. In the absence of ethical organisational culture research in the talent management context, we will interchangeably focus on the outcomes of ethical culture and organisational culture.

2.6.1 Organisational talent culture, talent management and voluntary turnover intentions

The organisational culture can cause employees to consider staying or moving elsewhere (Hejase et al., 2016). According to Mzezewa (2019), organisational culture, among other things, determines whether local government institutions are appealing places to work and can retain staff. According to Kontoghiorghes (2016), high-performance organisational cultures predict talent attraction and retention. Dominant government policies and structural arrangements hamper HR retention efforts (Kakumba & Fennell, 2014). Local government leaders must implement practical business strategies for employee development, engagement and empowerment, and a positive work experience (Izard-Carroll, 2016). According to Biswas (2009), human resource practices mediate the relationship between organisational culture, leadership, and organisational performance and moderate the relationship between human resource practices and employee voluntary turnover intentions. Based on the above viewpoints, talent management can mediate or moderate the relationship between ethical organisational talent culture and voluntary turnover intentions.

H 6: Talent management mediates the relationship between ethical organisational talent culture and voluntary turnover intentions

H6a: Talent management moderates the relationship between ethical organisational talent culture and voluntary turnover intentions

2.6.2 Ethical organisational talent culture, talent management, positive individual outcomes and voluntary turnover intentions

There is currently a scarcity of empirical research to explain an ethical organisational talent culture's contribution to the positive individual work-related outcomes identified in the presented study. Cabana and Kaptein (2019) argue that ethical cultures are essential for achieving positive individual, team, and organisational outcomes. Ruiz-Palomino et al. (2013) discovered a link between ethical culture and employee satisfaction. Unfortunately, the bureaucratic work cultures of local government institutions impacted employee job satisfaction (Langer et al., 2019). Employee turnover in local government has been linked to dissatisfaction with working conditions (Mnukwa, 2008). According to Mzezewa (2019), municipalities can retain employees by improving their satisfaction with a pleasant work environment, opportunities for advancement and promotion, and effective rewards (i.e. market-related salaries and financial benefits). From this vantage point, we believe that talent management can bridge organisational talent culture and job satisfaction. Similarly, we believe that job satisfaction can moderate the relationship between talent management and voluntary turnover intentions as part of positive individual outcomes proposed by Barkhuizen and Gumede (2021).

A study on organisational talent culture and adult state hope are still in progress. Luo et al. (2017) discovered evidence for a link between corporate culture and psychological hope. Manchata and Sudhakar (2017) discovered, in particular, that organisational culture dimensions such as autonomy, interdepartmental relationships, and knowledge sharing are related to hope as a component of psychological capital. Valero et al. (2015) discovered that dispositional hope was negatively related to voluntary turnover intentions in the presence of motivational states, supervisor involvement in job performance, and autonomous goals. Gupta (2014, p. 656) proposes that psychological hope will mediate the relationships between high-performance work practices (i.e. coaching and mentoring, empowerment, selective staffing, induction, competency development, sound promotion practices, and flexible job designs) and positive individual outcomes such as employee creativity. Gupta and Shaheen (2017) discovered support for the role of hope as a personal resource in moderating the relationship between work engagement and turnover intentions. Employee-supervisor and employee-coworker relationships influenced engagement in this study. From this vantage point, we propose that talent management can bridge organisational talent culture and adult state hope (as a component of positive individual outcomes).

Another significant gap in the literature is the role of organisational culture in workplace meaningfulness and meaning in life. The Multiple needs mode of Cropezano et al. (2001) proposes that innovative and supportive cultures can foster a meaningful work environment for employees. Earlier in this article, we discussed the potential spillover effect of meaningful work on employees' sense of meaning in their lives (see Hatice & Mine, 2016). Workplace stress has a significant negative impact on life meaning (Allan et al., 2015). In adverse situations, Arnoux-Nicolas et al. (2016, p. 3) see the concept of meaning as a "framework or a protective firewall." According to Fletcher and Schofield (2019), meaning in life mediates the relationship between work meaningfulness and job-work engagement while controlling individual motivation, line management roles, and the socio-political environment. Saurombe (2015) discovered that academic staff's meaning in life was significantly related to talent retention practices in a public South African higher education institution. Their sense of purpose in life also influenced employees' intentions to leave their jobs. Based on the preceding, it is reasonable to believe that talent management can mediate the relationship between organisational talent culture and life meaning.

H 7: Talent management mediates the relationship between ethical talent culture and positive individual outcomes

2.6.3 Ethical organisational talent culture, talent management, productive energy and voluntary turnover intentions

According to Cabana and Kaptein (2019), ethical culture is an important concept to investigate in teamwork because it contributes to team performance. Available research indicates that organisational energy, as defined by an organisational climate (see Derman et al., 2011), predicts team productive energy (see Cuff, 2011). In the latter case, organisational energy was based on Tosey and Lewellyn's (2020) seven energies model (i.e. EnergyScapes Profile). It included inspiration, integration, meaning, community, control, activity, and existence. According to Preskar and Zizek (2020), organisational culture can boost organisational energy by providing work experiences that increase employees' positive emotions such as joy, pride, and enthusiasm. Ghorbanhosseini (2013) discovered that human capital practices mediated the relationship between organisational culture and the impact of organisational commitment on organisational development in a teamwork context.

H 8: Talent management mediates the relationship between ethical organisational talent culture and productive energy.

2.6.4 Ethical organisational talent culture, talent management, organisational commitment and voluntary turnover

It is well known that there is a link between organisational culture and organisational commitment (Said Al-Shurafat & Halim, 2018). Valentine et al. (2002) contend that ethical context positively impacts organisational commitment and person-job fit. Inanlou and Ahn (2017) discovered that

organisational cultures characterised by adequate communication, trust, and high innovation increased employees' organisational commitment. The latter study also supported human resource development's partial mediation effect in the relationship between organisational culture and organisational commitment. According to Hayat et al. (2019), human capital practices mediated the relationship between organisational culture, teamwork, organisational development, and organisational commitment. According to the findings, talent management may mediate the relationship between organisational culture and organisational commitment. In the absence of management commitment to talent, a lack of talent attraction and development practices, and dissatisfaction with institutional practices and structures, organisational commitment has been found to be negatively related to voluntary turnover intentions of public sector employees (see Lesenyeho et al., 2018b).

H 9: Talent management mediates the relationship between organisational culture and organisational commitment.

3. Research design

The researchers applied a quantitative research approach by distributing surveys to collect the data. Cross-sectional research was used to determine the interrelationships between the variables (Field, 2019). This research complies within the positivist research paradigm. The positivism paradigm falls within the objectivism epistemology (Crotty, 1998) and helps understand human behaviour through questionnaires and measurements (Cohen et al., 2011).

3.1 Sampling

A selected Botswana local government institution's employees were considered the target population for this study. A total of 650 questionnaires were distributed, with 405 questionnaires completed and returned. This represented a response rate of 62.30%. The respondents were primarily female (55,30%), married (51,34%) and Setswana speaking (99,80%). Most of the participants were aged between 40 and 49 years (66,40%), had a Certificate and Diploma as their highest level of educational qualification (48,63%) and were employed on an operational level (39,76%). The participants mainly had work experience between 14 and 29 years (39,76%). About 71.60% of the respondents did not have an opportunity to be promoted over the last five years. The vast majority of the respondents 90.6% worked between 31 and 40 hours per week (90.6%). The relevant local government authority granted permission for the study. The questionnaires were distributed in hardcopy to the respondents by the local government institution's supervisors and heads of departments. Before the study began, the researchers obtained ethical approval. Participation in the study was entirely voluntary, and strict confidentiality was upheld at all times.

3.2 Measuring instruments

The section below describes the measuring instruments that were used in the study. All measuring instruments used a response scale ranging from *Strongly Disagree* (1) to *Strongly Agree* (6). The results of the factor analyses, reliabilities and means scores obtained in the present study are reported per measure.

Ethical organisational talent culture: The researchers adapted the “Ethical organisational culture” measure (Kaptein, 2008). The adapted version measures 26 items and four factors: supervisor congruence, feasibility, supportability and discussability. Kaptein (2008) found Cronbach Alphas of above 0,90 for all the measurement factors. We developed and added a “Values” scale to assess the cultural values in the institution. The initial factor analyses resulted in four factors, Feasibility (mean = 2,8446; $\alpha = 0,961$), Institutional values (mean = 2,5935; $\alpha = 0,946$, Leadership (mean = 2,7379; $\alpha = 0,916$) and Discussability (mean = 3,1706; $\alpha 0,789$ ’ ‘ Measure of sample adequacy - MSA = 0,949, Total variance explained = 75,538%). A subsequent second-order factor analysis resulted in one factor labelled Ethical organisational culture (Variance explained = 72.492%; mean = 2,8157; $\alpha = 0,883$). On average, the respondents experience a poor ethical organisational talent culture.

Talent management measure: An adapted talent management measure of Barkhuizen (2018) was used to assess talent management practices in this study. The questionnaire consisted of 27 items and

measured six talent management practices: talent development, compensation and benefits, talent acquisition, talent performance management, talent workforce planning and talent retention strategies. Barkhuizen and Gumede (2021) obtained acceptable internal consistencies for the measure ranging from $\alpha = 0,732$ to $0,939$. The initial factor analyses resulted in five underlying factors, i.e. Compensation (mean = 2,1364; $\alpha = 0,916$), Development (mean = 2,6247; $\alpha = 0,896$), Performance (mean = 2,7320; $\alpha = 0,921$), Retention (mean = 2,1053; $\alpha = 0,922$) and Workforce Planning (mean = 2,5154; $\alpha = 0,860$) 'MSA = 0,939, Total variance explained = 80,775%). A second-order factor analysis was done to create the variable Talent management (Variance explained = 72.492%; mean = 2,4086; $\alpha = 0,904$) for moderating-mediating analyses. The results showed that, on average, the respondents experience a poor application of talent management practices in the government institution.

Positive individual outcomes

The Minnesota job satisfaction questionnaire – shortened, Adult state hope scale and Meaning in life questionnaire- were used to measure the study's positive work-related outcomes.

Job satisfaction: An adapted and shortened version of the Minnesota Job Satisfaction Questionnaire (Buitendach & Rothmann, 2009) measured the respondents' job satisfaction. The MSQ covers 13 aspects relating to the respondents' work. Buitendach and Rothmann (2009) obtained an internal consistency of $\alpha = 0,86$. In the present study, factor analyses revealed one underlying factor for job satisfaction (Measure of sample adequacy - MSA = 0,946, Total variance explained = 75,050%, Mean = 2,774) with a reliability of $\alpha = 0,964$. The respondents displayed average levels of job satisfaction.

Adult State Hope: An adapted version of the Adult state hope scale of Snyder et al. (1996) was used to assess the respondents' level of hope in the work context. The scale consists of six items and measures two dimensions: Agency and Pathways. Snyder et al. (1991) found acceptable internal consistencies ranging from $\alpha = 0,79$ to $0,95$. The factor analyses resulted in one factor for the Adult hope scale (MSA = 0,916, Total variance explained = 91,920%; Mean = 3,405) with a reliability of $\alpha = 0,982$. The results show a slightly above-average level of adult state hope.

Meaning in life: The ten-item Meaning in life questionnaire (MLQ) of Steger et al. (2006) assessed the presence of meaning in the respondents' life and the search for meaning among respondents. Steger et al. (2006) found acceptable consistencies for this questionnaire ranging from $\alpha = 0,82$ to $0,87$. The factor analyses in the present study resulted in one factor for the Meaning in life questionnaire (MSA = 0,917, Total variance explained = 80,517%, Mean = 3,530) with a reliability of $\alpha = 0,965$. The respondents displayed average levels of meaning in life. A second order factor analysis were done on the three measures above to developed the Positive individual work outcomes variable (Variance explained = 79,007%; mean = 3,1599; $\alpha = 0,863$).

Negative individual outcomes

Voluntary turnover: The employee retention scale of Cohen (1993) was used to assess the voluntary turnover intentions of employees. The questionnaire consisted of three items. Theron et al. (2014) obtained an acceptable $\alpha = 0,914$. In the present study, factor analyses revealed one underlying factor for job satisfaction (MSA = 0,761, Total variance explained = 85,944%, Mean = 4,4331) with a reliability of $\alpha = 0,918$. The results showed that about 60% of the respondents considered quitting their jobs.

Productive organisational energy: The productive energy measure of Cole et al. (2008) was used to measure the productive organisational energy of employees. The 14-item questionnaire measures three constructs: Affective, Cognitive and Behavioural energy. Responses are measured on a six-point Likert scale ranging from *Strongly disagree (1)* to *Strongly agree (6)*. Acceptable internal consistencies were obtained for the measure (Cuff, 2011). In the present study, factor analyses revealed two underlying factors for Productive Energy (MSA = 0,949, Total variance explained = 75,884%) labelled Affective energy and Behavioural energy. A second-order factor analysis was done to create the variable Productive Energy (Variance explained = 88,028%; mean = 3,1535; $\alpha = 0,863$)

for moderating analyses. The respondents demonstrated slightly above average levels of productive energy.

Organisational commitment: Meyer and Allen's (1991) organisational commitment questionnaire is used to measure organisational commitment. The questionnaire consists of 15 items and measures three factors: affective, normative and continuous commitment. Lesenyeho (2017) obtained an internal consistency of $\alpha = 0,857$. In the present study, factor analyses revealed two underlying factors for organisational commitment (MSA = 0,943, Total variance explained = 75,050%) labelled Affective commitment and Normative commitment. A second-order factor analysis was done to create the variable Organisational commitment (Variance explained = 74.020%; mean = 2,9728; $\alpha = 0,926$) for moderating-mediating analyses. The respondents demonstrated slightly below-average levels of commitment to the institution.

3.3 Statistical analyses

We used SPSS (SPSS In., 2021) to perform the statistical analyses for this research. The data analyses techniques included descriptive statistics (i.e. means, frequencies), exploratory factor analyses, reliability analyses and multiple regression analyses. The reliabilities of the measures were established using the guidelines of Cohen (1988), namely $\alpha \geq 0,70$. The guidelines of Cohen (2008) were used to determine the magnitude of the relationships between the variables identified for this study: $r \leq 0,29$, $p \leq 0,05$ (statistically significant relationship), $0,30 \leq r \leq 0,49$, $p \leq 0,05$ (practically significant, medium effect) and $r \geq 0,50$, $p \leq 0,05$ (practically significant, large effect). A series of multiple regression analyses were done to determine the mediation and moderating effects of variables in this study. Mediation analyses involve the first three steps of the moderation analyses (without centring the predictor and moderator variables). Complete mediation occurs when the independent variable no longer affects the dependent variable. Partial mediation occurs when the independent variable's influence on the dependent variable is reduced when controlling for the mediator (Baron and Kenny, 1986).

4. Results

4.1 Testing of Hypotheses

The research hypotheses for this study were tested by applying Pearson correlation analyses and multiple regression analyses. The results of the Pearson correlation analyses are reported in Table 1 below.

4.1.1 Results of the Pearson correlation analyses

The results showed that Ethical organisational talent culture and its dimensions (i.e. Feasibility, Values, Leadership, Discussability) are significantly positively related to Talent Management and its dimensions (i.e. Development, Compensation, Workforce planning, Performance management, Retention strategies). All effects were large except for the relationships between Discussability, Compensation, Workforce Planning, and Performance management which were all medium. These results confirm Hypothesis 1 that ethical organisational talent culture is significantly related to talent management. Talent management and its dimensions were significantly positively associated with job satisfaction. All effects were large. The results confirm hypothesis 2.1, that talent management would significantly positively affect job satisfaction. Likewise, talent management and its dimensions were significantly positively related to adult state hope. All effects were large, except for the medium relationship between retention strategies and adult state hope. The results confirm hypothesis 2.2 that a significant positive relationship exists between talent management and adult state hope. Talent management and its dimensions were also significantly positively related to meaning in life. All effects were large except for the relationship between compensation and retention strategies which were medium. These results confirm Hypothesis 2.3, that talent management is significantly related to meaning in life. Combined, we can conclude that talent management and its dimensions are significantly positively related to positive individual outcomes (i.e. job satisfaction, adult state hope and meaning in life), thus confirming hypothesis 2. Talent management and its dimensions were also significantly negatively related to voluntary turnover intentions. All effects were medium, except for the large relationship between talent development and voluntary turnover. These results confirm

hypothesis 3, that talent management is negatively related to voluntary turnover intentions. Talent management and its dimensions were significantly positively associated with Productive energy. All the effects were large, except for talent retention strategies and productive energy. All effects were large except for the relationship between retention strategies and productive energy, which was medium. The results confirm hypothesis 4, that talent management is significantly related to productive energy. Lastly, the results also showed that talent management and its dimensions are significantly positively related to organisational commitment. All effects were large. The results confirm hypothesis 5, that talent management positively relates to organisational commitment.

Table 1: Pearson correlations analyses

	Organisational Talent Culture	Feasibility	Institutional Values	Leadership	Discussability	Talent Management	Development	Compensation	Workforce Planning	Performance Management	Retention Strategies
Feasibility	.904**	1									
Values	.865**	.735**	1								
Leadership	.892**	.782**	.696**	1							
Discussability	.774**	.586**	.508**	.554**	1						
Talent Management	.803**	.780**	.763**	.718**	.487**	1					
Development	.690**	.706**	.621**	.616**	.385**	.887**	1				
Compensation	.582**	.599**	.509**	.551**	.328**	.819**	.738**	1			
Workforce Planning	.676**	.615**	.680**	.602**	.381**	.839**	.629**	.539**	1		
Performance Management	.743**	.759**	.626**	.618**	.523**	.885**	.730**	.626**	.620**	1	
Retention Strategies	.614**	.553**	.616**	.558**	.293**	.824**	.586**	.550**	.656**	.583**	1
Job Satisfaction	.652**	.679**	.574**	.617**	.292**	.782**	.747**	.672**	.595**	.611**	.562**
Adult state hope	.753**	.759**	.627**	.617**	.568**	.722**	.653**	.553**	.550**	.733**	.453**
Meaning in life	.693**	.713**	.581**	.564**	.519**	.663**	.602**	.469**	.511**	.667**	.434**
Productive Energy	.722**	.733**	.595**	.605**	.484**	.748**	.701**	.605**	.512**	.743**	.484**
Organisational Commitment	.760**	.747**	.682**	.678**	.498**	.764**	.726**	.581**	.575**	.706**	.546**
Voluntary Turnover	-.465**	-.458**	-.415**	-.401**	-.333**	-.521**	-.509**	-.444**	-.339**	-.475**	-.337**

** Denotes significant relationships between the variables. Below are the cut-off points for statistical significance:

$r \leq 0.29$, $p \leq 0.05$ (statistically significant relationship), $0.30 \leq r \leq 0.49$, $p \leq 0.05$ (practically significant, medium effect) and $r \geq 0.50$, $p \leq 0.05$ (practically significant, large effect).

Source: Author's own

4.2.1 Results of the mediation analyses

This section reports on the results of the mediation analyses as hypothesised earlier in this article.

Mediation analyses between ethical organisational talent culture, talent management and voluntary turnover

The results of the mediation analyses between organisational talent culture, talent management and voluntary turnover are reported in Table 2 below.

Table 2: Mediation analyses between ethical organisational talent culture, talent management and voluntary turnover

	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	R	R ²	Δ R ²
	B	Std. Error	Beta					
Step 1: Ethical organisational talent culture and voluntary turnover								
(Constant)	6.536	0.248		26.345	0.000	.465 ^a	0.216	0.213
Ethical organisational talent culture	-0.742	0.084	-0.465	-8.815	0.000			
Step 2: Ethical organisational talent culture and talent management								
						.803 ^a	0.646	0.644
(Constant)	0.134	0.107		1.247	0.213			
Ethical organisational talent culture	0.818	0.037	0.803	22.297	0.000			
Step 3: Ethical organisational talent culture, talent management and voluntary turnover								
(Constant)	6.629	0.241		27.506	0.000	.531 ^a	0.281	0.276
Ethical organisational talent culture	-0.170	0.138	-0.107	-1.235	0.218			
Talent Management	-0.694	0.136	-0.441	-5.103	0.000			

Source: Author's own

The final step (3) in the mediation analyses showed that ethical organisational talent culture and talent management together explained 28,1% of the variance in voluntary turnover. The perceived effect on voluntary turnover in Step 3 ($R^2=0.281$; $p=0.00$), was smaller than in Step 2 ($R^2=0.646$; $p=0.00$). The effect showed a non-significant relationship between ethical organisational talent culture (the predictor variable) and voluntary turnover intentions. Talent management, therefore, mediates the relationship between ethical organisational talent culture and voluntary turnover. These results confirm hypothesis 6: talent management mediates the relationship between ethical organisational talent culture and voluntary turnover.

Mediation analyses: Ethical organisational talent culture, talent management practices and positive individual outcomes

The results of the mediation analyses between ethical organisational talent culture, talent management and positive individual outcomes are reported in Table 3 below.

Table 3 Mediation analyses between ethical organisational talent culture, talent management and positive individual outcomes

	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	R	R ²	Δ R ²
	B	Std. Error	Beta					
Step 1: Ethical organisational talent culture and positive individual outcomes								
(Constant)	0.402	0.140		2.876	0.004	.781 ^a	0.611	0.609
Ethical organisational talent culture	0.994	0.047	0.781	20.955	0.000			
Step 2: Ethical organisational talent culture and talent management								
						.803 ^a	0.646	0.644
(Constant)	0.134	0.107		1.247	0.213			
Ethical organisational talent culture	0.818	0.037	0.803	22.297	0.000			
Step 3: Ethical organisational talent culture, talent management and positive individual outcomes								
(Constant)	0.279	0.125		2.228	0.027	.834 ^a	0.696	0.693
Ethical organisational talent culture	0.551	0.071	0.433	7.726	0.000			
Talent Management	0.560	0.070	0.446	7.965	0.000			

Source: Author's own

The final step (3) in the mediation analyses showed that ethical organisational talent culture and talent management together explained 69,6% of the variance in positive individual outcomes. The results showed that adding the mediator variable with the predictor variable showed a significant predictive relationship between the ethical organisational talent culture and positive individual outcomes. The perceived effect on positive individual outcomes in Step 3 ($R^2=0.696$; $p=0.00$), was larger than in Step 2 ($R^2=0.646$; $p=0.00$). Talent management, therefore, does not mediate the relationship between ethical organisational talent culture and positive individual outcomes. These results reject hypothesis 7, that talent management mediates the relationship between ethical organisational talent culture and positive individual outcomes.

Mediation analyses: Ethical organisational talent culture, talent management practices and productive energy

The results of the mediation analyses between ethical organisational talent culture, talent management practices and productive energy are reported in Table 4.

Table 4 Mediation analyses between ethical organisational talent culture, talent management and productive energy

	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	R	R ²	Δ R ²
	B	Std. Error	Beta					
Step 1: Ethical organisational talent culture and productive energy								
(Constant)	0.607	0.152		4.007	0.000	.722 ^a	0.522	0.520
Ethical organisational talent culture	0.906	0.052	0.722	17.453	0.000			
Step 2: Ethical organisational talent culture and talent management								
						.803 ^a	0.646	0.644
(Constant)	0.134	0.107		1.247	0.213			
Ethical organisational talent culture	0.818	0.037	0.803	22.297	0.000			
Step 3: Ethical organisational talent culture, talent management and productive energy								
(Constant)	0.492	0.140		3.521	0.001	.778 ^a	0.606	0.603
Ethical organisational talent culture	0.485	0.079	0.387	6.100	0.000			
Talent Management	0.533	0.078	0.435	6.857	0.000			

Source: Author's own

The final step (3) in the mediation analyses showed that ethical organisational talent culture and talent management together explained 60,6% of the variance in productive energy. The perceived effect on voluntary turnover in Step 3 ($R^2=0.606$; $p=0.00$), was smaller than in Step 2 ($R^2=0.646$; $p=0.00$). The effect, however, remained significant for the predictor variable, indicating that talent management partially mediated the relationship between ethical organisational talent culture and productive energy. These results partially confirm hypothesis 8, that talent management mediates the relationship between ethical organisational talent culture and productive energy.

Mediation analyses: Ethical organisational talent culture, talent management practices and organisational commitment

The results of the mediation analyses between ethical organisational talent culture, talent management and organisational commitment are reported in Table 5 below.

Table 5 Mediation analyses between ethical organisational talent culture, talent management and organisational commitment

	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	R	R ²	Δ R ²
	B	Std. Error	Beta					
Step 1: Ethical organisational talent culture and organisational commitment								
(Constant)	0.520	0.130		3.992	0.000	.760 ^a	0.578	0.577
Ethical organisational talent culture	0.869	0.044	0.760	19.624	0.000			
Step 2: Ethical organisational talent culture and talent management								
						.803 ^a	0.646	0.644
(Constant)	0.134	0.107		1.247	0.213			
Ethical organisational talent culture	0.818	0.037	0.803	22.297	0.000			
Step 3: Ethical organisational talent culture, talent management and organisational commitment								
(Constant)	0.425	0.121		3.514	0.001	.807 ^a	0.651	0.649
Ethical organisational talent culture	0.502	0.069	0.436	7.256	0.000			
Talent Management	0.466	0.068	0.414	6.882	0.000			

Source: Author's own

The final step (3) in the mediation analyses showed that ethical organisational talent culture and talent management explained 65,1% of the variance in organisational commitment. The perceived effect on organisational commitment in Step 3 ($R^2=0.651$; $p=0.00$), was slightly larger than in Step 2 ($R^2=0.646$; $p=0.00$). The effect for the predictor variable remained significant, indicating that talent management does not moderate the relationship between ethical organisational talent culture and organisational commitment. These results reject Hypothesis 9, that talent management mediates the relationship between ethical organisational talent culture and organisational commitment.

5. Discussion

The primary goal of this study was to identify the antecedents and outcomes of talent management in a Botswana local government institution. We investigated ethical organisational culture as a possible antecedent of talent management. Job satisfaction, adult state hope, and life meaning were identified as positive individual outcomes of talent management, whereas voluntary turnover intentions were identified as a negative outcome. Furthermore, as group and organisational level outcomes for talent management, we focused on productive energy and organisational commitment. The study's findings are discussed in the ensuing section.

According to our findings, talent management begins with an ethical organisational culture (see Musriha, 2013; Rasool et al., 2012; Swailes, 2020). The dimensions of talent management were significantly related to ethical organisational culture and its dimensions. As in previous studies (Mbandlwa et al., 2020), ethical leadership was important in determining the perceived level of talent management practice (i.e. Compensation, Development, Performance, Retention and Workforce Planning). In general, institutions were perceived to be using talent management practices ineffectively. Leadership is critical in developing local government talent to ensure long-term viability and performance (Qhibi, 2017). A culture that undermines human capital development is unlikely to meet the broader public's service expectations (Mohamed & Abukar, 2013). Furthermore, leaders who fail to invest in employee development risk jeopardising retention and succession

planning for future management levels (Damer, 2020). Similarly, the absence of high-performance cultures can contribute to the inability of local governments to attract and retain skilled employees (Kontoghiorghes, 2016). Inadequate performance management practice leads to a misalignment of local government's strategic and operational plans (Khalid et al., 2015).

Our findings also highlighted the areas of compensation that are problematic in the Botswana local government context (see Mogalakwe & Nyamnjoh, 2017). Employees perceived their compensation to be inadequate, not market-related, and insufficient to meet their basic living needs. According to Zhou (2017), it is critical to provide competitive rewards to attract and retain talent in local government institutions. Because of the current ethical organisational culture in the local government institution, workforce planning was another neglected area. Staffing is a critical issue in the local government, as many of these institutions face severe talent shortages to meet public service expectations (Salajagheh et al., 2014; Shabankareh et al., 2015). To ensure adequate staffing levels for institutional competitiveness, local government should embrace a planning and development culture (Burma, 2014; Goodman et al., 2013). This study's respondents also perceived a lack of sound cultural values in the institution. Values and norms are the cornerstones of ethical service and instil public trust in promoting customer-centricity (see Andersson, 2019; Dwivedi, 2005; Kandula, 2006). Chepngeno et al. (2012) highlight the importance of established values and norms to ensure sustainable performance.

It is not surprising, then, that talent management mediated the relationship between ethical organisational culture and staff voluntary turnover intentions in this study. According to Hejase et al. (2016), organisational culture can cause employees to consider staying or voluntarily leaving. In the current study, we discovered a direct relationship between a poor organisational ethical culture and talent management and between talent management and voluntary turnover. In the current study, nearly 60% of respondents voluntarily considered quitting their jobs. As a result, it is possible that voluntary turnover intentions occurred due to a poor ethical organisational culture due to talent management. Mzezewa (2019) stated that organisational culture is a significant determinant of whether local government institutions are appealing places to work for and retain employees.

The findings revealed that positive individual outcomes such as job satisfaction, adult state hope, and meaning in life were significantly related to talent management practices. Thus, talent management practices are important for achieving positive individual outcomes in local government institutions. The findings revealed that respondents were slightly dissatisfied with the talent management practices in the local government institution on average. Our findings support the notion that poor talent management practices reduce employee job satisfaction (see Lesenyeho et al., 2018a; Theron et al., 2014). This is an important finding because local government institutions rely on satisfying talent to deliver adequate service (Worku, 2020).

Talent management also emerged as a significant predictor of adult state hope among local government employees. This is a notable finding and fills the gap regarding the interactive relationship between talent management and adult state hope. Talent management can either play a resourceful (Orlando et al., 2019) or motivational role (Dries, 2013) to assist talented employees in navigating their environment towards the achievement of personal and local government goals (Martin-Krumm et al., 2014). Therefore, talent management can promote the individual strengths required for goal-directed behaviour in the local government (Bolander et al., 2017; Snyder et al., 1996). As such, the nature of talent management can have a spillover effect on adult state hope. From the results, it is plausible that insufficient levels of talent management cascaded into average levels of adult state hope.

In this study, we also uncover evidence that talent management contributed to a government employees' sense of purpose in life. This finding emphasises the importance of talent management as a meaningful work facilitator who can also contribute to individuals' personal lives (Al Rina & Atan, 2020; Hatice & Mine, 2016). This is a significant finding because meaningful work can attract and retain the necessary talent to local government institutions, allowing them to overcome a critical skills

shortage (Cropozano et al. 2001; Saurombe, 2015). As a result, our findings encourage local government institutions to be forward-thinking and to implement meaningful work practices that foster workplace talent (see Claus, 2019).

Furthermore, there was no support for talent management's potential mediating role between ethical organisational talent culture and positive work outcomes. Similarly, positive individual outcomes did not moderate the relationship between staff members' talent management and intentions to leave. It is important to note that adult hope and meaning in life are “work in progress” in talent management. More research is needed to investigate the roles of these two concepts in the relationship between talent management and its outcomes in the workplace, particularly in light of the employees' high voluntary turnover intentions in this study.

Talent management was positively related to productive energy, consistent with previous research (Mpofu, 2013). As a result, talent management is an essential catalyst for the team behaviour required to support local government institutions' strategic goals (Järvi & Khoreva, 2020). The findings also emphasise the significance of talent management in promoting social identity in the workplace as a driver of the individual, team, and organisational performance (Berber et al., 2020). To some extent, talent management mediated the relationship between ethical organisational culture and productive energy. Organisational culture can boost workforce energy by providing work experiences that increase positive emotions in employees (Preskar & Zizek, 2020). Our findings support Ghorbanhosseini's (2013) claim that human capital practices can mediate the relationship between organisational culture and positive work outcomes.

This study's findings emphasised the direct relationship between talent management and organisational commitment (see Malkawi, 2017; Nobarieidishé et al., 2014). According to Ulrich and Smallwood (2012), commitment is critical in workplace talent management. Organisational cultures characterised by adequate communication, trust, and high innovation, as mentioned by Inanlou and Ahn (2017), are essential for promoting the organisational commitment of local government employees. We found no support for a mediating or moderating effect for organisational commitment.

6. Management implications

In practice, the research emphasises organisational talent culture and management's problematic areas. Inadequate ethical leadership behaviour, in particular, has a significant impact on implementing talent management practices. Another troubling result is the absence of moral values in government institutions. As stated earlier in this paper, values are the foundation for effective public service delivery through employee behaviours. According to the findings, more emphasis should be placed on developing a solid ethical organisational talent culture that will contribute to desirable human capital practical, individual, group, and organisational outcomes. Another primary concern source is government employees' high voluntary turnover intentions. Local government institutions currently face a severe shortage of skilled and competent employees. The findings of this study can be used by logical government institutions to proactively address and mitigate the institutional factors that contribute to staff voluntary turnover intentions.

7. Limitations and Recommendations

We encountered several limitations in this study, as with any other research. The most notable limitation was the scarcity of empirical evidence on adult state hope and meaning in life in the workplace context. The researchers were challenged in establishing possible relationships between the variables from a theoretical point of view and the subsequent interpretation of the results. Future research should pay more attention to adult state hope and meaning in life in the workplace context. Our analysis yielded some promising results for these variables in the context of ethical organisational culture, talent management, and voluntary turnover intention. Similarly, there is little research on ethical organisational culture as a precursor to talent management. As a result, we had to draw on existing organisational culture research to establish potential theoretical relationships with the variables in this study. Future research could focus on delving deeper into the concept of ethical organisational culture in the African context, taking into account the characteristics of the unique national and political cultures and their influence on workplace culture. The delivery of services is at

the heart of local government institutions. Future research can benefit from evaluating service quality and performance in public sector contexts as a possible outcome of ethical organisational culture, talent management, positive individual outcomes, productive energy, and organisational commitment. We recommend conducting mixed-method research to investigate the quantitative findings obtained in this study. Employees in this study reported insufficient levels of ethical organisational culture and inadequate talent management practices. Qualitative research can provide a deeper understanding for interpreting the findings of this study.

8. Conclusions

Talent management is an important mechanism to facilitate the desired individual behaviours to accomplish the strategic objectives of local government institutions. An ethical organisational talent culture is the driver of any talent management initiatives. Without leadership commitment and sound values underpinning local government workplace cultures and ethical service behaviours of employees, no institutions will deliver its vital mandate to the broader society. Our research provides valuable inputs for establishing a conducive ethical talent management environment for local government employees considering cultural frameworks and talent management consequences.

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Racial Microaggressions and Diversity Climate at Selected South African Organisations: The Role Of Ethnicity

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Keywords

Racial microaggressions; diversity climate; ethnicity; South Africa

Abstract

This study proposed and tested a moderation model to determine if the interaction between racial microaggressions and ethnicity would have an impact on diversity climate. Existing literature suggests that majority of diversity climate examinations have largely explored related outputs. The present study therefore identified a research opportunity to investigate the racial microaggressions and ethnicity interaction in predicting a diversity climate in a unique, diverse environment such as South Africa. The quantitative cross-sectional study collected 230 responses from a convenience sample. Participants were from the financial and banking sector as well as the retail and industrial and manufacturing sectors based in the Gauteng Province in South Africa. Respondents completed measures to collect data on biographical information, racial microaggressions and diversity climate. Statistical analysis included descriptive statistics, correlations, a moderation model and ANOVAs. Findings indicate that the interaction between racial microaggressions and ethnicity would significantly predict diversity climate. The study also found evidence that African respondents experience more racial microaggressions when compared to their White counterparts. The study concludes that ethnic diversification is an important factor in creating conducive diversity climates.

1. Introduction

Research have indicated that employee composition within organisations are becoming more heterogeneous (Mor Barak & Travis, 2013). As awareness of diversity by both organisations and social environments increase, the need to effectively manage diversity has also increased. Changes in economic policy, the establishment of free-market systems and removal of trading barriers has created a situation where individuals and employees can move between areas/countries more freely (Roberson, 2019). Organisations are specifically attracted to the benefits associated with diversity, which would include benefits for individuals and working groups. The increased diversity and associated advantages have seen an increased interest amongst researchers, more specifically towards diversity conceptualisations, measures, effects, and circumstances (Roberson, 2019). Diversity climate is one of the areas within diversity management that has seen an increase amongst researchers. The seminal work from Mackay and colleagues (2008) describes diversity climate as the shared opinions of employees and how they assess their work milieu as fair and socially inclusive of all individuals (McKay et al., 2008). Early research on diversity climate found adequate evidence to suggest that diversity climate would benefit both the individual and organisation. Pivotal research showed diversity climate was associated with improved individual attitudes (improved job performance and reduced employee withdrawal) and enhanced organisational performance (Cox, 1994). Researchers have further agreed that the diverse composition of the specific organisation would affect how employees perceive diversity (Kosek & Zonia, 1993).

Although considerable effort has been made towards creating a prejudice-free South African society, reported discrimination remains a reality for some South Africans (Jaga et al., 2018). From a South African perspective, scholars have indicated that the future importance of South Africa's young

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democracy will rely on “the development of harmonious race relations” (Jackson & van der Vijver, 2018a, p. 12). Unfortunately, racial microaggressions, which are also considered as subtle forms of discrimination, remain a reality for many employees and organisations. “Microaggressions are considered small, common, and sometimes ambiguous, yet stressful for those on the receiving end given their ubiquity and deniability” (Williams, 2020, p. 3). In certain scenarios and situations, racial microaggressions may cause psychological harm, which can lead to mental health issues. Therefore, racial microaggressions require directed actions in order to remove this form of subtle discrimination from organisations (Williams, 2020). Taking into consideration that ethnic composition affects the diversity climate, and South Africa still continues to demonstrate discrimination and prejudice within organisations, the current study aims to test whether or not the interaction of ethnicity and racial microaggressions would predict diversity climate. The study further aims at assessing ethnic views on racial microaggressions and diversity climate. The proposed conceptual model is depicted in Figure 1 below.

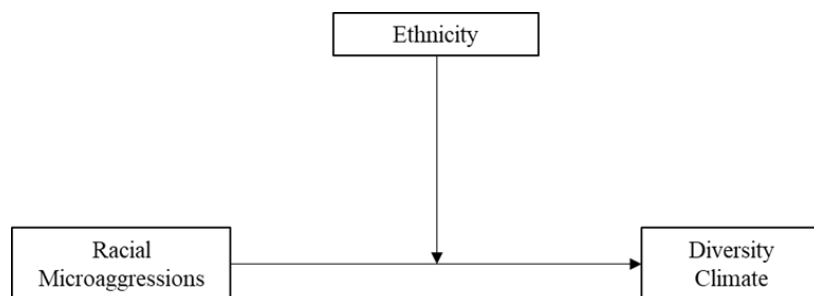


Figure 1: Conceptual model: Racial microaggressions and the interaction of ethnicity in predicting diversity climate

2. Problem Investigated

Diversity climate literature maintains that when an organisation is committed towards diversity and demonstrates that diversity is valued, employees, especially minorities will relate more to organisational efforts and would be reflected in the diversity climate (Hofhuis et al., 2012). The challenge within the South African context is that our labour market remains skewed, and individuals continue to report discrimination and prejudice (Statistics South Africa, 2019; Jaga et al., 2018)

Although diversity climate has seen new interest amongst researchers, diversity climate studies have been dominated by studies examining diversity climate consequences (McKay & Avery, 2015; Perry & Li, 2019). According to McKay and Avery (2015) researchers in the field of diversity climate have an opportunity to contribute towards diversity climate literature by examining non-traditional antecedents and how diversity climate operates in organisations. Furthermore, it is commonly known that an African environment requires more examination and understanding due to several subcultures, diverse ethnic groups, and challenges associated with these differences (George et al., 2016).

3. Research Objectives

The study will aim to contribute towards diversity climate knowledge by empirically testing racial microaggressions and ethnicity relations in order to predict diversity climate in a South African sample. Because of literature suggestions pertaining to the social identity theory, faultline theory, South African labour imbalances, continued reports of workplace discrimination and prejudice, the present study will also examine group perspectives on microaggressions and diversity climate. Therefore, the primary objective of the current study was to examine the moderating role of ethnicity in the relationship between racial microaggressions (RMAs) and Diversity climate. The secondary objectives were to examine the type and nature of the relationships between RMAs, diversity climate and ethnicity and to compare RMAs and diversity climate perspectives across ethnic groups.

4. Research questions

The following research questions were formulated in order to achieve the study objectives:

- What is the role of ethnicity in the relationship between RMAs and diversity climate?

- What is the type and nature of the relationship between RMAs, diversity climate and ethnicity?

5. Literature Review

To facilitate a better understanding of racial microaggressions and diversity climate, the following segment is devoted to reviewing literature pertaining to the variables under examination.

5.1. Diversity climate and ethnicity

Several researchers have aimed at defining a diversity climate. Consequently, the explanation from Hofhuis et al. (2012), and Perry and Li (2019) describes diversity climate in a more appropriate manner for the current study. According to Perry and Li (2019) a diversity climate refers to the “employees’ shared perceptions of the extent to which their organization values diversity as reflected in the policies, practices, and procedures that the organization rewards, supports, and expects” (p. 1). While Hofhuis et al. (2012), consider a diversity climate to be “the degree to which an organizational climate facilitates the presence of cultural differences, and views this diversity as a positive asset” (p. 969). Arguably, the perceptions of employees on how well an organisation is managing diversity would, to a large extent, rely on how well organisations are managing differences that distinguish employees (McKay & Avery, 2015). These differences may include gender, religion, sexual orientation, and ethnic differences. What is important to take into consideration for this study is that the majority of diversity climate views is pinned against the background of the fair treatment of employees (Dwertman et al., 2016).

Traditional antecedents of diversity climate may include inclusive human resource practices and policies (Boehm et al., 2014). However, ethnicity was a point of interest for the present study and how this relates to diversity climate. Previous examinations have found evidence that the composition of an organisation would have an impact on individual’s perspectives of the importance of diversity (Kosek & Zonia, 1993; Perry & Li, 2019). More specifically, Pugh et al., (2008) found evidence that the racial composition of an organisation would have an impact on the diversity climate observations of employees.

The challenge with managing diversity within organisations, and ultimately improving diversity climate, may be subject to group membership. The social identity theory is grounded on individuals being motivated to join and interact with individuals sharing common characteristics (gender, race and age) (Tajfel & Turner, 1986). The challenge for organisations in terms of the social identity theory and attempts to improve diversity climate, is that these individuals who form groups based on common interests or characteristics start to share perspectives amongst each other and could therefore create sub-climates (McKay & Avery, 2015).

The early focus on diversity climate research, was focused on sub-climate comparisons, mainly due to concerns raised with the social identity theory (Tajfel & Turner, 1986) and faultline theory (Lau & Murningham, 1998). The faultline theory proposes that individuals within groups are prone to developing sub-groups based on common demographic attributes. Sooner or later these individuals form strong allegiances with their sub-groups rather than the larger group (Lau & Murningham, 1998). Taking into consideration the social identity theory (Tajfel & Turner, 1986) and suggestions by the faultline theory (Lau & Murningham, 1998), researchers shifted their focus to the investigation of sub-climates. Initial research found that White employees reported higher positive observations of diversity climate when compared to their African colleagues (Mor Barak et al., 1998). Selected research has also found that females and minorities would report lower observations of diversity climate (Hicks-Clarke & Iles, 2000).

5.2. Racial microaggressions and its consequences

Microaggressions are considered “as deniable acts of racism that reinforce pathological stereotypes and inequitable social norms” (Williams, 2020, p. 4). Microaggressions are also considered as “subtle forms of discrimination, often unintentional and unconscious, which send negative and denigrating messages to various individuals and groups” (Nadal et al., 2015, p. 2). Microaggressions can also take

on several forms with several groups subjected to microaggressions, therefore racial microaggressions are subtle discriminations based on race or ethnicity.

Forms of microaggression may include exclusion or isolation, exoticisation and objectification, assumptions of monoracial or mistaken identity, denial of multiracial reality and pathologizing identity and experiences (Johnston & Nadal, 2010). Exclusion or isolation is considered a situation whereby a person may feel excluded based on their race, while exoticisation and objectification is when a person is dehumanised or treated like an object. Monoracial or mistaken identity occurs when a multiracial person is mistaken to be monoracial or from a different racial group. Denial of a multiracial reality is considered when a multiracial person's experiences are nullified by a monoracial person, while pathologising identity and experiences is when a person's identity or experiences are abnormal (Johnston & Nadal, 2010). For the purpose of this study, racial microaggression will be considered through the assessment of underestimation, isolation and assumption (Harrel, 1994). Previous research found these three variables to be an adequate indication of racial microaggressions (Torres et al., 2010). Racial microaggressions may hold several negative consequences for individuals (Williams, 2020). Personal consequences associated with racial microaggressions may include stress related concerns (Torres et al., 2010), anxiety, increased alcohol usage (Blume et al., 2012) and depression (Wong et al., 2014).

With regards to racial microaggressions and perspectives based on race, previous international examinations found evidence that multiracial individuals reported higher observations of microaggressions when compared to their White counterparts (Nadal et al., 2014). From a South African perspective, Jackson and van de Vijver (2018b) found in their study that White individuals self-reported higher opinions of subtle racism attitudes and tendencies. According to Jackson and van der Vijver (2018b), subtle racism was also associated with physical and psychological health.

5.3. The South African diversity context

Ideally, South African organisations should represent the demographical composition of the South African society. Unfortunately, recent labour statistics indicate slow progress in terms of redressing labour imbalances in post-apartheid South Africa. Certain demographical groups continue to dominate the South African labour environment (Statistics South Africa, 2019). Although advances have been made towards creating a prejudice free society as idealised in the South African constitution (1996) recent findings further indicate that discrimination remains part of the South African labour environment. A recent study found evidence that African women still experience gender and race discrimination in post-apartheid South Africa (Jaga et al., 2018). Reported discrimination is not restricted to only gender and race. A South African examination further reported that managers do not thoroughly understand disabilities within the workplace (Potgieter, Coetzee & Ximba, 2017). Individuals with disabilities reported that they have limited career advancing opportunities and that human resource practices discriminated against workers with disabilities. Discrimination against invisible disabilities also remains a reality (Potgieter et al., 2017). In terms of religion, South African Muslims reported that managers predominately from the apartheid era were less tolerant towards Muslims. In certain cases, Muslim employees reported that they would rather avoid conflict when not taken into consideration during work related gatherings (Carrim, 2017). With regards to sexual orientation, a South African study found that teachers would maintain heterosexism including microaggressions against the lesbian, gay, bisexual, transgender (LGBT) community (Francis & Reygan, 2016). According to Francis and Reygan (2016) "participants seemed to experience discomfort, disapproval and deep suspicion about LGBT identities (p. 192)".

6. Research Methodology

6.1. Research design and approach

A quantitative study with a cross-sectional design was considered as the most appropriate to achieve the study's objectives. The study was interested in obtaining opinions with regards to racial microaggressions and diversity climate at a single point in time.

6.2. Sampling, approach, and respondents

A non-probability convenience sample collected data from 230 respondents after an initial 820 questionnaires were distributed. The target organisations were based in the Gauteng Province and were in the financial and banking, retail, industrial and manufacturing sectors, respectively. Gatekeepers at organisations (heads of department, team leaders and human resource managers) were contacted to obtain permission to collect data. The anonymous nature of the study was emphasised on all questionnaires and informed consent documents. Questionnaires were delivered to one central point for distribution within the organisations and identified gatekeepers assisted with distribution. Completed questionnaires were collected at the same central point after the set time. Respondents were given 30 days to complete the questionnaire and to return the completed questionnaires at an agreed central point. A summary of the sample characteristics is depicted in Table 1.

Table 1: Sample characteristics

Biographical element	Percentage
Date of birth	
1945-1950	2%
1951-1960	4.4%
1961-1970	17.4%
1971-1980	18.4%
1981-1990	38.1%
1990 and onward	19.7%
Gender	
Male	52.9%
Female	47.1%
Qualifications	
Matric/Grade 12	17.9%
Post-matric qualification (diploma)	17.5%
University degree (BA, BCom, BSc etc.)	29.2%
Postgraduate degree	35.4%
Demographic/Ethnic group	
White	69.3%
Black	24.9%
Indian	2.7%
Coloured	1.9%
Other	1.1%
Employment status	
Permanent	82.6%
Temporary	17.4%
Level of employment	
Senior management	15.3%
Middle / Line management	45.1%
General worker	39.6%

Source: Own compilation

6.3. Measurements

The measuring instrument comprised three sections. The first section collected data on demographical variables of respondents, while the second and third sections collected data on racial microaggressions and diversity climate.

The racial microaggressions variable was determined with the Daily Life Experience Scale (DLE) which is a sub-scale from the Racism and Life Experiences Scale (RaLes) (Harrell, 1994). The fourteen-item scale makes use of a six-point Likert-scale and measures racial microaggressions through three sub-scales (underestimation, isolation and assumption) (Harrell, 1994). The DLE requests respondents to indicate the frequency at which they are exposed to racial microaggression where 1 = "never" and 6 = "once a week or more". A sample item would include: "Being observed or followed while in a public place". A higher score would be an indication that respondents are of the

opinion that they are exposed to racial microaggressions. The DLE previously recorded adequate reliability ($\alpha = 0.90$) (Torres et al., 2010).

The diversity climate variable was assessed through a diversity climate measuring instrument developed by McKay et al. (2007). The nine-item scale makes use of a five-point Likert-scale where 1 = “well below expectations and 5 = “well above expectations”. A sample item would include: “Top leaders visibly commit to diversity” (McKay et al., 2007). A higher recording would be an indication of a conducive diversity climate. The measuring instrument has previously reported adequate reliability ($\alpha = 0.91$) (McKay et al., 2007).

6.4. Statistical analysis

Data were cleaned, captured and analysed with Statistical Packages for Social Science (SPSS) and AMOS version 26 (IBM Corp, 2020). Statistical calculations included: reliability, descriptive, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), Pearson’s correlations and a moderation model with PROCESS (Model 1) (Hayes, 2017). Ethnicity was restricted to only the White and African groups due to a lack of data from the remaining ethnic groups. The ethnicity variable was further considered as a dichotomous variable where 1 = White group and 2 = African group. Moderation models, especially determined in PROCESS, make provision for dichotomous variables to be considered as a moderator (Hayes, 2017).

Cronbach’s alpha (α) and inter-item correlations (r) were computed to account for reliability. Adequate reliability was considered at $\alpha = 0.70$ (Nunnally & Bernstein, 1994) and $r = 0.30$ (Field, 2013) respectively. Harmon’s single factor technique was conducted in order to examine common method bias. The Harmon’s single factor technique makes use of an exploratory factor analysis (EFA) and loads items onto a single factor. Should the single factor explain more than 50% of the variance, common method bias has occurred (Eichorn, 2014)

An initial exploratory factor analysis (EFA) was conducted on each individual variable. Sample adequacy was determined by calculating Kaiser-Meyer-Olkin (KMO) scores. Sample adequacy was considered acceptable at values close to one (1) (Field, 2013). The extraction method was the principle component analysis and only factors with eigenvalues greater than 1.00 were selected (Field, 2013). The next phase was to conduct a CFA by constructing the conceptual model in AMOS with the variables, racial microaggressions, ethnicity and diversity climate. Root Mean Square Error of Approximation (RMSEA) and relative/normed chi-square (χ^2/df) (Wheaton et al., 1977) was considered as absolute fit indices, while the Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) was considered as incremental fit-indices. The Chi-square statistic (χ^2 -statistic) was not considered as an absolute fit-index as the χ^2 -statistic has demonstrated to be sensitive to sample size in previous studies (Vandenberg, 2006). Acceptable model fit was considered at: RMSEA < 0.08 (Van de Schoot, Lugtig & Hox, 2012), $\chi^2/df < 2.0$ (Tabachnick & Fidell, 2007) CFI and TLI > 0.90 (Hooper et al., 2008; Wang & Wang, 2012).

Pearson’s correlations were calculated in order to determine the type and nature of the relationships between racial microaggressions, ethnicity and diversity climate. With regards to correlations, relationships were firstly analysed for statistical significance ($p < 0.01$; two tailed) followed by practical significance. Practical significance was considered at 0.10 = small effect, 0.30 = medium effect and 0.50 = large effect (Cohen, 1988).

The moderation analysis was computed with PROCESS (Model 1) which was installed in SPSS (Hayes, 2017). Significance within the moderation model was considered at ($p < 0.05$). The interactions were further considered as significant if the Lower Level Confidence Interval (LLCI) and Upper Level Confidence Level (ULCI) did not include zero (0). Racial microaggression was considered as the independent variable, the dichotomous ethnicity variable as the moderator and diversity climate as the dependant variable. A scatterplot was also computed in order to illustrate any possible interaction. According to Masur (2018) a scatterplot is a convenient figure to plot the interactions when using a dichotomous variable as a moderator.

The final analysis was conducted to inspect Analysis of Variances (ANOVAs). ANOVAs were computed in order to examine ethnic (White and African) perspectives on racial microaggressions and diversity climate. Due to the sampling technique, results from the group comparisons should be interpreted with care. Results from ANOVAs were firstly analysed for statistical significance ($p < 0.05$) and secondly for practical differences. According to Cohen (1988), d -values can be interpreted as follows: $d = 0.2$ – small effect, no practically significant difference; $d = 0.5$ – medium effect, practically significant difference; $d = 0.8$ – large effect, practically significant difference.

6.5. Ethical consideration

The institution with which the study was registered awarded ethical clearance and was attributed with the project number: NWU-00602-20-A4. The measurements applied in this study did not require any personal information. Names of participating organisations also remained confidential in order to comply with ethical requirements. Participation in the study was voluntary and at no stage were incentives offered to any respondent to complete a questionnaire.

7. Results and Findings

The results and findings will be presented in four main sections. The first section will focus on validity of the results. The second section will cover descriptive, reliability and results obtained from the correlation analysis. The third section depicts the results and findings obtained from the moderation model. The fourth and final section will report on findings pertaining to group comparisons on RMAs and diversity climate.

7.1. Validity

The results collected from individual EFAs with assessments of scree plots and eigenvalues revealed that all measurement scales applied in this study could be considered one-dimensional. For the diversity climate, the single factor extracted explained 60.60% of the variance with an eigenvalue of 5.45 (KMO = 0.90). With regards to underestimation, the first factor extracted explained 66.22% of the variance with an eigenvalue 3.97 (KMO = 0.87). The first factor extracted for isolation explained 62.57% of the variance with an eigenvalue of 2.50 (KMO = 0.73). With regards to assumption, the first factor extracted explained 65.14% of the variance with an eigenvalue of 2.60 (KMO = 0.79). A CFA model, which factored in racial microaggressions (as measured with underestimation, isolation and assumption), ethnicity and diversity climate, was constructed in AMOS in order to confirm the factors that resulted from the EFA. Results from the CFA calculations demonstrated adequate model fit (RMSEA = 0.06; $\chi^2/df = 1.92$; CFI = 0.93; TLI = 0.92). The results obtained from the EFA and CFA computations therefore confirm the validity of the variables under investigation.

7.2. Descriptive, reliability and Pearson's correlation results

The results from the descriptive, reliability and correlation calculations is depicted in Table 2. According to the information presented in Table 2, all of the variables under examination demonstrated adequate internal consistency. Based on the results obtained from the reliability and validity computations, the scales were considered valid and reliable. With regards to the central tendencies, the scores for the racial microaggressions variables were within the scale's "never" section, which is an indication that respondents did not really experience racial microaggression or any of its indicators (underestimation, isolation and assumption). The diversity climate score was within the scale's positive range, which was an indication that the sample considered their organisation diversity climate as conducive. With regards to common method bias, the Hermon's single factor technique applied, revealed the first single factor extracted only explained 28.68% of the variance. Subsequently, concerns with common method bias were dismissed.

In terms of the Pearson's correlation results, Table 2 indicates that ethnicity was statistically significant associated with microaggressions ($r = 0.19$; $p < 0.05$; small effect), isolation ($r = 0.17$; $p < 0.05$; small effect) and assumption ($r = 0.21$; $p < 0.05$; small effect). The relationship between ethnicity and diversity climate did not yield a significant result. The relationship between diversity climate and microaggression also did not yield a significant result, however there was an inverse relationship between diversity climate and underestimation ($r = -0.18$; $p < 0.05$; small effect).

Table 2: Descriptive, reliability and correlation results

	Variable	Mean (SD)	α	1	2	3	4	5	6
1	Ethnicity	1.34(0.47)	-	1					
2	Racial microaggressions	2.18(0.94)	0.90	0.19*	1				
3	Underestimation	2.45(1.22)	0.89	0.09	0.82**	1			
4	Isolation	2.01(1.06)	0.80	0.17*	0.83**	0.51**	1		
5	Assumption	2.07(1.14)	0.82	0.21*	0.84**	0.53**	0.67**	1	
6	Diversity climate	3.39(0.78)	0.92	-0.03	-0.10	-0.18*	-0.05	-0.02	1

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)
Results were interpreted as: 0.1= small effect; 0.3 = medium effect; and 0.5 = large effect (Cohen, 1988).

Source: Own compilation

7.3. Moderation analysis

The study suggested that ethnicity, considered as a dichotomous variable, would moderate the relationship between racial microaggressions and diversity climate. All variables were considered mean-centred. The results from the moderation analysis, as indicated in Table 3, revealed a significant result ($F = 2.98, p = 0.03, R^2 = 0.04$). Although the tested moderation model only explained 4% of the prediction of diversity climate, ethnicity had an overall significant negative effect when predicting diversity climate ($b = -0.74; p = 0.01; LLCI = -1.28; ULCI = -0.19$). Racial microaggressions (RMA) also had a negative effect on diversity climate ($b = -0.50; p < 0.01; LLCI = -0.84; ULCI = -0.16$) as indicated in Table 4. Moreover, according to Table 6, racial microaggressions was negatively connected to diversity climate at the White (1) level ($b = -0.20; p = 0.01; LLCI = -0.35; ULCI = -0.05$). The impact of racial microaggressions on diversity climate at the African (2) level did not yield a significant result ($b = 0.10, p = 0.22, LLCI = -0.06; ULCI = 0.26$). Therefore, only the interaction between racial microaggressions and ethnicity at the White level could be considered as significant, as the LLCI and ULCI did not include zero. The interactive effect between racial microaggressions and ethnicity demonstrated a positive result when predicting diversity climate ($b = 0.30; p = 0.01; LLCI = 0.08; ULCI = 0.52$) as indicated in Table 4. The change in R-square resulting from the interaction was also significant ($F = 7.10; \Delta R^2 = 0.03; p = 0.01$) as indicated in Table 5.

Table 3: Interactive effect between racial microaggression and ethnicity in predicting diversity climate (model summary)

R	R ²	MSE	F	df1	df2	p
0.19	0.04	0.60	2.98	3.00	226.00	0.03*

*Note $p < 0.05$.
R, R-value; R², R-squared; MSE, Mean Square error; F, F-value, df1, degrees of freedom 1; df2, degrees of freedom 2; p, Statistical significance.

Source: Own compilation

Table 4: Interactive effect between racial microaggression (RMA) and ethnicity in predicting diversity climate (model)

Variables	Effect	SE	t	p	LLCI	ULCI
RMA	-0.50	0.17	-2.88	0.00*	-0.84	-0.16
Ethnicity	-0.74	0.28	-2.66	0.01*	-1.28	-0.19
RMA x Ethnicity	0.30	0.11	2.67	0.01*	0.08	0.52

*Note $p < 0.05$.
SE, Standard Error; t, t-value; p, Statistical significance; LLCI, Lower Level Confidence Interval; ULCI, Upper Level Confidence Interval.

Source: Own compilation

Table 5: Interactive effect between racial microaggression (RMA) and ethnicity in predicting diversity climate (change in R² resulting from interaction)

Variable	ΔR^2	F	df1	df2	p
MA x Ethnicity	0.03	7.10	1.00	226.00	0.01*

*Note $p < 0.05$.
R², R-squared value; F, F-value; df1, degrees of freedom 1; df2, degrees of freedom 2; p, Statistical significance.

Source: Own compilation

Table 6: Interactive effect between racial microaggression (RMA) and ethnicity in predicting diversity climate (conditional effect of racial microaggressions on diversity climate at the values of ethnicity)

Ethnicity	Effect	SE	<i>t</i>	<i>p</i>	LLCI	ULCI
White (1)	-0.20	0.08	-2.60	0.01*	-0.35	-0.05
African (2)	0.10	0.08	1.22	0.22	-0.06	0.26

*Note $p < 0.05$.
 SE, Standard Error; *t*, *t*-value; *p*, Statistical significance; LLCI, Lower Level Confidence Interval; ULCI, Upper Level Confidence Interval.

Source: Own compilation

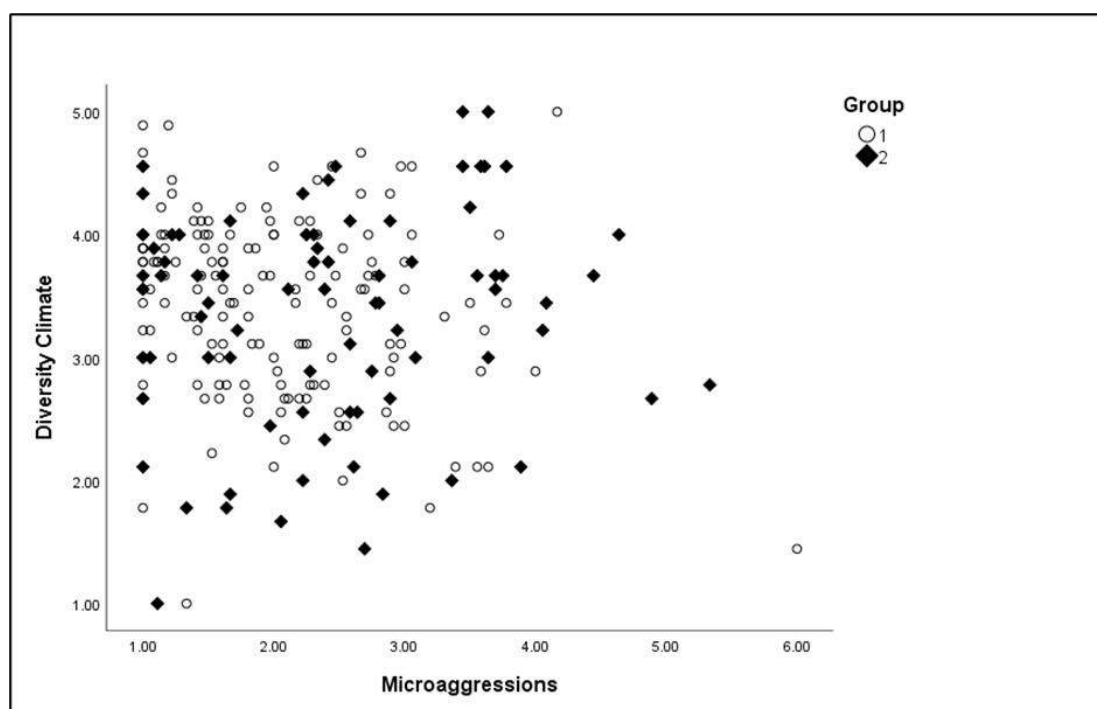


Figure 2: Interactive effect between racial microaggressions and ethnicity predicting diversity climate

Group 1 = White; Group 2 = African

7.4. Group comparisons

The final section will focus on comparing observations for all variables under investigation between the White and African groups. Table 7 below contains the ANOVA results obtained from the computations. According to Table 7, statistically significant differences were present when comparing means between the White and African groups for racial microaggressions ($p < 0.01$; $d = 0.45$; medium effect), underestimation ($p < 0.01$; $d = 0.20$; small effect) and isolation ($p < 0.01$; $d = 0.42$; medium effect). Although not statistically different, the assumption variable yielded a medium practical difference ($p = 0.19$; $d = 0.55$). In all these cases, the African group reported higher observations of racial microaggressions, including for underestimation, isolation and assumption. The comparison between White and African groups for diversity climate did not yield a significant result.

Table 7: Ethnic comparisons, racial microaggressions (RMA) and diversity climate

	White		African		P-value	Cohen's d-value	Effect
	Mean	SD	Mean	SD			
RMA	2.03	0.83	2.46	1.07	0.00*	0.45	Medium
Underestimation	2.36	1.20	2.60	1.24	0.00*	0.20	Small
Isolation	1.86	0.94	2.30	1.18	0.00*	0.42	Medium
Assumption	1.86	0.94	2.50	1.37	0.19	0.55	Medium
Diversity Climate	3.41	0.72	3.33	0.89	0.43	0.10	Small

Note: $p < .05^*$ is significant
d-values were interpreted as: $d = 0.2$ – small effect, no practically significant difference; $d = 0.5$ – medium effect, practically visible difference; $d = 0.8$ – large effect, practically significant difference (Cohen, 1988).

Source: Own compilation

6. Discussion

The primary objective of the study was to examine the interaction between racial microaggressions and ethnicity in predicting diversity climate. The study further aimed at assessing ethnic (White and African) views on racial microaggressions and diversity climate.

Literature suggests that the ethnic composition of an organisation would have an impact on the diversity related perceptions formed amongst employees (Kosek & Zonia, 1993; Pugh et al., 2008). Literature further indicates that prejudices and discriminations might also impact diversity climate (Cox, 1994). However, diversity climate examinations in a unique diverse environment such as South Africa is silent on what effect racial microaggressions and ethnicity would have on predicting diversity climate. The present study found evidence to suggest that ethnicity can be considered as a significant moderator for racial microaggressions when predicting diversity climate.

The study further found evidence that racial microaggressions had an inverse direct relationship with diversity climate. This result implies that a reduction in racial microaggressions would impact positively on diversity climate. Taking into consideration the direction of the measurements applied in this study, this result means that when racial microaggressions decrease there would an improvement of the diversity climate. This result should be considered as positive for the participating organisations. Climates for diversity that have been considered as toxic demonstrate signs of prejudice, stereotyping, cultural differences and even ethnocentrism (Cox, 1994). Furthermore, results from the present study indicate a significant interaction between racial microaggressions and ethnicity, when predicting a diversity climate. This result confirms that diverse groups have advantages over homogeneous groups (Roberson, 2019) and in the case of this study the advantage was a conducive diversity climate.

Finally, the study found evidence that African employees reported higher observations of racial microaggressions, opinions of isolation and assumption when compared to their White colleagues. These findings are consistent with previous international and South African studies (Nadal et al., 2014; Jackson & van de Vijver, 2018b). These results further indicate that previously reported discrimination and prejudice remains part of South African organisations. A positive finding indicated no statistical differences when comparing diversity climate observations between the White and African groups. This should be considered as an indication that employees are recognising and valuing the efforts made by their respective organisations in terms of diversity. The specific result should be considered as a positive result for South African organisations, as previous international diversity climate examinations reported substantial racial differences with regards to diversity climate observations (Mor Barak et al., 1998).

6.1. Managerial implications

Organisations who wish to create conducive diversity climates cannot merely rely on traditional diversity climate antecedents, for example human resource policies and practices (Boehm et al., 2014). Literature suggests that diverse composition also impacts on diversity climate and therefore organisations should strive to create a diverse work group as this will assist in improving the overall diversity climate. For this research, the interaction between ethnicity and racial microaggressions

predicted diversity climate. Diversity climate holds several individual and organisational benefits (Cox, 1994). Therefore, organisations should take note of the situations and environments that can influence a diversity climate including the diversification of organisations.

Organisations who further wish to improve diversity climate and benefit from the advantages associated with a conducive diversity climate, should also carefully align policies and practices with relevant legislation. According to Peterson (2008) the foundation of diversity management is the affirmative action legislation developed to govern diversity management. In the South African context, legislation was developed and implemented to improve representation, stimulate diversification and eliminate unfair discrimination and prejudice. The specific legislation that should be considered includes but is not limited to the Constitution (1996), Labour Relations Act 66 of 1995, Basic Conditions of Employment Act 75 of 1997, Employment Equity Act 55 of 1998 and the Broad-Based African Economic Empowerment Act 53 of 2003. Although legislation was developed to eliminate discrimination in South Africa and stimulate diversification, certain race groups might still experience forms of subtle discrimination. Organisations who wish to improve their diversity climate should develop, align and implement relevant policies and practices to eliminate racial microaggressions, more specifically eliminating opinions of isolation and assumption.

The present study found evidence that African respondents reported higher observations of isolation and assumption. African respondents were of the opinion that they are more excluded, avoided or treated differently when compared to their White colleagues. The results further indicate African respondents reported higher recordings of assumptions. This would translate to situations where African respondents are of the opinion that there are more offensive comments and insults directed at Africans in addition to being mistaken for someone who serves others when compared to the opinions of their White colleagues (Harrel, 1994). In this regard, to combat microaggressions, organisations could perhaps develop, adopt and invest in educating employees in line with the recent developed micro-intervention strategies as proposed by Sue et al. (2019). In majority of cases, perpetrators are not even aware that they are committing a microaggression and therefore the victim should perhaps remind the perpetrator that they are committing a microaggression (make the invisible visible). Victims could also deflect the microaggression by “showing disagreement, challenging what was said or done and/or pointing out its harmful impact” (disarm the microaggression) (Sue et al., 2019, p. 138). Victims could in such cases enter into discussion and educate the committer of the harm and how to improve his/her actions or behaviours (educate the perpetrator). When individual efforts to disarm a microaggression does not succeed, a victim should seek advice and support (seek external reinforcement or support) (Sue et al., 2019). Managers can consider awareness campaigns, identifying RMAs within their organisations and developing communication and education mechanisms to disarm microaggressions.

6.2. Limitations and recommended future research

The quantitative approach and cross-sectional study does not allow to determine causal effects of racial microaggressions, ethnicity and diversity climate, and a longitudinal study would be able to address this limitation. Although some results in the present study are concerning, recent research in the field of microaggressions have advised researchers and practitioners to look beyond the quantitative results (Fattoracci et al., 2020). This is especially due to intersectional implications and that not all marginalised groups may experience microaggressions in a similar way. What is required is a qualitative assessment in order for researchers and practitioners to understand why certain groups experience or report more racial microaggressions compared to other groups (Fattoracci et al., 2020).

The convenience sampling method further restricts conclusions to the sample group and results can therefore not be generalised. The ethnic variable was only represented by the White and African groups. A sample representing all race groups from South Africa should provide more clarity on how racial microaggressions and ethnicity interact when predicting a diversity climate. Distinguishing differences amongst individuals in organisations is not only restricted to race. Future research should also consider examining gender, religion and any other factor that might distinguish individuals and how these factors would impact on diversity climate. Additionally, the study was conducted in only

one of South Africa's provinces. Future examinations should extend data collection in order to obtain opinions from a wider South African audience.

7. Conclusion

The improvement of diversity climate cannot merely rely on the elimination of subtle discrimination behaviours. Careful attention should also be directed to the ethnic composition and diversification within organisations. While several advances have been made towards creating a prejudice-free society, individuals may still report forms of racial microaggressions. However, individuals are recognising the efforts organisations are introducing towards diversity climate by both the White and African ethnic groups. It is recommended that organisations develop policies and practices to improve diversity climate, while at the same time equipping managers with communication and education mechanisms to disarm RMAs.

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Supervisor Support, Engagement, Satisfaction of Self-Determination Needs and Well-Being: A Contract Research Sector Perspective

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Keywords

Engagement; The satisfaction of self-determination; Supervisor support; Managerial support; Emotional exhaustion and Turnover intentions

Abstract

The study sought to explore employee engagement, the satisfaction of self-determination needs, employee engagement, managerial support, emotional exhaustion, and intentions to leave in the South African contract research sector (CRO). The CRO is a demanding industry, and organizations must retain knowledgeable and experienced individuals. The quantitative, cross-sectional study collected 260 responses from a convenience sample ($n=260$). The statistical analysis included descriptive statistics, a confirmatory factor analysis, reliability statistics, correlation coefficients and Cohen's d effect sizes to compare observations across groups. Results show data to be valid and reliable. The correlation results show that satisfaction with self-determination needs is positively associated with employee engagement, supervisor support, and negative emotional exhaustion and turnover intentions. The study highlights the importance of satisfaction of self-determination needs and managerial support in the demanding CRO industry, primarily due to favourable work engagement levels and lower indications of emotional exhaustion and turnover intentions. The study offers valuable knowledge towards attraction and retention of staff with empirical evidence that satisfaction of self-determination needs, managerial support and employee engagement will benefit employee well-being.

1. Introduction

Contract research organizations (CROs) have recently become more popular due to being more cost-effective and efficient, contributing to more profitable pharmaceutical organizations in developing countries such as South Africa (Adobor, 2012; Gad et al., 2020). CROs are specifically established to provide research and conduct trials while at the same time attempting to be profitable. Furthermore, CROs are precisely positioned to deliver these services as cost-effective as possible. Therefore, CROs can offer their clients a cost-effective method to enhance products for an organization in the pharmaceutical, biotechnology, and medical devices industry.

To meet the demands of pharmaceutical companies, CROs have to recruit and retain highly competent and skilled individuals to remain competitive and efficient (Adobor, 2012). These skilled individuals who can gather, analyse, and interpret complex information are in high demand, especially those who have knowledge and experience of the local language, culture, and standards (Adobor, 2012). These skilled and experienced staff are valuable in creating a competitive advantage for CROs through innovative product development (Buvailo, 2020). Unfortunately, there has been an increase in employee turnover and a demand for scarcer talent, especially in organizations that require high-performing individuals who considerably contribute to strategic organizational objectives (McShane & Von Glinow, 2018). Talent scarcity and increased expenses to retain experienced talent are common problems in developing countries such as South Africa (Rothmann et al., 2013).

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Demanding organizations such as CROs require experienced and productive talent, which should also be retained. The solution might be found in stimulating, supportive managerial and supervisor relations (Gordon et al., 2019). In short, managerial support is considered a manager's behaviour that develops subordinates' outlooks on personal development (Allen et al., 2003). Studies indicate that supportive practices can improve observed organizational support, which reduces turnover intentions (Allen et al., 2003; Rigby & Ryan, 2018). Additionally, environments characterized by supportive human resource practices also tend to make employees feel more valuable (Allen et al., 2003). Moreover, research indicates supervisor support is associated with positive engagement (Rigby & Ryan, 2018).

Work engagement and employee engagement are terms used interchangeably (Schaufeli et al., 2019) and are considered an employee's association with their occupation (Schaufeli et al., 2006). Besides employee engagement being associated with enhanced productivity (Cattueuw et al., 2007), literature has also shown that employee engagement is beneficial towards employee well-being (Shuck & Reio, 2014). Research from non-related industries has confirmed the importance of employee well-being, especially in reducing turnover intentions (Grant et al., 2019) and emotional exhaustion (Jeon et al., 2018). An employee's intentions to quit, also known as turnover intentions, is considered an employee's intention to purposefully find a new position with another organization (Lambert et al., 2001). In addition, emotional exhaustion refers to an individual that displays feelings of "being overextended and depleted of one's emotional and physical resources" (Maslach et al., 2001, p. 399). Both emotional exhaustion and intentions to leave have been proven as detrimental to the performance of individuals and organizations in CRO industries (Halbesleben & Bowler, 2007; Haque, 2020). Findings from non-related sectors on the negative role of emotional exhaustion and turnover intentions towards organizational and individual performance might be detrimental, primarily due to the high demand on individuals in the CRO environment. At this stage, a critical question arises? Besides a supportive supervisor and employee engagement, what is required to enhance employee well-being in a CRO environment? The answer might be found in motivation, more specifically in the field of satisfaction of self-determination needs.

The self-determination theory (SDT) is considered a "macro" theory of motivation. The SDT proposes that both "employees' performance and their well-being are affected by the type of motivation they have for their job activities" (Deci et al., 2017). The SDT depicts that individual health and wellness are enforced by an employee's ability to satisfy a natural need for autonomy, competence, and relatedness (Deci et al., 2017). The satisfaction of self-determination needs is imperative for organizations such as CROs which require high-performing, motivated individuals. The literature indicates that the satisfaction of self-determination needs is associated with and will enhance well-being and work performance (Deci et al., 2017). Equally, the opposite is also accurate, and organizations should attempt to create and sustain an environment that encourages satisfaction of one's self-determination needs (Deci & Ryan, 2000).

From an SDT perspective, managerial or supervisor support has been found to impact employee well-being, more specifically, emotional exhaustion and intention to leave (Deci & Ryan, 2008). This is an individual personal motivational observation for the present study, as it has been said that employees leave managers and not organizations (McCrae, 2020). Therefore, it would be imperative for CROs to retain highly motivated managers to enhance a reduction in emotional exhaustion turnover intentions. Besides, individual attitudes and behaviours have also been considered significant contributors to organizational performance (Wright & Haggerty, 2005).

The satisfaction of self-determination needs, supervisor support, engagement, emotional exhaustion, and turnover intentions are critical organizational behaviour concepts for CROs. Literature affirms that these essential variables are related, yet no significant exploratory studies amongst CROs could be found in an emerging and challenging economy such as South Africa. The study aimed at exploring this research problem.

1.1 Problem Investigated

South African managers are faced with challenges in attracting and retaining strategic talent, particularly in the South African pharmaceutical industry (Rothmann et al., 2013). Contributing to this managerial dilemma is a declining South African economy that deteriorated to a growth percentage of only 0.2% per annum in 2019 (Loewald et al., 2020). This decline was said to considerably contribute to a skill shortage (Shikweni et al., 2019). Skills shortage and constant change in crucial staff might be detrimental to a demanding CRO industry (Gad et al., 2020). Alarming research further indicates that highly competent staff recruitment and retention will be even more difficult in a struggling African economy (Pride & Tatenda, 2017).

An environment characterized by a drive for profits is known for regularly prioritizing the customer's demands and such environments are usually at the deprivation of employee well-being (McShane & Von Glinow, 2018). Regrettably, this also applies to the CRO environment. Teams in the CRO industry comprise skilled employees who are placed in low-cost sites, incorporated into faceless, worldwide business units, and expected to meet the demands of their clients (Adobor, 2012). Many businesses attempt to avoid high staff turnover as this is costly and can result in a loss of organizational knowledge and escalated replacement costs (McShane & Von Glinow, 2018). Indeed, a situation that CROs should manage and avoid in order to protect both knowledge, experience, and resources.

CROs have seen tremendous growth in recent years and are rapidly expanding and investing in emerging markets (R. Kumar & Paul, 2019). Unfortunately, a careful review of CRO literature reveals a lack of thorough examinations, especially amongst CROs in emerging markets. Therefore, the current study identified a research opportunity in the South African CRO industry and would contribute to the body of knowledge on CRO functions and operations.

One should keep in mind that, like other organizations, the South African CRO workforces are also widely diverse. Organizations in environments experiencing growth and development, such as CROs (R. Kumar & Paul, 2019), will also experience increased diversity. Organizations will experience a diverse range of organizational behaviours (Stone-Romero et al., 2003). As the present study is within the domain of organizational behaviour, the importance of the variables under investigation and that the South African environment is rich in diversity will be wise to examine observations across several demographical groups. This will give the organizations under investigation an accurate and valuable assessment of all observations at a single point in time and assist with future interventions (Spector, 2019).

1.2 Research Objectives

The SDT theory implies that self-determination needs are positively associated with employee engagement and supervisor support, while adversely related to emotional exhaustion and turnover intentions. Examining employee perspectives of engagement, supervisor support, emotional exhaustion, and turnover intentions (well-being) in the CRO industry is anticipated to enhance human behaviour knowledge in demanding organizations. In addition, a CRO perspective from an emerging and struggling economy such as South Africa on the satisfaction of self-determination needs, engagement, supervisor support, emotional exhaustion, and turnover intentions would further contribute to the organizational behaviour body of knowledge.

To resolve this research question, the study considered the following objectives:

- Empirically examine perspectives from the South African CRO sample on the satisfaction of self-determination needs, employee engagement, supervisor support, emotional exhaustion, and turnover intentions.
- Determine the type and nature of the relationships between the variables under investigation; and,

- Study and compare group observations (per demographical data) on the satisfaction of self-determination needs, employee engagement, supervisor support, emotional exhaustion, and turnover intentions.

2. Literature Review

The objective of the literature view is to understand the critical variables under investigation which will be briefly discussed in the sections to follow.

2.1 Satisfaction with self-determination needs

The SDT is regarded as one of the more comprehensive theories on motivation and satisfaction of basic psychological needs (Van den Broeck et al., 2016). The SDT distinguishes the objective contents and monitoring behaviour of goal pursuit by characterizing an individual's psychological needs to satisfy these needs. Research indicates that psychological needs of autonomy, competence, and relatedness are considered significant predictors of psychological development, integrity, and well-being (Deci et al., 2017). Moreover, the satisfaction of these shared needs is associated with effective functioning, ideal development, and well-being (Deci & Ryan, 2000). With the understanding that the SDT is pinned against human motivation, the view offers a theoretical opportunity to evaluate motivational aspects within an organizational environment (Deci et al., 2017).

Individuals within organizations need to experience a sense of autonomy (independence), and competence (capability) (Deci & Ryan, 2000). When an individual's environment is favourable for the satisfaction of psychological needs of autonomy, competence, and relatedness, the individual's intrinsic activity, and natural growth processes, which include motivation, are satisfied; one should experience positive psychological and behavioural outcomes. When the needs of the individuals are realistically satisfied, individuals participate in activities they find stimulating (intrinsic motivation) or significant (extrinsic motivation) (Meyer & Gagnè, 2008). One should keep in mind that the opposite is also a reality. Failure to satisfy the satisfaction of self-determination needs does lead to unfavourable employee well-being and even follow protective adaptations (Deci et al., 2017).

The satisfaction of self-determination needs has been associated with several individuals and beneficial organizational outputs, making the topic an essential managerial concept. Other outputs include reduced levels of turnover intentions (Eisenberger et al., 2002), lower indications of emotional exhaustion (Williams et al., 2014) individual performance and engagement (Alfes et al., 2013). More importantly, the satisfaction of self-determination needs has also been positively associated with a supportive manager or supervisor (Williams et al., 2014), which in return would improve related organizational performance (Manganelli et al., 2018).

2.2 Supervisor support

Supervisor support or managerial support is an essential contributor to both organizational and individual performance. Competence from an employee's perspective supported by the SDT can be considered an evaluation of an individual's interpretation of their ability or skill under autonomy-supportive and controlling situations (Williams & Deci, 1996). Moreover, managerial support includes the extent to which employees deem their supervisors to value their efforts, offer support, and demonstrate genuine concern about their well-being (Eisenberger et al., 2002). Supportive managerial features have been associated with environments that demonstrate supporting and enabling basic needs satisfaction and include enhanced motivation, leading to performance (Rigby & Ryan, 2018).

It is said that managerial support is such an important managerial function that those organizations that can enhance managerial support can reduce pressures experienced by frontline staff (Yue et al., 2017), quality of life (Baker & Kim, 2020), enhance job satisfaction, engagement, and reduced observations of turnover intentions (Kumar et al., 2018). It is especially employees from highly demanding professions to benefit the most from managers and supervisors who can sustain supportive environments (Kumar et al., 2018). Therefore, supervisor support would be advantageous for both the organization in the contract research industry and eventually the employee. From a non-related South

African perspective, scholars have found evidence to confirm the importance of supervisor support, especially from an SDT perspective. Results from the South African agricultural sector confirmed that manager relations characterized by supportive, trusting, and non-controlling behaviour are associated with positive organizational outcomes and lower turnover intentions (Rothmann et al., 2013).

2.3 Work engagement

Early research in the field of engagement described engagement as "harnessing of organization members' selves to their work roles: in engagement, people employ and express themselves physically, cognitively, emotionally, and mentally during role performances" (Kahn, 1990, p. 694). Academic authors consider work engagement and employee engagement as interchangeable concepts (W. B. Schaufeli et al., 2019). To conceptualize and operationalize work engagement, scholars focused their attention on characteristics that might best describe an employee who is considered to be engaged in their work. In this regard, the widely used conceptualization developed by Schaufeli et al. (2002) considered engagement as a psychological state characterized by vigour, dedication and absorption and was considered the framework to guide the present study's view on engagement.

Given the current study, work engagement is considered an essential antecedent for employee well-being (Bakker et al., 2008; Maslach et al., 2001; Schaufeli et al., 2001). On the opposite side of well-being, is burnout which in essence is considered the unwell-being end of the engagement (Maslach & Leiter, 2016). Burnout is detrimental to the functioning of any organization. Considered a state of mental exhaustion, burnout is descriptively considered a three-dimensional concept that encompasses "emotional exhaustion, cynicism and lack of professional efficacy with feelings of insufficiency and poor job-related self-esteem or a lack of personal accomplishment" (Maslach et al., 2001, p. 399). Previous South African examinations confirmed the importance of engagement, with results demonstrating a significant impact on burnout and turnover intentions (Du Plooy & Roodt, 2010).

2.4 Emotional exhaustion and intentions to leave

As part of a more multifaceted process, emotional exhaustion is central to burnout. Emotional exhaustion is considered "actions to distance oneself emotionally and cognitively from one's work" (Maslach et al., 2001, p. 403). Moreover, emotional exhaustion is considered as a real and persistent work-related pressure that reveals itself in employees who demonstrate lower concern for their responsibility, trust, and interest (Maslach & Leiter, 2016). Conceptualized as the first stage of burnout, emotional exhaustion provides a critical point for intervention and is widely considered an additional indicator of the working life in task-fatiguing conditions (Lee et al., 2020; Maslach & Leiter, 2016). Concerning the present study, previous examinations found that increased job demands are associated with higher reflections of emotional exhaustion, which in return can lead to increased turnover intentions (Azharudeen & Arulrajah, 2018). Turnover intentions or intentions to leave are considered one of the final steps in the organizational withdrawal process. The literature describes the intention to leave as the subjective estimation of an individual regarding the probability of permanently leaving an organization soon (Cho et al., 2009; Vandenberg & Nelson, 1999).

3. Research Methodology

The following section briefly highlights the methodology applied in the study.

3.1 Research method and design

The study made use of a quantitative method with a cross-sectional design. The method and design were considered the most appropriate to answer the study's research questions. No interventions were planned. The study applied for ethical clearance from the Ethics Committee of the North-West University (Potchefstroom Campus), South Africa. The study was assessed and accepted (EMS15/03/31-1/09). Once ethical clearance was obtained, permission was obtained from participating CROs with an information letter explaining the purpose and anonymous nature of the study. An informed consent letter based on sound clinical practice, was distributed with the questionnaires at the participating CRO offices. Questionnaires were distributed and collected in person with the assistance of a field worker. Participants were given seven (7) days to participate in the study.

3.2 Participants and sampling

A non-probability convenience sample targeted office-based employees from the contract research sector in South Africa. A total of 260 completed questionnaires were returned from the initial 311 distributed questionnaires, resulting in an 83.6% response rate. The sample consisted of 38% males and 62% females. Regarding age, 15% of respondents were between 18-25 years old, 50% were between 26 and 35 years, 25% between 36 and 45 years old, and only 3% indicated they were older than 56 years. In terms of education, 25% of respondents indicated they had a Matric or equivalent qualification, 37% a diploma, 20% a degree, and 17% indicated they had a postgraduate degree. The sample group was dominated by staff who worked for their organization between 3 to 5 years (35%), followed by six months to 2 years (28%), and finally 6 to 10 years' service (24%).

3.3 Measurements

The measuring instrument comprises a section collecting biographical information and responses from previously validated instruments on supervisor support, the satisfaction of self-determination needs, employee engagement, emotional exhaustion, and turnover intentions.

Supervisor support

The supervisor support variable was considered with a combination of the Supportive Supervisor Relations Scale (SSRS) (May et al., 2004) and modified statements from the Perceived Competence Scale (PCS) (Smith et al., 1995). The 10-item SSRS evaluates managerial support (6 items) and trust (4 items). A sample item includes: "Employees are treated fairly by my supervisor". The 4-item PCS is directed towards evaluating supervisor confidence, capability, ability, and achieving goals. Both scales used a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Both the SSRS and PCS previously reported adequate reliability (SSRS: $\alpha = 0.71$; $\alpha = 0.91$) (May et al., 2004) and (PCS: $\alpha = 0.82$ to $\alpha = 0.90$) (Smith et al., 1995).

Satisfaction with self-determination needs

The satisfaction of self-determination needs variable was assessed with the Work-related Basic Need Satisfaction Scale (WBNSS) (Van den Broeck et al., 2010). The scale comprised statements on autonomy (5 items), competence (6 items); and relatedness (6 items). A sample item includes: "I do not feel competent in my job" (Van den Broeck et al., 2010). The statements were evaluated on a 5-point Likert response scale ranging from 1 (strongly disagree) to 5 (strongly agree). Previous research found the WBNSS demonstrated adequate reliability in the three subscales of autonomy ($\alpha = 0.81$), competence ($\alpha = 0.85$), and relatedness ($\alpha = 0.82$) (Van den Broeck et al., 2010).

Work engagement

The work engagement variable was assessed with the Utrecht Work Engagement Scale (UWES) (Schaufeli & Bakker, 2004). The 17-item scale is a combination of three subscales, i.e., vigour (6 items), dedication (5 items); and absorption (6 items). A sample item includes: "I am enthusiastic about my job" (Schaufeli & Bakker, 2004). A South African sample demonstrated adequate reliability for the UWES with reliability scores ranging from $\alpha = 0.78$ to $\alpha = 0.78$ (Storm & Rothmann, 2003).

Emotional exhaustion

The emotional exhaustion variable was assessed using the emotional exhaustion subscale of the Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1981). The 9-item scale evaluates emotional exhaustion on a 7-point scale varying from 0 (never) to 6 (every day). A sample item includes: "Working with people directly puts too much". Previous studies have reported a reliability score of $\alpha = 0.86$ for the emotional exhaustion variable (Schaufeli et al., 2001).

Turnover intentions (Intention to leave)

The turnover intentions variable was assessed with the Turnover Intention Scale (TIS) (Sjöberg & Sverke, 2000). The 3-item scale evaluates statements on a 5-point Likert scale varying from 1 (strongly disagree) to 5 (strongly agree). A sample item includes: "I feel that I could leave this job". A

South African application of the TIS reported adequate internal reliability ($\alpha = 0.83$) (Rothmann, 2013).

3.4 Statistical analysis

Data was captured and cleaned with Microsoft Excel and analysed with lavaan (Rosseel, 2018), installed in R (R Core Team, 2020). Internal consistency was determined by computing Cronbach's alpha scores with a set threshold of $\alpha = 0.70$ (Pallant, 2013). Confirmatory factor analysis (CFA) was conducted to assess the validity of the measures utilized in the study. The chi-square (χ^2) (test of absolute fit of the model), Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMR) were assessed on how well the theory fits the data. Values lower than 0.08 for RMSEA and lower than 0.08, for SRMR are deemed an acceptable indication of the fit. (Hooper et al., 2008). The relative fit was assessed by examining the comparative fit index (CFI) and the Tucker-Lewis Index (TLI). Both the CFI and TLI should be above 0.90 (Wang & Wang, 2012).

With regard to descriptive statistics, means and standard deviations were calculated to determine central tendencies. In terms of inferential statistics, correlation coefficients were calculated to evaluate the type and nature of the relationships between the variables under investigation. Correlations were firstly analysed for statistical significance ($p < 0.01$) and after that for practical effect. Values of ± 0.1 represent a small effect, ± 0.3 a medium effect, and ± 0.5 a large effect (Steyn, 2002). The final statistical calculations were aimed at examining statistical and practical differences between demographical groups. The results were firstly analysed for statistically significant differences ($p < 0.05$) and after that for practical differences. Cohen's d-values were computed and practical differences were considered as follow: 0.2 = Small no practical significant difference; 0.5 = Medium practical visible difference; 0.8 = Large practical significant difference (Steyn, 2002).

4. Results and Findings

The results are presented in four sections. The first section reports on reliability and descriptive results, and the second section on validity. The second section reports on findings regarding the correlation analysis, and the final section reports on demographical group differences within the variables under examination.

4.1 Reliability and descriptive results

Table 1 below contains the reliability and descriptive results for all measures applied in this study.

Table 1: Reliability and descriptive results

Variables	Cronbach alpha (α)	Mean	Standard deviation
Satisfaction with self-determination needs	0.95	3.49	0.71
Autonomy	0.88	3.52	0.74
Competence	0.89	3.53	0.77
Relatedness	0.86	3.41	0.76
Work engagement	0.97	3.95	1.30
Vigour	0.91	4.00	1.36
Dedication	0.94	4.05	1.42
Absorption	0.92	3.82	1.28
Perceived managerial support	0.96	5.41	1.26
Supportive supervisor relations	0.97	5.20	1.33
Perceived competence	0.96	5.94	1.07
Emotional exhaustion	0.96	2.30	1.55
Intention to leave	0.93	2.62	1.23

Source: Authors

4.2 Confirmatory factor analysis

Once reliability was confirmed, a CFA was performed to investigate the fit between the measurement models of needs satisfaction, employee engagement, perceived managerial support and the obtained study data (Sun, 2005). The maximum likelihood (ML) estimator was used. In the specified model,

the satisfaction of self-determination needs was considered through the three factors, namely: autonomy, competence, and relatedness. Employee engagement, emotional exhaustion and turnover intentions were considered through the specified scale items for each respective measure. The results for the CFA model indicate the model to be considered valid ($\chi^2 = 315.18$; $df = 116$; TLI = 0.92; CFI = 0.93; RMSEA = 0.08; SRMR = 0.04).

4.3 Correlation analysis

Table 3 below summarises the correlation analysis for the main variables examined in the present study.

Table 3: Correlation results needs satisfaction, work engagement, and perceived managerial support

Nr	Variables	1	2	3	4	5
1	Satisfaction of self-determination needs predictor	1				
2	Work engagement	0.85*	1			
3	Perceived managerial support predictor	0.68*	0.67*	1		
4	Emotional exhaustion	-0.67*	-0.69*	0.62*	1	
5	Intention to leave	-0.65*	-0.63*	-0.62*	0.61*	1

* Note: $p < 0.01$ was considered significant
 Practical effect: ± 1 = small effect; ± 3 = medium effect; ± 5 = large effect (Steyn, 2002)

Source: Authors

The results as depicted in Table 3 indicate all variables under examination had a visible relationship. The satisfaction of self-determination needs variable was positively associated with work engagement ($r = 0.85$; $p < 0.01$: Large effect). In reality, this will result in a situation whereby respondents who report higher observations of satisfaction of self-determination needs will also be inclined to report higher observations of work engagement. The satisfaction of self-determination needs was also associated with supervisor support ($r = 0.68$; $p < 0.01$: Large effect). These results will translate into a situation whereby higher responses of satisfaction of self-determination needs will be related to higher reported observations of supervisor support. The results show an inverse relationship between satisfaction of self-determination needs and emotional exhaustion ($r = -0.67$; $p < 0.01$; Large effect) and with turnover intentions ($r = -0.65$; $p < 0.01$; Large effect). These results show that CRO employees who report higher observations of satisfaction of self-determination needs will most likely report lower observations of emotional exhaustion and turnover intentions. Work engagement was positively associated with supervisor support ($r = 0.67$; $p < 0.01$; Large effect). Therefore, employees who report higher work engagement will also be inclined to report higher supervisor support observations. Inverse relationships were recorded between employee engagement and emotional exhaustion ($r = -0.69$; $p < 0.01$; Large effect) and turnover intentions ($r = -0.63$; $p < 0.01$; Large effect). This result means employees who report higher observations of work engagement will also report lower observations of emotional exhaustion and turnover intentions. Finally, the correlations show supervisor support is negatively associated with emotional exhaustion ($r = -0.61$; $p < 0.01$; Large effect) and intention to leave ($r = -0.62$; $p < 0.01$; Large effect). In reality, CRO employees who report higher observations of supervisor support will also report lower observations of emotional exhaustion and turnover intentions.

4.4 Group comparisons

The final section will report gender comparisons, age-interval comparisons, level of education comparisons, and work duration comparisons.

Table 4 below contains the results obtained from comparing observations in the present study between the male and female groups.

Table 4: Gender comparisons, needs satisfaction, work engagement, and perceived managerial support

Construct	Males			Females			Cohen's d
	Mean	Var	SD	Mean	Var	SD	
Satisfaction of self-determination needs*	3.18	0.64	0.80	3.67	0.34	0.58	0.45
Work engagement*	3.37	2.19	1.48	4.30	1.07	1.04	0.46
Supervisor support*	6.94	9.27	3.04	5.85	1.03	1.01	0.31
Emotional exhaustion*	2.81	2.66	1.63	1.99	2.02	1.42	0.35
Turnover intentions*	3.10	1.46	1.21	2.33	1.31	1.15	0.43

Note: * p-value was considered significant at $p < 0.05$.
 Var = Variance, SD = standard deviation.
 Cohen's d: ± 0.2 = small effect, not practical significant difference; ± 0.5 = medium effect, practical visible difference; ± 0.8 = large effect, practical significant difference (Steyn, 2000).

Source: Authors

Medium practical visible difference was observed for the satisfaction of self-determination needs ($d = 0.45$) and work engagement ($d = 0.46$). In both cases, females reported higher observations when compared to their male counterparts. Medium practical differences were also observed for supervisor support ($d = 0.31$), emotional exhaustion ($d = 0.35$) turnover intentions ($d = 0.43$). In this case, males recorded higher observations of perceived managerial support, emotional exhaustion, and turnover intentions when compared to female respondents.

Table 5 below contains the results from comparing observations for the age-interval demographical variable.

Table 5: Age interval comparisons, needs satisfaction, work engagement, and perceived managerial support

Construct	Age interval 26-35 years			All other age intervals			Cohen's d
	Mean	Var	SD	Mean	Var	SD	
Satisfaction of self-determination needs	3.50	0.45	0.67	3.47	0.56	0.75	0.03
Work engagement	3.98	1.52	1.23	3.92	1.88	1.37	0.03
Supervisor support	5.60	0.94	0.97	5.54	1.31	1.14	0.03
Emotional exhaustion	2.23	2.03	1.43	2.37	2.80	1.67	0.06
Turnover intentions	2.74	1.43	1.20	2.50	1.56	1.25	0.13

Note: * p-value was considered significant at $p < 0.05$.
 Var = Variance, SD = standard deviation.
 Cohen's d: ± 0.2 = small effect, not practical significant difference; ± 0.5 = medium effect, practical visible difference; ± 0.8 = large effect, practical significant difference.

Source: Authors

Only a small effect was observed for the turnover intentions' variable ($d = 0.13$), with the Age interval of 26-35 years reporting a slightly higher intention to leave. Based on the results of age comparisons, it can be argued that there are no practically significant differences in the age group for the constructs under investigation.

Table 6 contains the comparison results for the level of education demographical variable.

Table 6: Tertiary and all other qualifications comparisons, needs satisfaction, work engagement, and perceived managerial support

Construct	Tertiary			All other qualifications			Cohen's d
	Mean	Var	SD	Mean	Var	SD	
Satisfaction of self-determination needs*	3.54	0.44	0.66	3.34	0.66	0.81	0.19
Work engagement	4.01	1.52	1.23	3.46	2.17	1.47	0.13
Supervisor support*	5.68	0.90	0.95	5.26	1.66	1.29	0.26
Emotional exhaustion	2.25	2.25	1.50	2.43	2.89	1.70	0.08
Turnover intentions	2.59	1.52	1.23	2.71	1.47	1.21	0.07

Note: * p-value was considered significant at $p < 0.05$.
 Var = Variance, SD = standard deviation.
 Cohen's d: ± 0.2 = small effect, not practical significant difference; ± 0.5 = medium effect, practical visible difference; ± 0.8 = large effect, practical significant difference.

Source: Authors

Small effects, no practical differences were observed for satisfaction of self-determination needs ($d = 0.19$), employee engagement ($d = 0.13$), emotional exhaustion ($d = 0.08$) and turnover intentions ($d = 0.07$). A medium practical difference was observed for the supervisor support variable ($d = 0.26$), with the Tertiary qualifications group recording a higher observation compared to All other qualifications groups.

The final group comparison was conducted for the work duration demographical variable. Table 7 contains the results of the work duration comparison.

Table 7: Work duration comparisons, needs satisfaction, work engagement, and perceived managerial support

Construct	Work duration Five or fewer years			All other work duration levels			Cohen's d
	Mean	Var	SD	Mean	Var	SD	
Satisfaction of self-determination needs*	3.38	0.51	1.33	3.71	0.41	0.64	0.20
Employee engagement*	3.75	1.76	1.33	4.37	1.32	1.15	0.33
Supervisor support*	5.43	1.13	1.06	5.86	0.97	0.99	0.28
Emotional exhaustion*	2.52	2.40	1.55	1.82	2.12	1.46	0.31
Turnover intentions*	2.84	1.49	1.22	2.15	1.22	1.11	0.39

Note: * p-value was considered significant at $p < 0.05$.
 Var = Variance, SD = standard deviation.
 Cohen's d: ± 0.2 = small effect, not practical significant difference; ± 0.5 = medium effect, practical visible difference; ± 0.8 = large effect, practical significant difference.

Source: Authors

Medium effects of visible practical difference were observed between work duration of 5 or fewer years and all other work duration levels for needs satisfaction ($d = 0.20$), work engagement ($d = 0.33$), and supervisor support ($d = 0.28$). In all of these differences, the All-other work duration group recorded higher observations. These results imply that all employees working longer than five years at the organization under investigation reported higher satisfaction of self-determination needs, work engagement, and perceived managerial support. Medium effects were also observed for the emotional exhaustion ($d = 0.31$) and intention to leave ($d = 0.39$) variables. For the emotional exhaustion and intention to leave variables, respondents from the specific CRO, respondents working at the organization for less than five years, were more inclined to report emotional exhaustion and increased turnover intentions.

5. Managerial Implications

South African managers face several challenges, including recruiting and retaining critical staff. The excess talent demand in the pharmaceutical industry with an apparent shortage further contributes to these challenges. Therefore, knowledge of features that will assist with crucial staff retention will be valuable towards solutions. The current study aimed at providing such information with an

examination of the satisfaction of self-determination needs, supervisor support, employee engagement, and well-being in the highly demanding CRO industry.

In general, respondents were in agreement with the satisfaction of self-determination needs (Mean = 3.49), with the highest recorded observation on the competence variable. The majority of respondents reported employee engagement (Mean = 3.95) experiences at least once a week, with the elements of both vigour and dedication being dominant. Respondents were further of the opinion that their managers are supportive (Mean = 5.41). Furthermore, respondents reported emotional exhaustion at least once a month or less, while most participants disagreed on experiencing turnover intentions (Mean = 2.62).

The study found evidence to indicate significant relationships between the variables under investigation. Satisfaction of self-determination needs was positively associated with work engagement, positively associated with supervisor support, and negatively associated with emotional exhaustion and turnover intentions. The results further show that work engagement is positively associated with supervisor support, while an inverse relationship was observed for both emotional exhaustion and turnover intentions. Supervisor support also had an inverse relationship with both emotional exhaustion and turnover intentions.

In terms of group comparisons, a practical effect was found when comparing observations of satisfaction of self-determination needs, work engagement and supervisor support between males and females. Females reported higher satisfaction of self-determination needs and employee engagement, while Males reported higher observations for supervisor support, emotional exhaustion and turnover intentions. There was no statistical or practical difference when comparing observations between age groups. In terms of qualifications, statistical and practical differences were observed to satisfy self-determination needs and supervisor support, with the group reporting tertiary qualifications reporting higher observations. Regarding the duration of employment, statistical and practical differences were observed for all variables under investigation when comparing groups that have reported less than five years of work duration and All other work duration groups. The group with less than five years of work duration reported higher observations for emotional exhaustion and turnover intentions. All other work duration groups (more than five years) reported higher observations of the satisfaction of self-determination needs, work engagement and supervisor support. It would be advisable for organisations from this sector to develop an induction program for newly appointed employees on coping strategies, especially during high workload periods.

6. Conclusion

The study found evidence to support satisfaction of self-determination needs has a positive relationship with employee work and supervisor support. These findings confirm previous findings from unrelated industries on the importance of satisfaction of self-determination needs related to employee outputs, well-being, and supervisor support (Van den Broeck et al., 2016).

According to Baard and colleagues (2004), supervisor support is significantly related to satisfying employees' intrinsic needs for autonomy, competence, and relatedness. Previous findings from Williams et al. (2014) propose that supervisors' essential role in needs satisfaction is a sense of belonging for employees, acknowledgement, and appreciation. In addition, May et al. (2004) found evidence that supervisor support is positively associated with psychological safety, demonstrating the importance of a supportive supervisor. The literature further indicates that due to the supportive supervisor's ability to provide for feelings of psychological safety, subordinates experience a general willingness to dedicate themselves to work (Deci et al., 2017; May et al., 2004).

The lack of employee engagement could have detrimental financial implications, and both practitioners and researchers should not underestimate the importance. The absence of work engagement may also impact productivity and efficiency, especially in organizations that require skilled and efficient employees. There is growing evidence to confirm that employee engagement will improve productivity, organizational commitment, performance, and employee well-being while

reducing turnover intentions (Alfes et al., 2013). Work engagement has also been associated with higher customer satisfaction ratings, employees who stay longer with organizations, increased sales, and cost reductions (Shuck, 2011). Therefore, work engagement is fundamental to employee behaviour that should be enhanced to capitalize on all related benefits.

It seems that males report higher observations of supervisor support, emotional exhaustion and turnover intentions. The results imply that although males seem to be receiving more support (according to themselves), they have greater feelings of emotional exhaustion and turnover intentions. This specific result will require further investigation on the possible reasons for this observation. The results further demonstrate that employees with tertiary qualifications self-report higher satisfaction with self-determination needs and supervisor support. Therefore, CROs can benefit from developing and supporting the improvement of the qualification levels amongst employees.

Furthermore, groups with less than five years of work duration reported higher observations of emotional exhaustion and turnover intentions. Although CROs can benefit from employing younger staff, this might be at the cost of staff with less work duration, demonstrating higher emotional exhaustion and turnover intentions. Staff in this work duration group will require enhanced support.

Findings from this study provide insight into the productivity and value of CROs. With evidence of the association between satisfaction of self-determination needs and work-related outputs, managers and supervisors can focus their attention on encouraging the satisfaction of autonomy, competence, and relatedness. Enhanced levels of satisfaction with self-determination needs will, in return, be associated with higher observations of supervisor support and employee well-being. The results further confirm the inherent value of the SDT for understanding the relationships between employee engagement, supervisor support, emotional exhaustion and turnover intentions. Supportive supervisors in the CRO industry will attract and retain critical talent. Finally, CRO industries will also experience additional organizational benefits associated with enhanced employee engagement, reduced emotional exhaustion and turnover intentions. These organizational benefits can include enhancing productivity, reduced costs and eventually improved profitability.

7. Limitations and recommend future research

The study only collected data from office-based employees from the CRO industry. Future studies might consider collecting information on specific service areas. Given the significant differences discovered between male and female respondents, a qualitative examination might explain why females report higher observations of satisfaction of self-determination needs and employee engagement and males reported higher observations of supervisor support, emotional exhaustion and turnover intentions.

The convenience sampling does not allow for the generalization of results, and an alternative sampling strategy should be considered to allow the generalization of results. The quantitative cross-sectional design does not allow for conclusions on causality, and a longitudinal study will assist both practitioners and researchers in long-term solutions for the CRO industry. Due to the similarity in specific scales applied, common method bias will remain a possible limitation. Future studies should consider additional statistical reports (Harman's single-factor analysis) to eliminate this specific limitation (MacKenzie & Podsakoff, 2012).

It is known that the CRO and pharmaceutical industry, and in particular the contract research sector, regularly goes through events of stringent organizational restructuring to contain costs. An examination of the inherent leadership styles, including leadership styles required to manage staff in the CRO industry optimally, would further advance the topic of organizational behaviour.

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Employee Empowerment as a Catalyst For Employee Motivation, Job Satisfaction, a Better Quality of Services and Productivity at Company x.

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Keywords

Employee
Empowerment;
Employee Motivation;
Company X, Job
Satisfaction, Better
Quality of Customer
Services; Productivity

Abstract

Employee empowerment catalyses employee motivation, and it is in that context that this research evaluates the concept of employee empowerment as a catalyst for employee motivation, job satisfaction, a better quality of customer services and productivity at Company X. The study used the qualitative research method with the effect that a sample of 40 participants comprising 20 managers and 20 employees were interviewed. Findings indicated that employee empowerment influences improved employee motivation. It was shared across the forty participants' views that empowerment gives employees the power to determine their destiny. All these have impacted positively on the improvement of the motivation of the employees of Company X. It was evident that apart from catalysing improved employee motivation, employee empowerment also improves job satisfaction, a better quality of customer services and productivity. Therefore, to ensure that employee empowerment catalyses employee motivation, job satisfaction, quality of customer services and productivity, it is recommended that the management of Company X should consider adopting strategies that encompass training and development, appropriate job design, the delegation of functions, employee involvement, and allocation of sufficient resources and top management support and commitment. Future research can explore the impact of employee empowerment on a firm's productivity.

1. Introduction

Employee empowerment is a catalyst for employee motivation. Employee empowerment offers employees significant autonomy and freedom (Dessler, 2015). Through employee empowerment, employees are allocated enormous discretion and powers to make critical decisions on how different tasks must be executed. Such a level of discretion and powers induce high employee motivation to accomplish all activities designated in the operational plan (Girdwichai & Sriviboon, 2020). Highly motivated employees tend to exhibit a high level of satisfaction and productivity. These, in turn, catalyse a business' overall effective performance.

Improved performance of a business arises from the fact that highly satisfied and motivated employees tend to be more creative and innovate better ways through which the allocated tasks must be accomplished (Mustafa & Bon, 2012). This improves not only operational efficiency, but also the quality of products and the quality of customer services. Highly empowered employees are often more satisfied and motivated to induce positive change in their attitudes and behaviours to handle customers in the way that spawns the overall quality of a business' customer services (Paais & Pattiruhu, 2020).

Yet, as the quality of customer services improves, a business' overall capabilities to attract and retain new customers tend to be enhanced. If combined with a business's existing customer base, this induces a rise in sales, revenue and the improvement of a business's overall financial bottom-line. Certainly, all these imply that the positive effects of employee empowerment are significantly associated with improved employee motivation, satisfaction and productivity that in turn spur a

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business' overall effective performance. Unfortunately, even if that is the case, facts from Company X suggest there is still less commitment and effort to ensure that the concept of employee empowerment is integrated as part of the strategies for leveraging its productivity and effective performance (Company X, 2018).

As Company X focuses on improving the efficiency of types of machinery rather than initiatives that bolster employee empowerment to catalyse employees' efficiency, such an approach has undermined quests of utilising employee empowerment as part of the performance improvement strategies. Thus, it is in that context that this research evaluates the impact of employee empowerment as a catalyst of employee motivation, job satisfaction, better quality services and productivity at Company X so as to identify its impediments and the remedial improvement initiatives that Company X can adopt. In other words, the notion that employee empowerment is still a challenge at Company X is reflected in the background information on Company X's approaches to business management and employee empowerment.

2. Problem Investigated

The research problem statement reflects the background and problems of employee empowerment, and motivation, job satisfaction, quality service, and productivity in Company X that motivate this research.

Company X is faced with a challenge of recognising employee empowerment as one of the strategies for improving employee motivation (Company X, 2019). Instead, management tends to use other motivation strategies like improvement of remuneration and usage of more efficient machineries to render work easier for employees, but without paying attention to the importance of employee empowerment (Company X, 2019). As Company X decentralises structures without cascading authority and power to make critical decisions to the lower-level employees, it has resulted in demotivation, job dissatisfaction, poor service delivery and decreasing productivity.

The implication is that Company X has not been able to achieve the desired productivity levels from the employees. It has also undermined its effective performance with the effect that although Company X continues to register annual turnover around R16 million, it has since 2011 failed to score its target of R20 million (Company X, 2019). At the same time, Company X's (2020) records imply that the overall performance of the employees has declined from 86% to 77%. To reverse this trend and turnaround the business' performance, Company X's management has opted to invest in heavy and more efficient machineries and equipment. It has also adopted the approach of intense monitoring and evaluation of employees' activities in conjunction with increasing employees' remunerations (Company X, 2019).

But as Company X uses such performance improvement measures, they have only induced little positive impacts on improving employees' productivity and performance. Reasons for poor performance is caused by the employees' perceptions that management seems not to care much about the wellbeing of the employees. Some employees also express dissatisfactions with the way things are done as well as the overall centralisation of decision-making. Combined with poor communication, this affects the overall good interpersonal relationship between the ordinary employees and top management.

There is an implication that employee empowerment is significantly associated with improved employee motivation and a firm's performance. But even if that is true, only a few studies have examined the impact of employee empowerment on employee motivation, job satisfaction, high service quality and productivity (Kemal, 2010; Dahou & Hacini, 2018:49). The same challenge is also reflected in Company X with the effect that, no study has ever examined how such challenges can be addressed to improve employee empowerment. Despite Kemal's (2010) research exploring the effects of employee empowerment on organisational performance, the nexus between employee empowerment and employee motivation is still to be examined. Similar gaps are also evident in Dahou and Hacini's (2018) study that examined the prerequisites of employee empowerment without

evaluating impact on employee motivation. Such approach limits the extent to which Company X can be motivated to embrace employee empowerment as a catalyst of employee motivation that in turn also leverages a business' effective performance

3. Main Research Objectives

- To analyse the impact of employee empowerment as a catalyst for employee motivation, job satisfaction, a better quality of services and productivity at Company X.

To accomplish the above indicated main research objective, the entire research process will be guided by the sub- research objectives which are to:

1. Examine the impact of employee empowerment on employee motivation, job satisfaction, a better quality of services and productivity at Company X
2. Develop strategies for improving the implementation of employee empowerment as a catalyst for employee motivation, job satisfaction, a better quality of services and productivity at Company X.

4. Research Question

4.1. Main Question (MQ)

MQ: What is the impact of employee empowerment on employee motivation, job satisfaction, a better quality of services and productivity at Company X?

4.2. Sub-questions (SQ)

While drawing from the research objectives and the main research question, the sub-questions that will guide this research are:

SQ1: What are the impacts of employee empowerment on employee motivation, job satisfaction, a better quality of services and productivity at Company X?

SQ2: Which strategies can be recommended for improving the implementation of employee empowerment as a catalyst for employee motivation, job satisfaction, a better quality of services and productivity at Company X?

As the study seeks to respond to these critical research objectives and questions, it will be guided by the fundamental reasoning of the theories and literature evaluated below.

5. Literature Review

The following sections provide a critical analysis of literature and theories that are relevant to the study. The first section examined the theories and literature on employee empowerment. It evaluated the approaches to employee empowerment, employee empowerment strategies and critical success factors for employee empowerment. The second section analysed theories on employee motivation. The theories which were examined encompass Maslow's (1979:44) hierarchy of needs, Herzberg's two-factor theory, Adam's equity theory, McClelland's theory of needs and McGregor's theory x and y. Such theories were evaluated against Company X's Policy on Employee Empowerment and Motivation prior to examining the impact of employee empowerment on the business's performance.

5.1. Employee Empowerment

Employee empowerment is a strategic process of granting employees with the necessary autonomy and powers to make critical decisions on how the allocated tasks and activities must be accomplished with minimal management intervention to achieve the desired business goals and objectives. It requires businesses to provide employees with the necessary skills and competencies. Decentralised structures, resources and decision-making powers needed to complete work must also be established (Alagarsamy, Mehrolia & Aranha, 2020). Employee empowerment enhances and builds trust between management and the ordinary employees. Besides leveraging job satisfaction, it also motivates and increases the rate of employees' productivity (Al-Makhadmah, Al Najdawi & Al-Muala, 2020).

Employee empowerment bolsters the overall degree of collaboration and liaison between management, supervisors and ordinary employees (Meyerson & Dewettinck, 2012). It aids smooth accomplishment

of operational activities and improves organisational performance. Employee empowerment induces “higher level of team spirit, self-confidence, innovation, independent thinking and entrepreneurship among the employees” (Insan, Astuti, Raharjo & Hamid, 2013).

Employee empowerment also induces the need for employees to act responsibly and accountably (Ibrahim, 2020). It allows management to develop equitable and performance-based reward systems. Thomas and Velthouse (1990) posit that employee empowerment connotes “an improvement in intrinsic motivation manifested in a set of four cognitions reflecting individual employee’s improved orientation towards the allocated tasks”. It creates an environment in which management and ordinary employees seamlessly collaborate and cooperate to ensure efficient accomplishment of organisational activities. This aids efficient and speedy achievement of organisational goals. Although employee empowerment is often associated with the redistribution of power, the utilisation of relevant employee involvement initiatives stimulates the desired level of commitment from the ordinary employees (Dahou & Hacini, 2018). The involvement of ordinary employees in management activities enables employee learning and feeling of empowerment.

Baumgartner (2014) points out that employee empowerment is analogous in that it grants ordinary employees decision-making powers, authority, and responsibility to utilise their skills in the accomplishment of the required activities. It also requires management to avail the employees with the necessary resources as well as physical and psychological support (Al-Dmour, Yassine & Al-Dmour, 2019).

Psychological empowerment is the “process of creating the mindset and feelings that support empowerment” (Raub & Robert, 2010:1743). To accomplish that, psychological empowerment requires embracement of meaningfulness of the job, competence, choice and impact as the four critical determinants for effective psychological empowerment. The higher an individual employee scores in each of these elements, the greater the sense of empowerment (Raub & Robert, 2010). However, to attain the desired positive outcomes on organisational performance, the overall process of employee empowerment often requires the utilisation of certain approaches for employee empowerment.

5.1.1. Approaches to Employee Empowerment

Employee empowerment process may require the utilisation of four main approaches that include “mechanical, organic, socio-structural and psychological approaches” (Hanaysha & Tahir, 2016)

5.1.1.1. Mechanic Approach to Employee Empowerment

Mechanical approach demands that top management to clearly share, delegate and cascade decision-making power and authority to the employees at the lower levels of the organisational structures (Varma & Chavan, 2020). This should be accompanied with measures for enhancing accountability and control to ensure activities are accomplished as planned (Sandhya & Sulphrey, 2019).

5.1.1.2. Organic Approache to Employee Empowerment

In this approach, lower-level employees are first empowered before allocating power and authority to the top management. The risk with the application of the organic approach is that it reduces managerial control over lower-level activities (Yuliandi, 2019). It is based on the belief that each employee has abilities and capabilities to accomplish the allocated tasks (Yuliandi, 2019). Hence, by adopting bottom-up empowerment approach it reinforces such a belief to stimulate the desired level of commitment and performance. However, for organic approach to empowerment to be successful, it must be applied in conjunction with the socio-structural approach (Yuliandi, 2019).

5.1.1.3. Socio-structural Approach

Socio-structural approach emphasises the requirement for establishing the structure that enable employee empowerment.(Orgambidez, Millan, Dominguez & Barrego, 2021:33). To achieve this, “socio-structural approach focuses on establishing or re-structuring the existing organisational structures, policies and practices to offer employees the necessary power and authority as well as

influence over their work roles”. However, for the application of socio-structural approach to be effective, it must be accompanied with the use of the psychological approach.

5.1.1.4. Psychological Approach

Psychological approach emphasises the need for the development and application of the strategies that enable the employees to feel empowered (Bindurani, 2015). It deals with the preparation of the mindset of the employees to feel empowered.

Other employee empowerment approaches include empower, enhance, engage and enable.

- *Empower* requires the delegation of relevant decision-making power and authority as well as access to resources and information (Martine, Pascale, Blomme & Jaap, 2021).
- *Enhance* is the process of creating relevant degree of autonomy to enable employees accomplish the allocated tasks with minimal intervention from management (Sharma & Bhati, 2017).
- *Engage* is the process of providing the necessary support to employees by encouraging them to use all their capabilities to achieve the desired outcomes (Sharma & Bhati, 2017).
- *Enable* deals with the establishment of relevant management framework that aids the empowered employees to achieve the outlined organisational goals and objectives (Wadhwa & Verghese, 2015).

5.2. Employee Empowerment and Motivation

Employee empowerment creates a framework through which individual employees are able to work independently of their managers (Voegtlin, Boehm & Bruch, 2015). This enables ordinary employees to utilise their skills and competencies with minimum supervision. In this regard, employees feel valued and they develop positive perception about their jobs. In the long-run, this catalyses improved employee motivation (Hanaysha & Tahir, 2016). Employee motivation is the high level of commitment, desire and effort that employees place in the accomplishment of tasks to enable achievement of organisational goals.

Yets employee empowerment positively influences motivation, employee job satisfaction, efficiency, productivity, product quality and the quality of customer services may also improve (Dahou & Hacini, 2018). Improved productivity arises from the fact that as employees are granted the discretion to execute their duties work they may choose to work for extra hours. Such increased level of commitment edifies the unit of output that a business produces per unit of labour (Busara, 2016). Better product quality and improved customer services create a bundle of value offerings that sets a business apart from its rivals (Sakapas, Parinya & Kittisak, 2019). This contributes to increased sales, revenue, market share and profitability (Gazzoli, Hancer & Park, 2010).

Employee motivation is the feelings and perceptions that drive employees to commit more effort in the accomplishment of tasks in order to attain the desired performance targets (Chen & Wang, 2019). In the event of successful implementation of employee empowerment programmes, employees perform more effectively. Several theories explain the notion of employee motivation (Ganji & Johnson, 2020). Such theories include Maslow’s (1979:44) “hierarchy of needs”, Herzberg’s “two-factor theory”, Adam’s “Equity Theory”, McClelland’s “theory of needs” and McGregor’s “theory X and Y” (Sahoo, Behera & Tripathy, 2010).

Abraham Maslow’s (1979) “hierarchy of needs theory” places human needs in a hierarchy, namely physiological, safety, affection and belongingness, esteem and self-actualisation needs (Li, Zhang, Xiao, Chen & Lu, 2019). Employee motivation is at the center of empowerment through fulfilling employees need to belonging, affection and the feeling of being a valued member of the organisation. This notion is supported by Herzberg’s “two-factor theory”, which heralds job satisfaction and motivation to be influenced by a combination of certain satisfiers and dissatisfiers. Satisfiers are

variables that induce improved job satisfaction and motivation whereas dissatisfiers are factors that often instigate job dissatisfaction and low motivation (Hunjra, UIHaq, Akbar & Yousaf, 2011:680).

As Herzberg notes, these satisfiers and dissatisfiers are often reflected in a combination of certain motivation and hygiene factors. Motivational factors are achievement, recognition, the work itself, responsibility, and advancement and growth (Hunjra *et al.*, 2011). The hygienic factors include supervision, working condition, interpersonal relationship, pay and job security and company policies. But contrary to Abraham Maslow's (1979:44) "hierarchy of needs theory", and Herzberg's "two-factor theory", Adams' "Equity Theory" argues that employees are often motivated and satisfied with their jobs depending on the fairness and equity at which they are treated in relation to their colleagues. In the event that employees feel that they are treated impartially and unfairly in relation to their colleagues, job dissatisfaction and low motivation may tend to set in. This contrasts with the situation where they perceive to be treated fairly and equitably (Lyu, Ji, Zheng, Yu & Fan, 2019).

Employees tend to evaluate fairness in terms of their contribution to their organisation and the rewards received vis-à-vis the contribution and rewards received by his colleagues. In that regard, Adams' "Equity Theory" notes that input applies not only the hours worked, but also to skill, tolerance, determination, enthusiasm, assistance to other employees, experience and sacrifice (Nurtati, Yanti & Untari, 2020). Output connotes the reward received that can be financial or non-financial like recognition, appreciation and promotions (Sharma & Bhati, 2017). Thus, to instigate improved employee job satisfaction and motivation, it is critical to balance input and output to employees across the organisation. This is because any form of imbalance can induce job dissatisfaction, low motivation and an array of undesired consequences that can affect a business' effective performance (Hanaysha & Tahir, 2016).

Even though such explanation elucidates on how job satisfaction and motivation or dissatisfaction and low motivation arise, in his book titled "The Achieving Society", McClelland still notes that employees are often motivated by three forms of needs that include need for achievement, affiliation and power (Putra, Dharmanegara & Yas, 2019). Need of achievement often arises from the challenge of success that drives one to work to achieve more and more as well as fear of failure that drives one to work hard in order to avoid failure. Employees that are motivated by the need for achievement are analytical and tend to take all risks and put extra efforts and commitment to exceed expectations.

But McClelland points out that as such employees achieve more and more to advance in the hierarchy, the need for achievement and power tend to be more valued than the need for affiliation (Batool & Akhorshaideh, 2017). Need for power is often associated with quests for career advancement and such employees tend to be aggressive, manipulative, demanding, ambitious, motivated and high performers when assigned vital tasks in an organisation. This contrasts with the employees with need for affiliation that tend to cherish and be motivated by the good relationship between him or her and fellow employees. As thus, such employees tend to be more motivated by the recognition and appreciation from fellow employees for the tasks accomplished (Harazneh, Adaileha, Thbeitatb, Afaneha & Khanfara, 2020). Such views however differ from the articulations in McGregor's "theory x and y" that emphasises that employees must be availed with the opportunity to utilise and apply the skills and competencies in the best way possible for the organisation to achieve the greatest good. In turn, such approach influences the overall improved employee motivation and effective performance of an organisation. Such reasoning is certainly also echoed in most policy documents on employee motivation.

5.3. Policy Document on Employee Empowerment

Employee empowerment documents stress the importance for the development and use of policies that integrate structural empowerment with psychological empowerment (Seyedeh, Lester, Vahid & Babak, 2021). In terms of the structural empowerment, such policy documents emphasise the need for the creation of systems, structures, regulations and policies that promote the structural employee empowerment. For psychological empowerment, policy documents require business managers to

develop and apply systems that would create a feeling of empowerment among the employees (Albalawi, Naughton, Elayan & Sleimi, 2019).

To enhance employee empowerment, the management of Company X have developed and used strategies that encompass training and development, delegation of duties to lower employees, development of workgroups, development of the human resource manual for employee empowerment, coaching and mentoring, and employee involvement. However, implementation has been a challenge. The policy is more on paper than practice.

5.4. Employee Empowerment and Productivity

Improved level of organisational productivity is one of the positive outcomes of successful implementation of employee empowerment initiatives. Capabilities of employee empowerment initiatives such as the establishment of decentralised structures in which employees plan and determine how they should accomplish their tasks positively leverages productivity (Ahmad, 2020). Due to the shared responsibility and accountability between management and ordinary employees, some of the employees may be tempted in such circumstances to even work extra hours to get the work done and achieve the desired results (Suriadnyana, 2020). This improves productivity. Productivity may also result from the tendency of employee empowerment to create autonomous and independent structures that render it possible for each employee to focus on his or her allocated tasks. This eliminates the duplication of tasks where managers and supervisors leave their allocated work and get involved in aiding the accomplishment of tasks allocated to ordinary employees (Singh & Singh, 2019).

As employees have the discretion to make critical decisions, they feel motivated and satisfied with jobs. This makes them to put more effort in the execution of their duties (Sakapas, Parinya & Kittisak, 2019: 734). With time, such consistent efforts may translate into high level of employee productivity, which bolsters overall organisational productivity. Unfortunately, Company X has not yet embraced employee empowerment.

5.4.1. Employee Empowerment and Quality of Product and Services

Improved quality of products and services are most likely to result from the implementation of employee empowerment initiatives. Granting employees power to make decisions as well as the necessary information and resources to discharge their duties may improve the overall level of creativity and innovation that improve the quality of products or services an organisation produces (Shakirah & Shah, 2020).

As a result of employee empowerment, motivated and committed employees are less likely to make mistakes and errors that negatively affect product quality (Iman *et al.*, 2020). Employee empowerment reduces employee frustrations and dissatisfactions at work. This contributes to the provision of better quality products and services (Eliyana, Ma'arif & Muzakki, 2019). However, facts from Company X imply that employee empowerment is less adopted strategy.

5.4.2. Employee Empowerment and Job Satisfaction

Employee empowerment may positively influence job satisfaction (Orgambidez *et al.*, 2021). If employees are given the autonomy to make critical decisions as well as power to access relevant information and resources, it improves their job satisfaction (Kumar & Kumar, 2017). High employee job satisfaction contributes to improved productivity and quality of products and services (Alhozi *et al.*, 2021). Unfortunately, at Company X decision-making and distribution of resources is centralised at the top.

In summary, as stated at the beginning of the literature review, empowerment literature was evaluated against employee empowerment, employee empowerment strategies and critical success factors for employee empowerment. And the second section analysed theories on employee motivation utilising Maslow's (1979) hierarchy of needs, Herzberg's two-factor theory, Adam's equity theory, McClelland's theory of needs and McGregor's theory x and y. These theories were reviewed against

Company X's Policy on Employee Empowerment and Motivation prior to examining the impact of employee empowerment on the business's performance. The literature review was guided by the secondary research questions (SRQs). SQ1 seek to understand the impact of employee empowerment on the employee motivation, job satisfaction, a better quality of services and productivity at Company X; and SQ2 seek to identify strategies that can be recommended for improving the implementation of employee empowerment as a catalyst for employee motivation, job satisfaction, better quality of services and productivity at Company X?

6. Research Design and Methodology

This section explains the research design and methodology used in the collection and analysis of primary data from the sample employees at Company X. To accomplish this, the study used the phenomenological research paradigm/the deductive reasoning, case study research strategy and qualitative research approach. In this section, the sampling approaches and relevant measures that were undertaken to bolster validity and reliability of the study will be explained.

, This study adopted a qualitative research approach and a case study research design to aid critical analysis of the specific situation of employee empowerment and its impact on employee motivation at Company X. The data collection instrument used was interviews. Thus, by using case study research design, the study will be able to undertake in-depth specific analysis of employee empowerment at Company X for necessary generalisation to be made on the impact, challenges and improvement strategies for any other company that may be facing similar issues. Also, the utilisation of case study research design was opted on the basis that it is time constrained and as thus use of lengthy research designs like experimental research design and the longitudinal research design would not render the study to be completed within the prescribed time. Qualitative research approach enables eliciting of in-depth rich narratives from the participants about the phenomenon being investigated (Saunders et al., 2009). Thus, it was interpreted that the case study as blended with qualitative research would aid thorough in-depth analysis to extract rich information that accurately responds to the following critical research questions:

- What are the impacts of employee empowerment on the employee motivation at Company X?
- Which strategies can be recommended for improving the implementation of employee empowerment as a catalyst for employee motivation, job satisfaction, better quality customer services and productivity at Company X?

In other words, all these will enable the study to achieve its overriding aim which is to evaluate the impact of employee empowerment on employee motivation at Company X so as to identify the challenges and the improvement strategies that can be adopted.

6.1. Target Population and Sampling

The population for study included all the 982 employees of Company X (Company X's Human Resource Policy, 2020). But drawing the sample population from this target population of 982 employees required the use of purposive sampling as a non-probability sampling technique. Data were collected from a sample of 40 participants from Company X. The participants comprised 20 managers and 20 employees. Since the objective of this research was to evaluate the impact of employee motivation at Company X, it was deemed that the use of a larger sample of 40 employees would offer critical insights on the dimensions and magnitude of the impact of employee empowerment on employee motivation at Company X. At the same time, the use of a larger sample of 40 employees also aided assessment of the dimension and magnitude of the effects of lack of employee empowerment on employee motivation if it is not adopted by Company X.

Use of a larger sample of 40 employees therefore reduced risks of biasness that would emerge from the opinions of different employees due to the variations of the impact of employee motivation on different employees or groups of employees. At the same time, use of a larger sample of 40 employees was also influenced by the fact that authors like (Wadhwa & Verghese, 2015; Bindurani, 2015; Hanaysha, 2016)., Bindurani (2015) and Hanaysha (2016) also used larger samples in the

range of 30 to 60 participants when examining the process for the implementation of employee empowerment. Nonetheless, non-probability sampling differs from probability sampling on the basis that it does not use chance and randomness in the process of determining the participants that must or must not be included in the sample population (Etikan & Kabiru, 2017).

6.2. Data Collection

Primary data from each of the 40 participants from Company X was collected using the semi-structured interviews. The semi-structured interviews were based on a pre-designed interview guide. However, further questions were still allowed to probe new issues emerging from the participants' responses. Design of the interview guide for semi-structured interviews was aligned with three research objectives and questions for this study. It comprised three sections. Section A assessed the strategies for improving employee empowerment at Company X. Section B evaluated the impact of employee empowerment on employee motivation at Company X. Section C examined the limitations of employee empowerment as a catalyst for employee motivation at Company X. Interviews were accomplished through face-to-face interactions with each of the 40 sample participants that included 20 managers and 20 employees from Company X until all the required data was collected..

6.3. Data Analysis

The data analysis method used in this study is thematic analysis. Thematic analysis is structured systematic process of evaluating the collected data to extract meaningful information that offers critical insights on the concept being researched. It is an iterative process of evaluating, extracting and reporting information about the issues being researched (Braun & Clarke, 2016). Thus, while using thematic analysis, the study used four steps to accomplish the data analysis. First step entailed data cleaning and reading and re-reading the interview text to familiarise with the concepts unfolding in the recorded participants' narratives. Second step entailed analysing the interview text and extracting main themes that are relevant to the studied phenomenon. The third step involved sub-subthemes as well as the accompanying narratives that elaborate on the main themes. Fourth step entailed drawing a thematic framework that links all the main themes to the sub-subthemes and their accompanying narratives to discern how the overall outcomes of thematic analysis offer coherent explanations on the impact of employee empowerment on employee motivation at Company X, its limitations and the improvement measures that Company X can adopt. Certainly, the use of thematic analysis aided effective response to the overriding research aim, objectives and questions of the study.

6.4. Validity and Reliability

Validity refers to the overall veracity and truthfulness of the research findings (Tashakkori & Teddlie, 2010). Reliability is the extent to which the outcomes of the research can be relied on to make relevant decisions (Tashakkori & Teddlie, 2010). To improve validity and reliability of this research, credibility is enhanced by comparing and contrasting the emerging qualitative research findings with theories. This aided evaluation of the extent to which the findings are supported or disputed by theories.

At the same time, credibility was enhanced by comparing and contrasting the views of each participant about employee empowerment on employee motivation at Company X with each other. This aided elimination of biasness as well as lack of truthfulness that could have been integrated in some of the responses of some participants. Credibility was further enhanced by ensuring that the sample population constituted of only the employees of Company X that are knowledgeable of the dynamics and complexities of employee empowerment issues at Company X. The Interview Research Guide used was also designed based on the research objectives and questions for the study. , During the analysis, interpretation and presentation of interview findings, verbatim quotes from the interview findings were also inserted in the presentation and discussions of the findings to ensure that the information that the participants from Company X conveyed was not distorted.

Design of the Interview Guide was accompanied with quests for ensuring that all statements and questions contained therein are unambiguous and simple for the participants to respond with relative ease. Further quests of ensuring the suitability of the Interview Guide entailed pilot testing on at least

three participants to discern the overall effectiveness of the Interview Guide. Issues that were highlighted by participants during the pilot testing were corrected prior to the commencement of the actual interviews.

Measures were also integrated to bolster the overall research ethics. A code of ethics is primary to ensure that the research community safeguards and protects the research participants involved in the research. Ethical behaviour on the part of the researcher is essential in any inquiry. An ethics application was lodged at the University of Johannesburg Business Management ethics committee, and ethics clearance was issued for the study.

7. Results and Findings

The results of the interviews are presented and discussed in this section. Results are presented and discussed based on the objectives, questions, and demographics of the study. In evaluating employee empowerment, it was determined whether it impacted motivation. The interview results are also discussed and contrasted with the theories and literature of the study to determine whether theories substantiate or refute the findings.

7.1. Demographical Information of Participants

Demographical information is reflected in the fact that whereas 23 participants were females, 17 were males. This is attributable to the fact that while using purposive sampling, the study mainly focused on interviewing the employees in the managerial positions that were considered to be well abreast with the issues of employee empowerment and motivation at Company X. Thus, with Company X being a labour intensive business, most of the managers are females as contrasted to the lower level employees and shop floor employees that are largely male. This explains the disparity in the females and males that participated in the study. The participants who participated in the interviews comprised 23 females and 17 males drawn from different functional departments. Thus, 12 were from human resource, 8 from manufacturing and production, 5 from marketing and sales, 10 from logistics and transportation, 5 communication and public relations and 10 from finance and accounts. Out of these, 15 had the work experience of 5-10 years, 20 had the work experience of 10-20 years, 10 had the work experience of 20-30 years, 3 had experience of 30-40 years and finally 2 had the experience of 40-50 years. Generally, these demonstrate that the participants in this study had the relevant experience and knowledge to participate in this study and offer critical insights that can be used for making decisions on employee empowerment issues. Thus, from these participants, the results of the interviews are as follows.

What are the impacts of employee empowerment on employee motivation at Company X?

Findings imply that apart from catalysing improved employee motivation, employee empowerment also improves job satisfaction, better quality of customer services and productivity.

Employee Motivation

Findings suggest that employee empowerment improves employee motivation. It was common across the views of the forty participants that empowerment provides employees with the power to determine their own destiny. This motivates the employees. Some of the participants explained that employee empowerment provides employees with the freedom to do what?. As compared to when there is frequent management intervention, they stated that empowerment motivates them to work even harder. Such a view is corroborated in the opinions of one of the interviewed employees who argued that:

“Empowerment provides us with the freedom to determine how the allocated tasks must be accomplished. As compared to when management intervenes quite frequently, this tends to motivate us to work even harder.”

In other words, the participants reiterated that they enjoy the freedom of working without frequent unnecessary management intervention and this motivates them. However, elements that motivate and empower employees were lacking in most of the employee empowerment and motivation initiatives at Company X. Literature considers critical elements for motivation, namely rewards/promotion, friendly environment, opportunity to grow, supportive management and challenging goals (Sharma &

Sahoo, 2014:174; Jones, 2013:190; Batool & Akhorshaideh, 2017:87; Kim, Murrmann, Gyumin & Thomas, 2012:10).

For example, reward requires the use of the appropriate financial or non-financial measures for rewarding employees (Sharma & Sahoo, 2014:174). The extent to which employees are availed with the opportunities to grow in their career often motivates them. Opportunity to grow can be availed by providing excelling employees with special assignments (Jones, 2013:190), and providing equal promotional opportunities to all employees (Jones, 2013:190). Some of the participants stated that as employees are empowered; it exposes them to more challenging tasks. In effect, they take such challenges as an opportunity to learn new things and develop.

Employee empowerment enables employees to self-manage themselves. This is stimulating and motivating as compared to working under the direct supervision of the management. Such a view is substantiated in the opinions of one of the employees who stated that:

“Empowerment is good. One becomes his or her own boss and it is motivating because there is no direct management supervision and interference. This motivates me as an employee.”

Job Satisfaction

It emerged from the findings that employee empowerment improves job satisfaction. The participants explained that empowerment contributes to improved job enlargement. This in turn increases the level of job satisfaction among the employees.. Such a view is accentuated in the opinions of one of the employees who stated that:

“Employee empowerment has motivated me a lot. Before I was working under direct management supervision and I could not contribute anything on how my work must be done. This affected my job satisfaction. However, after the implementation of empowerment initiatives, I was able to contribute to how my work must be done. This contributed a lot to my job satisfaction as well as motivation.”

Employee empowerment enables employees to feel their valued in the organisation. It improves job enrichment that in turn eliminates boredom that often cause stress to undermine effective activities' accomplishment. High level of autonomy to make critical decisions as well as power to access relevant information and resources enhances job satisfaction (Kumar & Kumar, 2017:33).

Quality of Customer Services

Findings imply that empowerment improves quality of customer services. The participants explained that empowerment makes them work more efficiently. This improves quality of customer services. Such a view is corroborated in the opinions of one of the employees who stated that:

“Since I am in charge of how the activities must be done, I will definitely work more efficiently. This will enable me to effectively respond to customer needs, which is good for the realisation of the effective performance of the business.”

Productivity

Findings indicated that employee empowerment improves productivity. Employee empowerment eliminates unnecessary interruptions from management as employees are discharging their duties. This speeds up accomplishment of tasks. Such a view is corroborated in the opinions of one of the employees who stated that:

“Empowerment has eliminated the need for frequent management intervention in the process of activities' accomplishment. This has caused the increment in the speed of activities' accomplishment. Most of the employees feel inconvenienced by frequent unnecessary management intervention in the process of activities' accomplishment. Hence, the elimination of such unnecessary interventions cause increment in speed and subsequently improved productivity.”

Such interview findings support theoretical reasoning that decentralised structures in which employees plan and determine how the organisational activities must be accomplished improves productivity (Kim *et al.* 2012:10).

Certainly, it is evident that apart from catalysing improved employee motivation, employee empowerment also influences improvement of job satisfaction, better quality of customer services and productivity.

Even though findings indicated employee involvement enhances employee empowerment, some of the participants still pointed out that employee involvement is ineffective. They explained that although management encourages everyone to contribute through the suggestion box, such views are not considered. As they explained, the implications are latent in the fact that it is not surprising to suggest one thing and find out that the decision made did not take into consideration the suggestion made by the employees. This according to most of the participants affects the use of employee involvement as an empowerment tool. Besides such a limitation, some of the participants also noted that the representatives who sit in the top management decision-making bodies do not do much because they sit as subordinates and not as managers. This affects their capabilities to effectively contribute. Nevertheless, despite such a view, it was still evident that findings indicated that the strategies which are used for improving the implementation of employee empowerment at Company X encompass training and development, delegation of duties to lower employees, development of workgroups, integration of empowerment issues in human resource manual, coaching and mentoring, and employee involvement. All these have impacted positively on the improvement of the motivation of the employees of Company X. It is evident that apart from catalysing improved employee motivation, employee empowerment also influences improvement of job satisfaction, better quality of customer services and productivity. However, despite such a finding, quests to ensure that employee empowerment influence improved motivation seem undermined by a combination of certain limitations. Findings indicate that the limitations of employee empowerment as a catalyst for employee motivation at Company X encompass fear of the disastrous effects of empowerment, lack of management commitment, poor skillfulness of the employees, lack of resources and high level of labour turnover. Against this backdrop, the discussions in the next chapter document the general conclusion and recommendations of the study.

8. Managerial Implications

This research suggests that employee empowerment is one of the pivotal strategies that can be employed by organisations that seek to improve employee motivation and performance. To ensure the successful implementation of employee empowerment as a catalyst for employee motivation, it is recommended that the management of Company X must consider adopting the strategies that encompass:

- It is critical that the management of Company X adopts training and development as part of the strategies for ensuring the successful implementation of employee empowerment initiatives. This is attributable to the fact that findings indicated that poor skillfulness of the employees is one of the challenges marring the successful implementation of employee empowerment initiatives at Company X. Training will have to focus on building the management competencies of the selected employees. It will also focus on improving the decision-making competencies of the employees such as supervisors who are in key management positions. Training and development must also be accompanied with the use of coaching and mentoring. In terms of coaching and mentoring, the management can select employees who are given coaches and mentors. Such training and development programmes will prepare the employees for assignment of more complex tasks. This would improve the successful implementation of employee empowerment initiatives. However, as training and development is being undertaken, it must be accompanied with the initiatives for ensuring that jobs are appropriately designed.
- To enhance the successful implementation of employee empowerment measures, the management of Company X must also ensure that there is appropriate job redesign. Jobs must be redesigned in the way that they allow the empowerment of the employees. To accomplish this, jobs must be designed in the way that do not only facilitate the effective accomplishment of the allocated tasks, but also provide powers over decision-making. This would require the management of Company X to integrate the principles of job enlargement and job enrichment

to make the job more interesting. Such a view is accentuated in the fact that it was pointed out in the findings that there is a challenge of employee retention. The application of the principles of job enlargement and job enrichment will expand a variety of the tasks that the employees are expected to accomplish. This will improve the effectiveness of the empowerment process. However, the application of such measures must be accompanied with the delegation of functions.

- The management of Company X will have to adopt delegation of management functions if they are to ensure the successful implementation of employee empowerment. Delegation of functions will enable management to watch if the employees can be allowed to work independently and autonomously. This can be accomplished by delegating management functions to the lower-level managers and employees. This will improve Company X's quests to empower their employees. However, such initiative will have to be accompanied with the use of the concept of employee involvement.
- The use of employee involvement is the other strategy that the management of Company X can apply to ensure the successful implementation of employee empowerment. This can be accomplished by appointing representatives of the employees' workgroups that participate in management decision-making processes. It may also require the development and use of suggestion box to ensure that each and every employee contributes to the decision-making processes. These would improve the empowerment of the employees. However, as such initiatives are being undertaken, it must be accompanied with the initiatives for ensuring that sufficient resources are allocated for the implementation of employee empowerment measures.
- The management of Company X must also ensure that sufficient resources are allocated for the implementation of the empowerment measures. This is attributable to the fact that findings indicated that there is a challenge of lack of resources for the implementation of empowerment measures. To reverse this, the management of Company X must not treat expenditure on employee empowerment initiatives as expenditure. Instead, they should treat it as an investment because the implementation of employee empowerment initiatives is associated with enormous values such as improved motivation, better quality of customer services and improved productivity and job satisfaction. All these would impact positively on the performance of Company X if they were to invest in employee empowerment. Yet, as such measures are being implemented; management must also provide the necessary support and commitment.
- Top management of Company X must also provide the necessary support and commitment to ensure the successful implementation of employee empowerment measures. Such a view is attributable to the fact that findings revealed that there is a challenge of top management support and commitment. Instead of viewing employee empowerment as a waste of time, the top managers at Company X must view it as a performance improvement measure. They need to provide the necessary support and commitment to ensure that the implementation of employee empowerment measures is successful.
- Future research can explore the impact of employee empowerment on a firm's productivity. This is attributable to the fact that most of the previous and existing studies only focus on examining the process for the implementation of employee empowerment. On the otherhand, other studies only evaluate the effects of employee empowerment on the general organisational performance. Even though such studies have enriched the existing theories and literature on employee empowerment, they have still not gone into details to examine how employee empowerment directly edifies specific areas of concern like employee motivation, productivity and product quality. Since, this research has already explored the direct impact of employee empowerment on motivation; future research can deal directly with the impact of employee empowerment on specific areas like productivity. Such studies must not only examine the direct effects of employee empowerment on employee productivity, but also how it translates into improved overall organisational productivity. Combined with the outcome of this research, such future studies will influence companies like Company X to treat employee empowerment issues seriously.

- Once company executives recognise and gain insights into the fact that employee empowerment is actually one of the critical influencers of productivity, lower operational costs, better quality, motivation and better organisational performance that translate into increased profitability, they will not be reluctant anymore to successfully implement employee empowerment programmes in their organisations. In other words, company executives' recognition of the significant values of employee empowerment will improve company executives and top management's buy-in to eliminate the politics and scepticisms at the company executive level and senior management that often undermine successful implementation of employee empowerment programmes. However, to achieve that, future research must focus on evaluating the direct impact of employee empowerment on productivity because it is productivity that most of the company executives are often concerned about. In other words, such reasoning is further echoed in the managerial implications of this research. In that context, future research may also evaluate management's take on employee empowerment and its impact on motivation/productivity.

9. Conclusion

In this section, the study's general conclusions and recommendations are presented. The conclusion section offers insights into the critical primary and secondary research findings. Against the vital preliminary findings in the conclusions, recommendations are detailed to high the improvement strategies that Company X must adopt to improve the implementation of its employee empowerment as an influencer of employee motivation, job satisfaction, better quality customer services and productivity.

Findings imply that apart from catalysing improved employee motivation, employee empowerment also influences improvement of job satisfaction, better quality of customer services and productivity. It was common across the views of the forty participants that empowerment provides employees with the power to determine their own destiny. This tends to motivate the employees. Some of the participants explained that employee empowerment provides employees with the freedom. As compared to when there is frequent management intervention, they stated that this motivates them to work even harder. In other words, findings imply that the fact that empowerment provides the ordinary employees with the power and decision-making authority tends to motivate the employees. Yet, as the employees are motivated, findings indicated that they also tend to realise improved level of job satisfaction. It emerged from the findings that employee empowerment influences improved job satisfaction. The participants explained that empowerment contributes to improved job enlargement. As they stated, this causes a variety of tasks that eliminate boredom. They revealed that this renders the work more interesting to increase the level of job satisfaction among the employees. Meanwhile, some of the participants stated that the fact that employees are granted power and authority over decision-making tends to render the work more motivating and satisfying. They explained that empowerment makes an employee becomes his or her own boss in determining how the allocated tasks must be accomplished.

Yet, as job satisfaction improve; it also tends to impact positively on improved quality of customer services. The participants explained that as employees become satisfied and motivated as a result of empowerment, it tends to render them to work more efficiently. As they stated, improved efficiency impacts on the quality of customer services. In turn, they explained that this causes the attraction and retention of customers from the competitors. Improved efficiency renders it possible for the business to effectively meet customer needs. This influences the overall improvement of an organisation's effective performance. However, despite such a finding, quests to ensure that employee empowerment influence improved motivation seem undermined by a combination of certain limitations.

Findings indicate that the limitations of employee empowerment as a catalyst for employee motivation at Company X encompass fear of the disastrous effects of empowerment, lack of management commitment, poor skillfulness of the employees, lack of resources and high level of labour turnover. The participants explained that management fear that granting the ordinary employees control and power over decision-making authority would distort the effective process for

activities' accomplishment. They reiterated that management feels that granting powers to the ordinary employees would affect the capabilities of the business to achieve its strategic goals and objectives. In other words, findings imply that management fear losing control. This would affect the performance of the business. Findings suggest that some of the managers feel that empowerment in practical sense cannot work. This has affected the implementation of empowerment measures at Company X. In other words, there is a challenge of management commitment.

As findings indicated, some of the managers were found to state that empowerment cannot work. In effect, it was common across the views of most participants that issues of employee empowerment are only raised by management as a formality without real effort to ensure that it is implemented. As the participants noted, this affects the successful implementation of employee empowerment initiatives at Company X. The participants explained that this is reflected in the fact that although empowerment issues are integrated in the human resource manual, there is little effort to ensure that it is implemented.

However, besides lack of management commitment, findings indicated that challenges are arising from the poor skillfulness of the employees. Most of the managers stated that even if management is committed to enforce the implementation of empowerment, the challenge remains the poor skillfulness of most of the employees. They explained that the challenge is that Company X employees a large number of semi-illiterate employees that cannot be entrusted with powers over decision-making. Even though efforts have been undertaken to train them, the managers noted that there is still a large number of semi-illiterates who are mainly employed in the farms and factory. This undermines the successful implementation of empowerment initiatives. Yet, as findings indicated, this is further compounded by lack of the required resources. In other words, the employee empowerment and motivation approach being used at Company X contradicts the approach articulated in theories and literature on employee empowerment and motivation.

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Servant Leadership and Engagement: The Role of Trust in Selected South African Universities

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Keywords

Servant leadership; work engagement; trust; academic staff; South Africa, university; higher education institutes

Abstract

The study aimed to assess the role of trust in the relationship between servant leadership and work engagement of academic staff in four selected South African universities. A cross-sectional survey design was employed, using non-probability sampling (N=206). The Servant Leadership scale, Utrecht Work Engagement Scale and the Trust In/Loyalty to the Leader scale were utilised to measure the study constructs. Results indicated that servant leadership was related to trust, while both servant leadership and trust serve as predictors for work engagement. Recommendations for practical implantation and future studies are provided, after addressing the limitations of the study.

1. Introduction

Reports in both print and electronic media are indicative of moral bankruptcy in contemporary South African society. In addition to the economic and political crisis faced in the country, the prevalence of disturbing pathologies renders South Africa an ailing society (Sekhauelo, 2021:1). Taking into account the endemic spread of corruption (De Klerk & Solomon, 2019:69-73; Odeku, 2018:44-45; Sekhauelo, 2021:5-6) and the increase in voter apathy (Wolhuter *et al.*, 2020:1), it can be argued that voters have lost faith in leadership to serve the interest of the general public instead of their own. Unfortunately, the higher education sector has not remained untainted by acts of crime and corruption (Hunter, 2017; Pijoos, 2022; Pityana, 2020; Singh, 2020). Recent breakdowns in leadership and governance in three South African universities are indicators of pervasive corruption that has infiltrated key management structures (Kobokana, 2022; Pityana, 2020).

Servant leadership can be described as a serving-oriented, people-centred and morally-inclined approach to leadership (Liden *et al.*, 2014a:6; Sendjaya *et al.*, 2008:405; Van Dierendonck, 2011:1228), as first introduced by Greenleaf (1970:1-28) in the 1970s. Fundamental to this concept is the willingness to serve, prioritise the needs of others (Eva *et al.*, 2019:114) and behave ethically (Liden *et al.*, 2015:255). The focus on service and morality offers a solution to address the problem of a lack of integrity and the moral decay experienced in South African higher education.

Fostering a positive psychological perspective instead of focusing on the negative can help stakeholders in higher education to generate constructive outcomes to address problems (Seligman and Csikszentmihalyi, 2000:7). The other-centred perspective of servant leadership is suggested to have a positive influence on the work engagement of academic staff (Aboramadan *et al.*, 2020b:626). Thereby, this perspective provides not only a remedy for the spread of crime and corruption (Kgatle, 2018:7; Manala, 2014:262) in the higher education sector but also a way to counteract its adverse effects on work engagement (Friesenbichler *et al.*, 2018:71).

This paper aims to assess whether servant leadership behaviours exhibited by academic managers have a positive impact on the work engagement of academic staff and to determine the role of trust in this relationship. The remainder of this paper follows the following structure: The next section clarifies the research problem, followed by the literature review of the constructs examined in the study. The succeeding section introduces the research questions and objectives. The paper continues with a description of the research method, after which the results and findings of the study are

presented and discussed. The paper concludes with theoretical contributions, practical recommendations, limitations and the identification of potential future research.

2. Problem Statement

Systemic corruption in private and public institutes, moral decay, voter apathy, failing NDP objectives for Higher Education and significant levels of dropout rates are rampant in South Africa (Bureau for Economic Research, 2020:18; De Klerk & Solomon, 2019:69-73; Mkhize & Otu, 2018:161; Odeku, 2018:44-45; Sekhaulelo, 2021:5-6; Wolhuter *et al.*, 2020:1). These problems beg the question of what is causing these negative social phenomena and what can be done to stop these occurrences. The lack of moral leadership in the South African social fibre and the serving of self-interest are possible explanations for the pervasiveness of these negative impacts (Ebekozi, 2019:52; Hope, 2017:4). Further to the argument is the prevalence of leadership in serving the best interest of others, empowering communities and prioritising ethical behaviour to offer a solution to combat and reverse the adverse effects of these elements (Kgatle, 2018:7; Manala, 2014:262; Manara *et al.*, 2020:11).

It is also important to consider how inefficiencies in the Higher Education system and the arguable lack of servant leadership at universities affect the personnel working at higher education institutions and their willingness to engage in their work optimally. Even though the relationship between servant leadership and work engagement in the context of Higher Education has previously been confirmed (Aboramadan *et al.*, 2020b:626), it remains to be examined in the South African Higher Education context, a gap this research paper aims to address. Likewise, the positive relationship between servant leadership and trust has been well established in previous research, but not necessarily in the context of Higher Education. The same goes for the positive relationship between trust and work engagement.

It is worth considering whether trust can be used as a mechanism to facilitate work engagement in academic staff through the presence of servant leadership behaviour in academic leaders. In other words, the question can be posed: what role does trust in the academic leader have in the relationship between servant leadership characteristics displayed by the leader and the extent to which academic staff are fully engaged in work?

The main purpose of this study was to investigate the role of trust in the leader in the relationship between servant leadership characteristics displayed by academic leaders and the work engagement of academic staff. The study followed two conceptual frameworks. The first model assumed a unidimensional perspective of study variables, as illustrated in Figure 1 below.

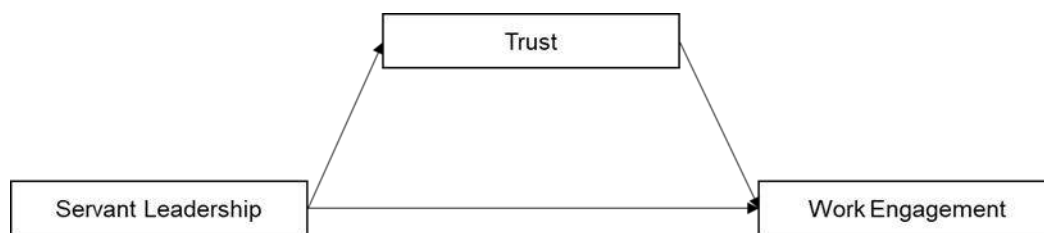


Figure 1: The proposed conceptual framework, based on global constructs

The second model investigated the role of trust in the relationship between servant leadership and work engagement by breaking down work engagement into the sub-variables of vigour, dedication and absorption, as demonstrated in Figure 2 below. The study also aimed to make recommendations for future research and higher education institutes regarding ways to improve the work engagement of academic staff through the employment of strategies that build servant leadership and trust.

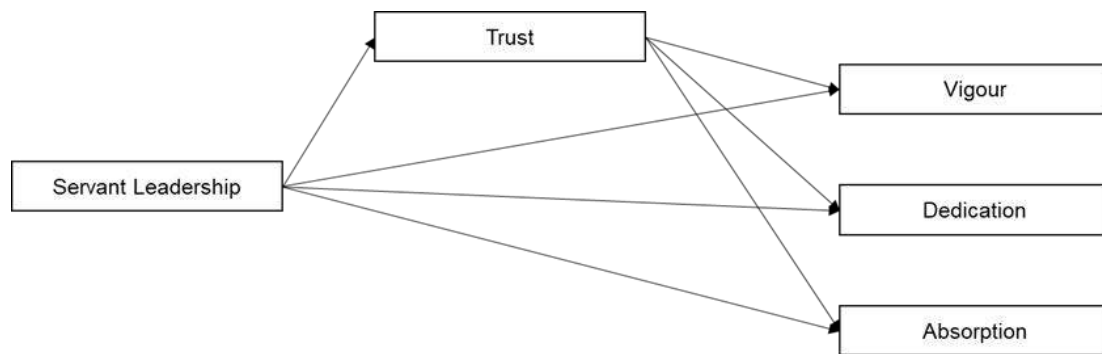


Figure 2: The proposed conceptual framework, based on the sub-variables of work engagement

3. Research Questions

The primary question of this study concerns itself with the following: What is the role of trust in the relationship between servant leadership and the work engagement of academic staff in South African universities?

The following secondary questions were formulated to support the answering of the primary research question:

- What is the relationship between servant leadership and work engagement and its components in academic staff in South African universities?
- What is the relationship between servant leadership and trust in academic staff in South African universities?
- What is the relationship between trust and work engagement and its components in academic staff in South African universities?
- Does trust serve as a mediator in the relationship between servant leadership and engagement and its components amongst academic staff in South African universities?
- Does trust serve as a moderator in the relationship between servant leadership and engagement and its components amongst academic staff in South African universities?
- Do servant leadership and trust serve as significant predictors of engagement and its components amongst academic staff in South African universities?

4. Research Objectives

The primary objective of the study was to determine the role of trust in the relationship between servant leadership and the work engagement of academic staff in South African universities. The following secondary objectives were formulated to support the achievement of the primary objective:

- To evaluate the relationship between servant leadership and work engagement and its components in academic staff in South African universities.
- To determine the relationship between servant leadership and trust in academic staff in South African universities.
- To establish the relationship between trust and work engagement and its components in academic staff in South African universities.
- To determine the mediating role of trust in the relationship between servant leadership and engagement amongst academic staff in South African universities.
- To determine the moderating role of trust in the relationship between servant leadership and engagement and its components amongst academic staff in South African universities.
- To determine if servant leadership and trust serve as significant predictors of engagement and its components amongst academic staff in South African universities.

5. Literature Review

5.1. Servant leadership

5.1.1. The conceptualisation of servant leadership

Many prominent business and leadership theorists regard service as one of the most critical attributes contemporary leaders require in the 21st century (Dannhauser, 2007:19). Although power is inherently associated with leadership, according to Nair (1994:59), it exists only to serve. Servant leadership as first introduced by Greenleaf (1970:1-28) is a people-centred, serving-oriented and morally-inclined leadership perspective (Liden *et al.*, 2014a:6; Sendjaya *et al.*, 2008:405; Van Dierendonck, 2011:1228). Greenleaf (1977:13) describes the servant leader as a servant first, from which a conscious decision is made to lead in selfless service to others. The servant leader's responsibility extends beyond prioritising the needs of individual followers to serving society as a whole (Liden *et al.*, 2008:162). Parris and Peachey (2013:378) summarise servant leadership theory as a focus on serving others through recognising that the purpose of organisations is not to achieve the self-interest of its leaders but to develop people who foster the building of a brighter future for the greater community.

In a recent systematic review of the core characteristics of servant leadership, Eva *et al.* (2019:114) offer an integrative definition consisting of the motive, mode and mindset of the servant leader. In this three-feature definition, servant leadership is defined as (1) an other-oriented approach to leadership (2) established through the individualised prioritising of follower needs and interests, (3) and the outward reorientating of the leader's concern for self towards a concern for others within the organisation and the wider community (Eva *et al.*, 2019:114). Importantly, an additional undertaking of the servant leader is to nurture followers into becoming servant leaders, through the behavioural modelling of serving others (Greenleaf, 1977:14; Xu *et al.*, 2020:46).

Drawing on the key foundational elements of servant leadership laid by Greenleaf, Spears (1995:4-7) offers elaborated explanations of the ten servant leadership characteristics of listening, empathy, healing, awareness, persuasion, conceptualisation, foresight, stewardship, commitment to the growth of people and building community (Spears, 2010:27-29). The first generally accepted servant leadership measure was designed by Ehrhart (2004:93), which consists of 14 items and measures the seven dimensions proposed by Ehrhart (Eva *et al.*, 2019:112; Liden *et al.*, 2014a:3; Xu *et al.*, 2020:51). The seven dimensions comprise: putting followers first, possessing conceptual skills, ethical behaviour, assisting followers to succeed and grow, forming relationships, empowering followers and creating value for the community (Ehrhart, 2004:67-70). Another prominent conceptual framework proposed by Sendjaya *et al.* (2008:406-409) identifies six dimensions of servant leadership, consisting of voluntary subordination, authentic self, covenantal relationship, responsible morality, transcendental spirituality and transforming influence. Based on a literary analysis and interviews conducted with servant leaders, Van Dierendonck and Nuijten (2011:251-252) selected eight elements deemed most appropriate to indicate servant leadership, namely empowerment, accountability, standing back, humility, authenticity, courage, interpersonal acceptance and stewardship.

Based on the existing taxonomies of servant leadership (Barbuto & Wheeler, 2006:300-326; Page & Wong, 2000:69-110; Spears & Lawrence, 2002:1-414), Liden *et al.* (2008:162) initially identified nine characteristics of servant leaders, but subsequently reduced the dimensions to seven (Liden *et al.*, 2008:169; Liden *et al.*, 2015:255). The first taxonomy, emotional healing, is the degree to which a leader shows concern for the well-being and personal matters of subordinates. The second, creating value for the community, indicates the extent to which the leader promotes and assists in community participation. Thirdly, conception skill refers to the problem-solving ability of a leader and the competency to conceptualise organisational objectives. Fourthly, empowering reflects the degree to which a leader creates opportunities for followers to possess autonomy, responsibility and influence, through the manifestation of trusting relationships. Fifthly, helping subordinates grow and succeed indicates the commitment of a leader to empowering subordinates to reach their full career potential. Sixthly, putting subordinates first shows how a leader prioritises the needs and pursuits of followers above their own. Lastly, behaving ethically infers that a leader serves by building trust, modelling integrity and acting with honesty.

5.1.2. Consequences of servant leadership

Since the conceptualisation and measurement of servant leadership are well established, researchers have turned to investigate the consequences of servant leadership (Xu *et al.*, 2020:52). Servant leadership has the potential to provide positive consequences to a variety of stakeholders, namely employees, the organisation, customers and the community (Xu *et al.*, 2020:55). The importance of servant leadership, especially in South African Higher Education's current corruption climate, is found in its association with positive psychological employee and organisational outcomes to reverse the adverse effects of corruption. In other words, corruption is less likely to occur when employees are, for instance, engaged (Schaufeli, 2018:103), satisfied (Tafolli & Grabner-Kräuter, 2020:1360) and committed to the organisation (Fu, 2014:141; Okpara & Wynn, 2008:946).

Servant leadership has been found to enhance job performance (Bayram & Zoubi, 2020:1775; Chiniara & Bentein, 2016:135; Liden *et al.*, 2014b:1445; Van Dierendonck, 2011:1249), increase job satisfaction (Aboramadan *et al.*, 2020a:575; Barbuto & Wheeler, 2006:316; Cerit, 2009:615; Chan & Mak, 2014:281; Mayer *et al.*, 2008:192), lead to more engaged employees (Aboramadan *et al.*, 2020b:627; Carter & Baghurst, 2014:461; Coetzer *et al.*, 2017:19; De Clercq *et al.*, 2014:201; De Sousa & Van Dierendonck, 2017:21), foster organisational commitment (LaPointe & Vandenberghe, 2018:109; Liden *et al.*, 2008:174; Miao *et al.*, 2014:738; Van Dierendonck *et al.*, 2014:559) and reduce stress levels (Babakus *et al.*, 2011:25; Jaramillo *et al.*, 2009b:269). The most common examined follower behavioural outcome associated with servant leadership is likely that of organisational citizenship behaviours (OCB), which have been found to yield a positive relationship in numerous studies (Chiniara & Bentein, 2016:135; Hunter *et al.*, 2013:325; Liden *et al.*, 2015:264-265; Mahembe & Engelbrecht, 2014:8; McCallaghan *et al.*, 2020:381; Newman *et al.*, 2017:58; Panaccio *et al.*, 2015:670; Shim *et al.*, 2016:15; Walumbwa *et al.*, 2010:526; Zhao *et al.*, 2016:909). Findings have also indicated a positive relationship between servant leadership and the reduction of negative employee attitudes, such as intentions to quit (Hunter *et al.*, 2013:327; Jang & Kandampully, 2018:135; Jaramillo *et al.*, 2009a:358; Liden *et al.*, 2014b:1446), burnout (Babakus *et al.*, 2011:25; Upadyaya *et al.*, 2016:106), workplace deviant behaviour (Sendjaya *et al.*, 2019:950; Verdorfer *et al.*, 2015:245) and job cynicism (Bobbio *et al.*, 2012:239; Chi *et al.*, 2020). According to Xu *et al.* (2020:59), the lessening of negative employee outcomes can be explained through the impact of fundamental processes associated with servant leadership, such as its ability to foster a serving culture (Liden *et al.*, 2014b:1446), build a climate of trust (Ling *et al.*, 2017:64) and satisfy the basic psychological needs of followers, including that of autonomy, competence and relatedness (Chiniara & Bentein, 2016:135; Mayer *et al.*, 2008:192; Van Dierendonck *et al.*, 2014:559).

Despite the many positive aspects that have been identified, servant leadership also possesses potentially harmful consequences. Less researched than the benefits, the dark side of servant leadership can be experienced by followers, the leader and the organisation. For followers, servant leadership is not the leadership style by which all prefer to be led. Especially in cultures prone to high power distance, the close-relationships servant leaders form with followers might result in discomfort in followers (Xu *et al.*, 2020:64). In a recent study, Lacroix and Verdorfer (2017:8) identified a small but significant tendency in servant leadership followers to experience leadership avoidance, possibly due to the perception that leadership standards are too overwhelming. Followers might also be manipulated by disingenuous leaders portraying servant leadership attributes, but only as a means of selfish gain (Stone *et al.*, 2004:358) and, in doing so, fail to meet the servant-first essence of servant leadership.

For servant leaders, the potential harm is found in experiences of emotional fatigue, work overload, role ambiguity and role conflict (Liden *et al.*, 2014a:5) caused by indicators of short- and long-term strain associated with servant leadership characteristics (Rivkin *et al.*, 2014:67-68). In contrast to the improved quality of family life found in followers (Wang *et al.*, 2017:399; Zhang *et al.*, 2012:761), servant leaders experience an increase in work-life conflict, brought on by emotional exhaustion (Liden *et al.*, 2014a:5; Tang *et al.*, 2016:293; Zhou *et al.*, 2020:7). Engaging in daily servant leadership behaviour may result in experiences of self-control depletion for leaders and consequently a disengagement from leadership responsibilities (Liao *et al.*, 2021:1207). For organisations, the

potential harm is associated with the high regard servant leaders place on enhancing the well-being of all stakeholders served. The balancing of needs, interests and desires from multiple stakeholders can be troublesome, particularly in instances where needs, interests and desires are conflicting (Xu *et al.*, 2020:66). Scenarios where servant leaders prioritise the well-being of others over that of the organisation raise concern for the adverse consequences of servant leadership in organisations (Andersen, 2009:11-12).

5.2. Work engagement

5.2.1. The conceptualisation of work engagement

Work engagement stems from the increased attention positive psychology has received over the last two decades. Positive psychology moves beyond the traditional perspective of disease, disorder, damage and disability; it also examines the strength and virtues of human beings (Seligman & Csikszentmihalyi, 2000:7). The purpose of which is to study the strengths and optimum performance of individuals, exploring the human resources that positively affect psychological capabilities (Barkhuizen & Rothmann, 2006:38).

The first proposal toward a conceptualisation of engagement at work was put forward by Kahn (1990:694), who defines engagement as the act of harnessing oneself to a work role through the expression and application of the individual physically, emotionally and mentally while performing work. Otherwise stated, engaged employees are driven to put additional effort into their job for the reason that they identify with it (Schaufeli & Bakker, 2010:12). Kahn (1990:700) continues by explaining personal engagement as the concurrent employment and expression of an individual's ideal self in activities that facilitate personal presence, active job performance and connection with work. Engagement is therefore a motivational concept driven by the investment of personal resources that results in physical, emotional and cognitive dimensions, creating a connection between employees and their work roles (Rich *et al.*, 2010:617).

The opposite of personal engagement is personal disengagement and is described as an individual's withdrawal from the behaviours that facilitate the connection with work, consequently leading to performing work activities at an emotional and cognitive distance (Kahn, 1990:702). Based on the foundation of Kahn, Rothbard (2001:656) presents engagement as a two-dimensional construct that consists of attention and absorption. Attention refers to the intellectual capacity and amount of time spent thinking about work, while absorption represents the extent to which a person is engrossed in their work and the intensity of their focus (Rothbard, 2001:656). In an attempt to measure engagement, May *et al.* (2004:31) propose engagement to consist of three components, namely physical, emotional and cognitive. An alternative perspective on engagement is offered by scholars who view work engagement as the positive antithesis of burnout (Maslach *et al.*, 2001:416). According to Maslach and Leiter (1997:34), engagement is characterised by energy, involvement and efficacy, which are considered opposites to the three burnout dimensions of exhaustion, cynicism and professional efficacy (Maslach *et al.*, 2001:402-403).

A third perspective and arguably the most widely held, is that work engagement is an independent and distinct concept and, although negatively related to burnout, should be measured separately (Schaufeli *et al.*, 2002:74). According to Schaufeli *et al.* (2002:74), work engagement is defined as a positive and gratifying psychological state related to work that is identifiable through the three dimensions of vigour, dedication and absorption. Vigour refers to the display of high levels of energy and psychological resilience in the workplace, investments of effort in work and persistence when faced with challenges. Dedication refers to the experience of a strong sense of pride or importance for being involved in work which serves as a source of enthusiasm and feelings of significance. Lastly, absorption refers to the pleasant state of being fully engrossed in work, characterised by the quick passing of time and application of significant concentration effort and the extent to which it is difficult to detach from work. Rather than being directed at a specific task, person, item or event, engagement is considered a persistent and universal affective-cognitive state (Schaufeli & Bakker, 2004:295).

According to Bakker (2011:265), work engagement can be viewed as different from job satisfaction to the extent that it merges the pleasure of work with high levels of activity, whereas job satisfaction is considered a passive form of employee well-being. Even though a significant correlation between engagement and satisfaction exists, engagement has been found to offer increased task and contextual performance (Christian *et al.*, 2011:120). Engagement differs from motivation in its association with effect and cognition beyond mere dedication (Bakker, 2011:265). Engagement also differs from work-related flow in duration, as flow is typically viewed as a short peak in performance and engagement as a longer performance episode (May *et al.*, 2004:13). Workaholism is a result of over-absorption and can explain why workaholism is characterised by an inability to disengage from work (Schaufeli *et al.*, 2008:193). The fundamental difference between engaged employees and workaholics is that engaged employees work hard because they find their work challenging and pleasurable, unlike their counterparts who display an inability to resist an inner urge (Schaufeli & Bakker, 2010:15). Schaufeli *et al.* (2008:189) also found a positive relationship between workaholism and burnout, where burnout shares a negative relationship with work engagement.

5.2.2. Consequences of work engagement

Work engagement is considered a positive experience related to positive behaviour and the well-being of employees (Schaufeli, 2002:74) but has also been found to have positive impacts on organisational outcomes and the experience of the customer. Considering the endemic nature of corruption in higher education in contemporary South Africa, work engagement might play an important role in combating its prevalence, as it has been found to have a direct negative effect on corruption (Schaufeli, 2018:103) and a potential indirect effect through other positive employee and organisational outcomes (Fu, 2014:141; Okpara & Wynn, 2008:946; Tafolli & Grabner-Kräuter, 2020:1360).

Work engagement has been found to promote job satisfaction (Cole *et al.*, 2012:1569; Diedericks & Rothmann, 2013:230-231; Karanika-Murray *et al.*, 2015:1026; Saks, 2006:613; Yeh, 2013:229), facilitate organisational commitment (Aboramadan *et al.*, 2019:162; Cole *et al.*, 2012:1569; Hakanen *et al.*, 2006:507; Saks, 2006:613; Taba *et al.*, 2014:7), foster OCB and extra-role behaviour (Babcock-Roberson & Strickland, 2010:322; Eldor & Harpaz, 2016:227-228; Saks, 2006:613; Shantz *et al.*, 2013:2620-2621; Sulea *et al.*, 2012:200), increase job performance (Bakker & Bal, 2010:200; Christian *et al.*, 2011:116; Lin *et al.*, 2016:153; Rich *et al.*, 2010:628; Van Wingerden & Van Der Stoep, 2018:7), improve health and well-being (Cole *et al.*, 2012:1569; Radic *et al.*, 2020:5; Tesi *et al.*, 2019:133). On an organisational level, engagement has been found to have a significant impact on team performance, financial indicators and customer satisfaction (Harter *et al.*, 2002:275; Schneider *et al.*, 2018:13; Xanthopoulou *et al.*, 2009b:197), as well as entrepreneurial performance, innovative behaviour and business growth (Gorgievski *et al.*, 2014:115). Work engagement is also known to reduce negative employee outcomes, such as intentions to quit (Chen & Chen, 2012:54; Saks, 2006:613; Schaufeli & Bakker, 2004:310), hindrance demands (Crawford *et al.*, 2010:842-843) and deviant behaviour (Shantz *et al.*, 2013:2620-2621; Sulea *et al.*, 2012:200).

Despite the many known positive effects of work engagement, it also has the potential for negative consequences. Bakker *et al.* (2011:18) and Sonnentag (2011:33) propose that being over-engaged could have negative costs, detrimental to performance and work-life balance. According to Halbesleben *et al.* (2009:1460), work engagement is positively related to work interference with family, with OCB mediating the relationship, while conscientiousness engaged employees fare better in balancing work and family obligations. A recent study suggests that work engagement holds a curvilinear relationship with health and performance (Shimazu *et al.*, 2018:10). In the short term, high levels of engagement are found to yield high levels of psychological distress but diminish over a longer period. According to Shimazu *et al.* (2018:10), over time employees craft their job roles in such a manner as to accumulate additional job resources, which reduces job demand and improves mental health

5.3. Trust

5.3.1. The conceptualisation of trust

Trust has largely been considered a complex topic, difficult to decisively define and not comfortability studied empirically (Hay, 2002:43; Reinke, 2004:50). Despite the confusion surrounding a universal definition and conceptualisation, trust remains one of the most frequently investigated constructs in contemporary organisational literature (Burke *et al.*, 2007:607; Ferrin, 2013:149; Kim *et al.*, 2018:946). Moving toward a definition in terms of Human Resources and Psychology research, trust is generally concerned with two issues (Nienaber *et al.*, 2015:568). Firstly, trust is viewed as the extent to which a person is prepared to rely on another person in whom confidence is kept (Mayer *et al.*, 1995:712; Moorman *et al.*, 1992:315). Secondly, trust expects that the person in whom trust is placed will behave in a mutually acceptable manner (Sako & Helper, 1998:388). Sheppard and Sherman (1998:422) define trust as the accepting of risks inherent to the interdependence of all relationships. For Rousseau *et al.* (1998:395), trust is a psychological state in which a person accepts vulnerability built on the expected behaviour or intentions of another.

According to Hay (2002:50), the definition of trust largely depends on the context within which it is applied. Definitions of trust can therefore be classified based on the fundamental perspective of what trust is (unchanging trait, process or emergent state), who is trusted and at what level (individual, group or organisational level) (Bunker *et al.*, 2004:413; Burke *et al.*, 2007:610). Interpersonal trust is defined as the extent to which a person has faith in the positive expressions of another person (McAllister, 1995:25). In a conceptual model proposed by McAllister (1995:25-26) and later supported by Gillespie and Mann (2004:589), interpersonal trust has two separately measurable dimensions namely, cognitive and affective trust. Cognitive trust is explained as trust based on reasoning after analysing the evidence of the trustworthiness presented. Affective trust describes the element of trust associated with an emotional response based on the bond that exists in the relationship between two people and the perception of genuine concern for each other.

Group trust is defined as the shared belief by a member of a group about the extent to which the group is collectively willing to be vulnerable to another group (Serva *et al.*, 2005:627). The significance of group trust is found due to the normality and prevalence of group formation in the contemporary business environment and its criticality for business performance. Serva *et al.* (2005:627) also highlight the finding that groups are not merely collections of individuals, but that groups exist as separate entities which demonstrate traits of their own, as a representation of the group as a whole. Within the context of organisational trust, trust is described as the orientation of the collective trust held by the focal members of an organisation toward the partner organisation (Zaheer *et al.*, 1998:142).

Within the context of leader-follower relationships, it can be argued that the relationship represents a combination of interpersonal and interorganisational trust, since the leader may be considered an extension of the organisation while also being an embodiment of an individual. To adapt the definition of organisational trust as proposed by Mayer *et al.* (1995:712) to the context of leader-follower relationships, trust can be explained as the preparedness of a person to be vulnerable to the behaviour of a leader, carrying the expectation that the leader will perform a specific action of significance to the follower, without the need to control or monitor the actions of the leader. Podsakoff *et al.* (1990:113-114) simply defined trust in the leader as the expression of faith and loyalty by followers toward the leader.

In this paper, trust is viewed based on the conceptualisation that trust comprises interpersonal relationships and leadership characteristics which include ability, integrity, benevolence, responsibility and loyalty (Colquitt *et al.*, 2007:910; Mayer *et al.*, 1995:717; McAllister, 1995:25; Podsakoff *et al.*, 1990:115). Ability refers to the level of skills, competency and characteristics required within a particular area of expertise to enable the ability to exercise influence (Mayer *et al.*, 1995:717; McAllister, 1995:25). Integrity refers to the follower's perception that the leader believes in and behaves according to a set of principles that is acceptable to the follower (Mayer *et al.*, 1995:719-720; Podsakoff *et al.*, 1990:115). Benevolence refers to the extent to which the follower believes the

leader will perform in the follower's best interest, putting aside any self-centred motive (Mayer *et al.*, 1995:718-719). Responsibility refers to the extent to which the leader meets the obligations of their role (McAllister, 1995:25). Loyalty refers to the extent to which followers express support and possesses a strong sense of alliance with their leader (Podsakoff *et al.*, 1990:115).

5.3.2. Consequences of trust

The consequences of trust can be summarised based on two levels of outcomes. Behavioural and performance outcomes found to be positively associated with trust are OCB (Dirks & Ferrin, 2002:621; Flavian *et al.*, 2018:15; McAllister, 1995:48; Nohe & Michaelis, 2016:891; Podsakoff *et al.*, 1990:129), knowledge sharing (Abrams *et al.*, 2003:65; Burke *et al.*, 2007:624; Kim, 2019:346; Wickramasinghe & Widyaratne, 2012:229) and job performance (Colquitt *et al.*, 2007:921; Dirks & Ferrin, 2002:621; Kim *et al.*, 2018:954; McAllister, 1995:48; Saleem *et al.*, 2020:11). Job attitude and intention outcomes as a result of trust are job satisfaction (Cho & Park, 2011:564; Cook & Wall, 1980:47; Dirks & Ferrin, 2002:621; Lambert *et al.*, 2021:203; Palupi *et al.*, 2017:405), organisational commitment (Chen *et al.*, 2015:9; Cook & Wall, 1980:47; Flavian *et al.*, 2018:15; Miao *et al.*, 2014:737; Ndlovu *et al.*, 2021:7) and work engagement (Ahamed *et al.*, 2013:168; Buckley, 2011:320-321; De Beer *et al.*, 2018:7; Engelbrecht *et al.*, 2017:374; Lin, 2010:526). Trust is also associated with a negative relationship with deviant behaviour (Colquitt *et al.*, 2007:921; Demir, 2011:216; Litzky *et al.*, 2006:98) and intentions to quit (Dirks & Ferrin, 2002:620; Kim, 2019:346; Tan & Tan, 2000:255; Yurtkoru *et al.*, 2018:20).

5.4. The relationship between servant leadership, work engagement and trust

5.4.1. Servant leadership and trust

Although the selected variables of this study are yet to be investigated within the higher education context in South Africa, numerous studies have been conducted to establish the direct relationship between these variables. Trust resonates with the confidence a follower possesses based on the perception of the leader's competence and willingness to behave fairly and ethically (Mayer *et al.*, 1995:720; Tschannen-Moran & Hoy, 2000:551). Based on the underpinnings of social exchange theory, researchers have identified that a positive psychological state emerges in followers when leaders display sincere concern for their well-being. This concern is then reciprocated by followers through the expression of gratitude and increased trust (Kelloway *et al.*, 2012:42; Zhang & Zhou, 2014:152). According to Kalshoven and Den Hartog (2009:113), trusted leaders display higher leadership effectiveness in improving the performance of subordinates. As expressed by Martin (1998:48), "trust is the root of all great leadership".

The concept of servant leadership has been closely associated with trust through the display of leader integrity and ethical behaviour, which translates into organisational fidelity (De Pree, 1997:127). Greenleaf (1977:25) believed trust to be the primary antecedent and the cornerstone of servant leadership. Several other researchers agree with the importance of building trust among followers as being an integral component of effective servant leadership (Farling *et al.*, 1999:60; Joseph & Winston, 2005:11; Russell & Stone, 2002:148; Sendjaya & Pekerti, 2010:645-646; Van Dierendonck, 2011:1246). While the servant leader's ability to exert influence on followers stems from the existence of trusting relationships (Beck, 2014:304), the relationship is suggested to be circular as servant leadership consequently increases trust through the creation of a trust climate (Ling *et al.*, 2017:62-63). Further evidence exists to support the positive influence of servant leadership on trust (Chatbury *et al.*, 2011:60; Joseph & Winston, 2005:15; Saleem *et al.*, 2020:9-11; Sendjaya & Pekerti, 2010:654; Zargar *et al.*, 2019:2264).

This study not only focused on the relationship between trust and the other study variables but also investigated whether trust mediates and moderates the relationship between servant leadership and work engagement. A mediator or mediating variable can be explained as the variable situated between other variables that imparts the impact of the independent variable onto the dependent variable (Saunders *et al.*, 2019:808). Existing literature provides evidence that trust in the leader mediates the effects of leadership on employee outcomes such as job performance (Zhu *et al.*, 2013:102), OCB (Rubin *et al.*, 2010:405) and well-being (Kelloway *et al.*, 2012:50). Recent studies have also

confirmed the mediating role of trust in the relationship between servant leadership and other work-related outcomes such as job satisfaction (Chan & Mak, 2014:281; Ilkhanizadeh & Karatepe, 2018:3567-3568; Zargar *et al.*, 2019:2264-2265), team performance (Schaubroeck *et al.*, 2011:866), organisational commitment (Ling *et al.*, 2017:62; Miao *et al.*, 2014:737), OCB (Shim *et al.*, 2016:15), organisational health (Tasker-Mitchell & Attoh, 2020:332), employee creativity (Jaiswal & Dhar, 2017:14) and work engagement (Ling *et al.*, 2017:62).

5.4.2. Trust and work engagement

Trust in the leader is explained as the willingness of an employee to be vulnerable to the effects of a leader's behaviour (Schoorman *et al.*, 2007:347). Trust is seen as a critical ingredient required to sustain organisations in the long term and ensure the well-being of their employees (Lin, 2010:521; Tan & Tan, 2000:255). According to Lin (2010:521-522), trust signifies the confidence and positive expectation followers hold toward the actions of their leader, while work engagement echoes their subsequent enthusiasm and participation in work activities. This implies the potential influence of trust on work engagement and can be linked to the three dimensions of dedication, vigour and absorption. Firstly, followers are dedicated to the objectives of an organisation for the time a trusting relationship with the leader is enjoyed (Gill, 2008:101). Secondly, in the presence of trust, employees become energised and motivated to perform (Dong & Howard, 2006:381). Lastly, trust provides a foundation for employees to be absorbed and improve all aspects of the organisation continually (Townsend & Gebhardt, 2008:24).

Research conducted by Brower *et al.* (2009:338) suggests that the positive impact of trust may rest in reciprocated trust. When leaders display high levels of trust in the abilities of employees, coupled with trust in the leader, followers have shown to deliver optimal commitment. When followers trust in the ability and expertise of their leader, the leader is seen as a resource to assist in delivering on work objectives, which provides the confidence to exercise more effort in their work (Chughtai & Buckley, 2008:57). Feelings of mutuality and psychological safety make an employee feel less vulnerable, potentially leading to greater work engagement (Koçak & Küçük, 2021:184). Leaders who have demonstrated thoughtfulness and support for their subordinates have been shown to build trust and increase work engagement (Cooper-Thomas *et al.*, 2018:338).

Alternatively, events that cause a breach in the psychological contract between leaders and followers, such as downsizing, result in a reduction of work engagement based on dwindling trust (Buckley, 2011:320-321). In the absence of trust, employees tend to spend their time protecting themselves instead of investing their efforts to support the organisation (Agarwal, 2014:53). Similarly, followers who feel they can trust their leader are inclined to go beyond what is required or expected in their work (Engelbrecht *et al.*, 2017:370). Moving beyond the traditional JD-R model to explain work engagement, Chughtai and Buckley (2008:51) argue that other psychological variables also induce work engagement, such as trust. Present literature supports the notion that trust is a significant predictor of work engagement (Agarwal, 2014:59; Engelbrecht *et al.*, 2017:375; Håvold *et al.*, 2021:153; Koçak & Küçük, 2021:188; Wong *et al.*, 2010:897).

5.4.3. Servant leadership and work engagement

Work engagement is regarded as a positive job attitude, primarily predicated on the two individual aspects of job and personal resources (Bakker & Demerouti, 2007:319). Job resources represent aspects such as organisational support, management feedback and level of autonomy. Personal resources include individual attributes of self-esteem, self-efficacy and optimism (Bakker & Demerouti, 2007:323). Reflecting on these antecedents, it is possible to identify the potential influence of servant leadership in creating optimal conditions required for work engagement to flourish (De Sousa & Van Dierendonck, 2017:16). Servant leadership focuses on the needs and development of followers by creating an environment aimed to foster personal growth and provide individual support (Van Dierendonck, 2011:1229). This produces the impression among followers that the leader cares about them and their development. According to Schaufeli and Bakker (2004:296), the creation of a social supportive work environment assists in reducing job demands, encourages the achievement of work objectives and promotes personal growth, learning and

development. Aspects of servant leadership that distinguish it from other leadership approaches are its focus on motivational and aspirational characteristics and, recognising the need for psychological support to assist in mitigating the challenges presented by modern work (Aboramadan *et al.*, 2020b:618; Xu *et al.*, 2020:49).

Although leadership has historically been neglected as a primary job resource considered to facilitate work engagement, recent studies have indicated a positive relationship between work engagement and leadership styles that share common characteristics with servant leadership. Examples of such styles are empowering leadership (Cai *et al.*, 2018:7; Tuckey *et al.*, 2012:22), authentic leadership (Giallonardo *et al.*, 2010:999; Oh *et al.*, 2018:283), transformational leadership (Monje Amor *et al.*, 2020:174; Zhu *et al.*, 2009:608-609), engaging leadership (Rahmadani *et al.*, 2019:464) and ethical leadership (Den Hartog & Belschak, 2012:42; Engelbrecht *et al.*, 2017:375). Recent studies to determine the relationship between servant leadership and work engagement have found servant leadership to impact work engagement positively and significantly (Aboramadan *et al.*, 2020b:627; Bao *et al.*, 2018:412; De Clercq *et al.*, 2014:201; De Sousa & Van Dierendonck, 2014:892; Kaur, 2018:82; Khan *et al.*, 2021:934).

6. Research methodology

6.1. Research approach, sample and procedure

The study adopted a positivistic research philosophy where the researchers assumed an objective position (Bryman *et al.*, 2014:12). Since this study aimed not to generate original theory but to test the existing theoretical frameworks of servant leadership, work engagement and trust, the research design followed a deductive approach (Bryman *et al.*, 2014:31). Considering the objectives of the study were to quantify the relationships between servant leadership behaviour, work engagement and trust, a mono-method quantitative research approach was selected (Bryman *et al.*, 2014:107). The study followed a cross-sectional survey research strategy, using a non-probability convenience sample to collect data at a single point in time. The study sample was employees from four selected higher education institutions in South Africa.

A web-based survey platform was used to collect research data. Respondents were issued a hyperlink with access to the online survey via an email sent by the research host of each of the higher education institutions. From this email, the respondent navigated to the website, where informed consent was provided, and demographic information of the sample was collected. The online survey proceeded to the questions on the measuring instruments of the study variables. To counter low response rates associated with web-based surveys, the researchers kept the items of the questionnaire to a minimum without compromising on validity.

Research conducted on the employees of the four public universities selected for this study required approval from a gatekeeper committee before the sample group was made accessible to the researcher. Once permission was obtained to conduct research at the selected institutions, a research host to whom the sample population was easily accessible was identified within the organisation. The researchers did not have direct access to the study sample but were made accessible through the liaising research host. Informed consent was obtained from respondents before allowing access to the research questionnaire. The informed consent letter explained the purpose, voluntary and confidential nature of the study. The respondents' confidentiality was respected and upheld during the collection, analysis and dissemination of data, by assigning each respondent a code instead of using personally identifiable characteristics.

All academic staff members working at South Africa's 26 public universities were included in this study's population; however, the target population for this study consisted of the academic staff of four public tertiary institutions in selected provinces. These institutions are the North-West University, Central University of Technology, University of the Free State and Stellenbosch University. These were chosen based on the researcher's current or prior involvement with these institutions.

The inclusion criteria for the study population were all academic employees of the four selected South African higher education institutions. Eligible participants had to be employed in an academic capacity and report to a direct supervisor or leader. The exclusion criteria included all administrative personnel from the four South African higher education institutions.

Invitations to participate in the study reached approximately 3 000 potential respondents, of which the questionnaire was viewed 1 315 times and 246 responses were initiated. After eliminating incomplete responses, the dataset was narrowed down to 206 complete responses appropriate for data analysis. With the sole objective of profiling the sample, respondents were requested to provide demographic information, such as age, gender, higher academic qualification, institution location, faculty and years of experience in their current position. The demographic profile of respondents is featured in Table 1 below.

Table 1: Demographic profile of respondents

<i>Category</i>	<i>Class</i>	<i>n</i>	<i>%</i>
Age of respondent	18 to 24 years	2	0.97%
	25 to 34 years	37	17.96%
	35 to 44 years	47	22.82%
	45 to 54 years	65	31.55%
	55 to 64 years	48	23.30%
	Older than 64 years	7	3.40%
Institution location	Free State	77	37.38%
	Gauteng	11	5.34%
	North West	43	20.87%
	Western Cape	75	36.41%
Faculty	Economic and Management Sciences	68	33.01%
	Education	10	4.85%
	Engineering	18	8.74%
	Health Sciences	21	10.19%
	Humanities	45	21.84%
	Natural and Agricultural Sciences	33	16.02%
	Theology	1	0.49%
	Other	10	4.85%
Gender	Female	120	58.25%
	Male	84	40.78%
	Other	2	0.97%
Highest academic qualification	National certificate	2	0.97%
	Bachelor's degree	7	3.40%
	Honours degree	13	6.31%
	Master's degree	65	31.55%
	Doctoral degree	119	57.77%
Years of experience in current position	0 to 3 years	30	14.56%
	4 to 5 years	15	7.28%
	6 to 10 years	52	25.24%
	11 years and more	109	52.91%

Inspection of Table 1 suggests that the majority of the sample consisted of female respondents (58.25%) between the age of 45 to 54 (31.55%) holding doctoral degrees (57.77%) from the

Economic and Management Sciences faculty (33.01%) and have been employed in their current position for more than 11 years (52.91%). Respondents were employed by institutions predominantly located in the Free State province (37.38%), mainly attributable to the fact that two of the four universities in the target population are located in this province.

6.2. Measuring instruments

The study adopted existing questionnaires to measure each construct that has been designed and tested by expert researchers. Since the measuring instruments are predeveloped, the reliability and validity of the questionnaires have previously been determined. The study questionnaire consisted of the following four sections:

Demographical information

This study collected demographical information of the respondent of the following nature: age, institute location, faculty, gender, academic qualification and years of experience in their current position. The collection of demographical data served the purpose of describing the sample and has been excluded from further analysis and use for drawing comparisons between groups.

Servant leadership

Several measuring instruments have been designed to assess the prevalence and extent of servant leadership behaviour within the context of organisations. For this study, the shortened seven-item version scale (SLQ7) developed by Liden *et al.* (2015:254-269) was selected as the measuring instrument for servant leadership. This scale was created as a shortened adaptation of a 28-item instrument developed by Liden *et al.* (2008:161-177). Shorter instruments, as suggested by Credé *et al.* (2012:875), might reduce the respondent's fatigue and improve the integrity of the instrument.

The shortened seven-item scale comprises the same seven dimensions introduced by Liden *et al.* (2008:169), namely emotional healing, creating value for the community, conception skills, empowering, helping subordinates grow and succeed, putting subordinates first and behaving ethically. Each dimension consists of one item measured on a five-point Likert scale and is represented by the following questions: "My leader can tell if something work-related is going wrong" (conception skills), "My leader makes my career development a priority" (helping subordinates grow and succeed), "I would seek help from my leader if I had a personal problem" (emotional healing), "My leader emphasises the importance of giving back to the community" (creating value for the community), "My leader puts my best interests ahead of his or her own" (putting subordinates first), "My leader gives me the freedom to handle difficult situations in the way that I feel is best" (empowering) and "My leader would not compromise ethical principles in order to achieve success" (behaving ethically).

The shortened scale was tested for reliability and validity by Liden *et al.* (2015:256), who found Cronbach's alpha of 0.80, 0.81 and 0.89 in three separate samples of the scale, including satisfactory results from the confirmatory factor analysis conducted. This seven-item scale was also tested by Flotman and Grobler (2020:7-8) for its validity to be used in South African contexts and found the instrument to be of practical and scientific value, with Cronbach's alpha demonstrated at 0.88. Convergent validity was also assessed with the use of composite reliability and found to be acceptable (Flotman & Grobler, 2020:6).

Work engagement

For this study, the shortened nine-item version (UWES9) of the Utrecht work engagement scale by Schaufeli *et al.* (2006:707-716) was selected as the measuring instrument for work engagement. This scale was adapted from the original 17-item Utrecht work engagement scale developed by Schaufeli *et al.* (2002:85).

The items of the scale represent the work engagement dimension as identified by Schaufeli *et al.* (2002:74) of vigour, dedication and absorption. It contains three items proposed to reflect each of the three underlying work engagement dimensions and will be measured on a five-point Likert-type scale from one to five. Sample items for each dimension are: "At my job, I feel strong and vigorous"

(vigour), “My job inspires me” (dedication) and “I am immersed in my work” (absorption). Higher scores selected by respondents indicate a larger extent of work engagement experience.

The shortened scale was originally tested for validity and reliability across 10 countries during its development, of which South Africa was one (Schaufeli *et al.*, 2006:708-709). Cronbach’s alpha for each of the three constructs varied between the 10 countries. However, the median of Cronbach’s alpha across all 10 countries was found to be 0.92.

Trust

To achieve the aim of investigating the role of trust in the relationship between servant leadership and work engagement, the six-item Trust in/Loyalty to the Leader scale (TLLS) developed by Podsakoff *et al.* (1990:107-142) was selected. The scale was originally designed to investigate the role of trust in the direct leader in the relationship between transformational leadership and organisational citizenship. It is therefore deemed appropriate to examine other conceptualisations of leadership using this instrument, specifically measuring trust in a direct leader from the perspective of the followers.

In this six-item scale, trust is conceptualised using two sections. The extent to which a follower’s faith in their leader is expressed is represented by three items, an example of which is: “My manager would never try to gain an advantage by deceiving workers”. The degree to which a sense of loyalty is experienced by followers toward their leader is also represented by three items, an example of which is: “I have a strong sense of loyalty toward my leader”. All six items are measured on a five-point Likert scale.

Confirmatory factor analysis was conducted on the trust in the leader scale by Podsakoff *et al.* (1990:117) and found all six items to be satisfactory in representing trust. A reliability test of this scale conducted by Sendjaya and Pekerti (2010:652) rendered a Cronbach’s coefficient alpha of 0.81.

6.3. Statistical analyses

The research objectives the study aimed to achieve determined the data analysis techniques. Given this study’s focus on the investigation of the relationship between study variables, quantitative techniques were used to analyse the primary research data.

Data collected from the web survey platform QuestionPro was extracted and exported to IBM Statistical Package for the Social Sciences (SPSS) and Jamovi for statistical analysis. Data analysis was initiated with frequencies to describe the demographical data, followed by exploratory factor analysis (EFA). This analytical technique was used to explore the factorial structure of the measured variables in the study. Cronbach’s alpha coefficient was utilised to assess the reliability of measuring instruments used in the context of this study.

Next, descriptive statistics were performed comprising an array of quantitative instruments used to describe and interpret raw data (Modipane *et al.*, 2019:6). Descriptive statistics are classified into four major categories: measures of frequency (per cent and frequency), measures of central tendency (mean, mode and median), measures of dispersion (variance and standard deviation) and distribution measures (kurtosis and skewness) (Mishra *et al.*, 2019:68). Procedures that were selected for data analysis in this study included mean, median, standard deviation, skewness and kurtosis.

Data analytics continued with the use of correlation analysis to determine the relationships between variables and to establish the strength and direction of the relationship between variables. Simple mediation and moderation modelling were conducted using PROCESS macros version 4 of Hayes (2017), installed as an add-on in IBM SPSS to analyse how and when or under which conditions trust plays a role in the relationship between servant leadership and work engagement and its components. To investigate the predictive value (validity) of the independent variables (servant leadership and trust) on the dependent variables (work engagement and its components) of this study, a standardised regression analysis was conducted.

7. Results

The findings of this study are presented in five sections discussed below. The results are introduced by the findings of the exploratory factor analysis, followed by descriptive statistics of the measuring instrument utilised in the study and the presentation of correlations found between the study constructs. It continues by revealing the findings of the confirmatory factor analysis and regression analysis. The section concludes with an unveiling of the outcome of the mediation analysis.

7.1. Exploratory factor analysis

Exploratory factor analysis (EFA) was conducted using a simple principal component analysis on the items of the of the individual scales [Servant leadership scale (SLQ7); (eigenvalue = 4.36; variance explained = 62.31%); KMO =.91], Trust in/Loyalty to the Leader scale (TLLS); (eigenvalue = 4.23; variance explained = 70.45%; KMO =.89) and Utrecht Work Engagement Scale (UWES9); (eigenvalue = 5.62; variance explained = 62.43%; KMO =.89)]. The results (eigenvalues and scree plots) confirm that servant leadership, trust and work engagement were unidimensional constructs. The analysis also considered and validated the subscales of work engagement [Vigour; (eigenvalue = 2.5; variance explained = 83.39%; KMO =.91), Dedication; (eigenvalue = 2.29; variance explained = 76.40%; KMO =.65) and Absorption; (eigenvalue = 2.11; variance explained = 71.20%; KMO =.69)] as unidimensional constructs respectively.

7.2. Descriptive statistics and correlation analysis

This section exhibits the findings of descriptive statistics and the correlation analysis of the constructs investigated in the study. The descriptive statistics are presented in Table 2 below, including the internal consistency calculations using Cronbach's alpha, skewness and kurtosis. The findings of Pearson's correlation coefficients between the study variables are presented in Table 3.

Table 2: Descriptive statistics (N=206) and Cronbach's alpha coefficients

<i>Variables</i>	<i>α</i>	<i>Mean</i>	<i>SD</i>	<i>Skewness</i>	<i>Kurtosis</i>
1. Servant leadership	.90	3.38	.94	-.42	-.42
2. Trust	.77	3.59	.80	-1.01	1.08
3. Work engagement	.92	5.54	1.19	-.83	-.18
4. Vigour	.90	5.11	1.56	-.81	-.25
5. Dedication	.84	5.71	1.28	-.94	-.08
6. Absorption	.77	5.81	1.13	-1.24	1.27

An observation of Table 2 indicates that Cronbach's alpha of all scales falls within the acceptable range of 0.70 and above (Drost, 2011:114), required for data to be useable in research of a similar nature. Mean scores above the mid-point for each of the study variables indicate a prevalence of these variables in the experiences of the respondents. Table 2 also confirms that the data extracted from the measuring instruments of the study were normally distributed given the guidelines of 2.00 for skewness and 7.00 for kurtosis (Finch & West, 1997:454).

Table 3: Correlation coefficients (N=206) between servant leadership, trust and work engagement

<i>Constructs</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
1. Servant leadership	-				
2. Trust	.83**	-			
3. Work engagement	.45**	.39**	-		
4. Vigour	.49**	.42**	.92**	-	
5. Dedication	.44**	.37**	.95**	.85**	-
6. Absorption	.24**	.24**	.81**	.55**	.68**

**Coefficient is statistically significant at the .01 level (one-tailed) / The practical significance of the results was interpreted as .10 (small effect), .30 (medium effect) and .50 (large effect) (Steyn, 2002:12).

The findings in Table 3 indicate that servant leadership was found to be practically significantly related to trust ($r = .83$; $p < 0.01$; large effect) and work engagement as a unidimensional construct ($r = .45$; $p < 0.01$; medium effect). Additionally, servant leadership seems practically significantly related to two of the subconstructs of work engagement, vigour ($r = .49$; $p < 0.01$; medium effect) and dedication ($r = .44$; $p < 0.01$; medium effect). Trust was also found to be practically significantly related work engagement ($r = .39$; $p < 0.01$; medium effect) and two of its subconstructs, vigour ($r = .42$; $p < 0.01$; medium effect) and dedication ($r = .44$; $p < 0.01$; medium effect). Work engagement is indicated as practically significantly related to all three of the subconstructs to a great extent ($r = .92, .95$ & $.81$; $p < 0.01$; large effect) and signifies the interrelated nature of the relationship between the construct as a unidimensional construct and the broken down subconstructs. Vigour seems practically significantly related to the subconstructs of dedication ($r = .85$; $p < 0.01$; large effect) and absorption ($r = .55$; $p < 0.01$; large effect). Dedication was found to be practically significantly related to absorption ($r = .68$; $p < 0.01$; large effect).

7.3. Mediation and moderation analysis

This study was also interested in determining the mediating and moderating role of trust in the relationship between servant leadership and work engagement and its components separately. This was done to describe how and when trust will impact the relationship between servant leadership and work engagement and its components. The results of the mediation and moderation analysis are presented in Tables 4 and 5 below.

Table 4: Indirect effects of servant leadership on work engagement through trust

<i>Constructs</i>	<i>Estimate</i>	<i>SE</i>	<i>Bootstrapping BC 95% CI</i>	
			<i>Lower</i>	<i>Upper</i>
1. Work engagement	.06	.12	-.19	.30
2. Vigour	.04	.17	-.29	.37
3. Dedication	.02	.13	-.24	.29
4. Absorption	.12	.12	-.12	.34

Table 5: Interaction effects of servant leadership and trust (Servant leadership * Trust) to predict work engagement

<i>Constructs</i>	<i>Estimate</i>	<i>SE</i>	<i>Bootstrapping BC 95% CI</i>	
			<i>Lower</i>	<i>Upper</i>
1. Work engagement ($p=.82$)	-.02	.09	-.20	.16
2. Vigour ($p=.43$)	-.09	.12	-.32	.14
3. Dedication ($p=.76$)	-.03	.10	-.22	.16
4. Absorption ($p=.51$)	.06	.09	-.12	.25

To determine mediation effects, bootstrap confidence intervals of the indirect effects were considered. The inclusion of 0 in the confidence intervals of the indirect effects suggests the absence of significant indirect effects and therefore means that the mediation role of trust could not be confirmed. Inspection of Table 4 suggests that the mediating role of trust could not be confirmed in any of the models with servant leadership as an independent variable and work engagement and its dimensions separately as dependent variables.

Next, the focus was on the possible moderating role of trust in the relationship between servant leadership and engagement and its dimensions separately. To determine moderation effects, the significance and confidence intervals of the interaction effects (Servant leadership * Trust) were considered. Inspection of Table 5 suggests that the moderating role of trust could not be confirmed in any of the models tested because of the insignificant effects and the inclusion of 0 in the confidence intervals. After failing to confirm mediation or moderating effects of trust in the relationship between servant leadership and work engagement and its dimension, the analysis considered the role of servant leadership and trust in explaining the variance in work engagement and its dimensions. The next section focuses on this analysis.

7.4. Regression analysis

The study aimed to determine the significant predicting value of servant leadership and trust on the dependent variable of work engagement and its components. This was done to describe the predictive value of servant leadership and trust in work engagement and its components. A regression analysis was conducted using servant leadership and trust as independent variables to determine the predictability of the dependent variable of work engagement, as well as each of the three subconstructs of vigour, dedication and absorption. The results of the regression analysis are presented in Table 6 below.

Table 6: Regression analysis with work engagement, vigour, dedication and absorption as dependent variables (N=206)

Independent Variables	Work Engagement		Vigour		Dedication		Absorption	
	β	t	β	t	β	t	β	t
1. Servant leadership	.51	3.61**	.78	4.321**	.58	3.751**	.17	1.17
2. Trust	.09	.54	.06	.28	.04	.16	.17	1.02
<i>F</i>	26.3		33		24.2		6.93	
<i>p</i>	<.001		<.001		<.001		<.001	
<i>R</i>	.45		.5		.44		.25	
<i>R</i> ²	.21		.25		.19		.06	
<i>Adjusted R</i> ²	.20		.24		.18		.05	
<i>f</i> ²	.25		.32		.22		.05	
<i>Effect size</i>	medium		medium		medium		small	

**Coefficient is statistically significant at the .01 level (one-tailed). The parameters for *f*² are set for practical significance: .01 ≥ small effect, .10 ≥ medium effect, .35 ≥ large effect (Steyn, 2002:12).

A close inspection of Table 6 revealed that a combination of servant leadership characteristics and trust in the leader accounted for 20 per cent (medium practical significance) of the variance in work engagement, with servant leadership ($\beta = .51 / t = 3.61$) proving to be the only statistically significant predictor of work engagement.

The combination of servant leadership and trust also explained 24 per cent (medium practical significance) of the variance in vigour, with servant leadership ($\beta = .78 / t = 4.321$) proving to be the only statistically significant predictor of work engagement. The collective variance of 18 per cent (medium practical significance) in dedication was primarily driven by the statistically significant predictor of servant leadership ($\beta = .58 / t = 3.751$).

8. Discussion

This study's primary objective examined the relationship between servant leadership, trust and work engagement in academic staff at four universities in South Africa. Data collected from 206 respondents were analysed and investigated for direct relationships between study constructs, as well as the mediating and moderating effect of trust in the relationship between servant leadership and work engagement. The findings suggest that servant leadership and trust were both positively and significantly related to work engagement, as well as to each component of work engagement, vigour, dedication and absorption. Results also validated the interrelatedness of these three dimensions. This is consistent with previous findings that suggest significant correlations between the three dimensions of work engagement (Demerouti *et al.*, 2001:282; Kibatta & Samuel, 2021:1048; Schaufeli *et al.*, 2002:80).

The study's first secondary objective was to confirm the relationship between servant leadership and work engagement in academic staff in South African universities. In line with previous empirical studies (Aboramadan *et al.*, 2020b:627; Bao *et al.*, 2018:412; De Clercq *et al.*, 2014:201; De Sousa & Van Dierendonck, 2014:892; Kaur, 2018:82; Khan *et al.*, 2021:934), the findings of this study suggest a significantly positive correlation between servant leadership and work engagement, including the three dimensions of vigour, dedication and absorption. The results suggest that when academic leaders exhibit servant leadership characteristics, academic staff are more likely to display higher levels of energy spent on work and experience a sense of importance associated with work. Additionally, academic staff are immersed in job activities and easily get carried away when engaged in work.

The study's second objective was to determine the relationship between servant leadership and trust in academic staff in South African universities. The results indicated that servant leadership is highly connected to trust, having a positive effect on a leader's ability to build trust. This is consistent with previous findings that report a similar direction and intensity to the relationship between these variables (Chatbury *et al.*, 2011:60; Joseph & Winston, 2005:15; Saleem *et al.*, 2020:9-11; Sendjaya & Pekerti, 2010:654; Zargar *et al.*, 2019:2264). Servant leadership behaviours displayed by academic leaders, such as not compromising on ethical principles, prioritising the best interest of academic staff and being concerned for their well-being, are suggested to generate a sense of loyalty and confidence that the leader will treat followers fairly with integrity.

The third objective of the study was to establish the relationship between trust and work engagement in academic staff in South African universities. The study's findings confirm trust in the leader to be an antecedent of work engagement, with a significantly positive relationship existing between the two constructs. This supports the findings of previous empirical research that found established similar associations (Agarwal, 2014:59; Engelbrecht *et al.*, 2017:375; Håvold *et al.*, 2021:153; Koçak & Küçük, 2021:188; Wong *et al.*, 2010:897). It can be deduced that a sense of trust and loyalty toward an academic leader successfully brings on feelings of enthusiasm and inspiration about work, producing the ability for academic staff to be immersed in their work. Since a trusting relationship exists, academic staff members spend no energy determining whether their leader is trying to take advantage of them and allow followers to pay full attention to their work instead.

The fourth and fifth objectives were to determine the mediating and moderating role of trust in the relationship between servant leadership and engagement amongst academic staff in South African universities. The results did not confirm the mediating or moderating role of trust in relation to servant leadership and positive employee outcomes found in previous studies (Jaiswal & Dhar, 2017:14; Ling *et al.*, 2017:63; Miao *et al.*, 2014:737; Shim *et al.*, 2016:15; Tasker-Mitchell & Attoh, 2020:332). These results illustrate the distinctive setting in which South African university faculty members work

and provide information on the uniqueness of the working environment. Servant leadership is adequate to affect work engagement in the South African higher education context. While trust separately positively impacts work engagement, its effect on the relationship between servant leadership and engagement was found to be insignificant within the South African higher education environment. This is a contradicting result with the findings of Ling *et al.* (2017:63), who confirmed the mediating effect of trust between servant leadership and work engagement.

The final secondary objective was to determine if servant leadership and trust serve as significant predictors of engagement amongst academic staff in South African universities. A combination of servant leadership and trust was confirmed to predict the outcome of work engagement, with servant leadership having a larger influence on the outcome. The findings of this study confirm the display of servant leadership attributes increases trust in the academic leader. In addition, while both successfully contributed to the explanation of why certain academic staff are more engaged than others, servant leadership plays the dominant role in achieving work engagement in academic staff members.

9. Theoretical Contribution

This study's theoretical contribution is based on the importance of servant leadership in the facilitation of improved work engagement, specifically in the context of South African higher education. As a result, the need exists for short and valid measures of servant leadership and work engagement. This allows the measurement and monitoring of these constructs' existence and magnitude in higher education institutions in South Africa. This study confirmed the validity and reliability of the shortened 7-item servant leadership scale (SL-7) and the shortened 9-item Utrecht Work Engagement Scale (UWES-9) within the context of South African Higher Education. These findings contribute to the achievement of the objective of the shortened leadership scale to be viewed as a concise scale intended to assess servant leadership globally and, as a result, expedite the testing of servant leadership theory (Liden *et al.*, 2015:266). Confirming these shortened scales' applicability in a new context improves the ability of the results of the scales to be generalised across further contexts.

Furthermore, this study builds on the foundation laid by Aboramadan *et al.* (2020b:628) to empirically examine the relationship between servant leadership and work engagement in the context of higher education. This study expands current research on servant leadership and work engagement. In addition, this study elaborates on the research by Aboramadan *et al.* (2020b:628) by investigating the mediating role of trust in the relationship between servant leadership in this context.

10. Practical recommendations

Based on the developments in the South African higher education context, a dire need exists for the implementation of practical measures to improve the work engagement of academic staff. Higher education institutes are knowledge-intensive organisations and require highly vigorous, dedicated and absorbed academic staff for academic success. For this reason, a focus should be placed on mechanisms that enhance the work engagement of academic staff. Since this study confirms the positive impact of trust and servant leadership on work engagement, the study's practical recommendations suggest manners in which to improve servant leadership and trust among academic leaders.

This paper provides insight into the importance of servant leadership in its ability to result in positive employee outcomes and highlights the need for Human Resources practitioners and managers to pay attention to recruiting candidates with servant leadership characteristics. Psychometric assessments can assist in identifying candidates with servant leadership attributes and competencies when selecting new managers. Servant leaders can be developed internally through academic leadership development programmes, with a focus on training managers on servant leadership behaviours. Performance assessments and reward systems should be aligned with the display of servant leadership characteristics and promote future servant leadership behaviour. These could include 360-degree leadership evaluations and work engagement surveys to assess the portrayal of servant leader behaviour in institutions of higher learning. From an organisational perspective, servant leadership

values are recommended to be instilled into the values of the institute to create a general climate and organisational culture conducive to servant leadership behaviour. As servant leaders, managers are required to pay close attention and be responsive to the basic needs of subordinates (De Clercq *et al.*, 2014:203). It is recommended that leaders ensure clarity in role-related expectations and provide continuous developmental feedback and support to subordinates.

Considering the established positive impact of trust on the work engagement of academic staff, leaders should spend time directing their attention to activities, procedures, systems and policies that facilitate increased trust in the leader. On an organisational level, if subordinates believe that organisational policies and procedures are implemented in their best interest and directed toward their well-being, they are more likely to trust their leaders. Hence, it is recommended that leaders be trust-conscious when devising and implementing new organisational policies and procedures. The implementation of trust-sensitive policies, such as job security, performance-based remuneration, training opportunities, development appraisal and selective staffing, are aimed at the sustenance and care of academic staff (Chughtai & Buckley, 2013:414) and have the potential to enable a trusting relationship between academic managers and staff. On an interpersonal level, trust can be facilitated through regular team-building exercises, encouraging the managers and subordinates to engage in trust-enhancing activities, such as collaborative problem-solving, contribution recognition and information sharing. Additionally, reshaping the workplace, job responsibilities and work tasks to allow for increased interaction between managers and subordinates may facilitate the development of a closer bond that could potentially strengthen the trust relationship between parties.

11. Limitations

As with other empirical studies, this research paper contains certain limitations. Firstly, the cross-sectional design of the study prevents the ability for causal inferences to be made. For example, trust in the leader may exist independently from servant leadership characteristics displayed by the leader, resulting in the presence of work engagement. However, due to the well-established positive impact of servant leadership on trust, it is believed that causal direction, as exemplified in the study's conceptual model, is more likely an occurrence.

Secondly, the findings of this study were derived from a single data source, self-administered questionnaires, which potentially introduce common method bias. Common method bias refers to the systematic error variance that is associated with the use of a common method to measure the constructs of a study (Kock *et al.*, 2021:1). This study is exposed to common method bias in two manners. Due to the self-administered approach to capturing the questionnaire data, the study potentially suffers from respondent-related method bias inferred by the individual characteristics of the respondents. For example, research by Baumgartner and Steenkamp (2001:145) indicated that different personality traits could result in stylistic responses.

Furthermore, measurement-related method bias could also cause potential systematic error variances. The fact that the scale was only presented in English, while it is likely in the South African context that English might not be the first language for most of the respondents, may cause a variance in the interpretation of scale items. Due care was taken to mitigate other measurement-related biases. The study makes use of shortened scales to reduce fatigue commonly associated with lengthy questionnaires. The study also utilised measuring instruments designed by research experts, with well-known reliability and validity and tested the applicability and suitability of these scales within the study context as part of the data analysis performed. However, the fact that all study variables were measured simultaneously can still present a degree of common method bias (Podsakoff *et al.*, 2003:885).

Thirdly, due to the nature of the sampling technique, the findings of this study may not characterise the consensus across the wider population. Since the study uses non-probability sampling to select the members of the study population, it introduces a sampling bias that does not allow all members of the population with the same statistical probability to be selected for the study. Consequently, the study

sample might not be representative of the population and care needs to be taken to infer generalisations from the results of the study.

Lastly, the response rate for this study is fairly low, estimated to be 6.25 per cent, and introduces the likelihood of non-response bias. Employees at universities are likely experiencing survey fatigue, as they are bombarded with daily requests from researchers to complete questionnaires. A low response rate for the study was expected and designed to mitigate, but still raises the question of whether the findings of the study would remain unchanged if 100 per cent of the sample completed the survey and further deducts from the ability to generalise the results (Lindner *et al.*, 2001:50).

12. Recommendations for future studies

Based on the results and limitations of this study, various opportunities for future research exist. While this confirmed the importance of trust in explaining the occurrence of work engagement, other constructs have also been identified to influence the relationship between servant leadership and work engagement. For example, goal congruence moderates the effect of servant leadership on work engagement at higher levels of social interaction (De Clercq *et al.*, 2014:197), while intrinsic motivation, psychological ownership and empowerment mediate this relationship (Aboramadan *et al.*, 2020b:627; De Sousa & Van Dierendonck, 2014:892). Since this study was unable to confirm the mediating role of trust, future studies could re-examine the nature of this relationship to determine its consistency. Expanding the area of mediator and moderator research would provide better clarification into the importance of other constructs in determining the outcome of work engagement in relation to servant leadership behaviour.

Another direction for future research is to establish the generalisability of the results of the study by addressing some of its limitations. Sampling bias can be reduced by utilising a probability sampling method that allows a greater chance for population representation to be researched. This can be achieved by increasing the study population to include the academic staff at all South African universities. Similarly, restricting non-response variance through improved participation would also enhance the representativeness of the findings. This may be achieved through the introduction of incentives (Smith *et al.*, 2019:11). However, due care needs to be taken for the ethical considerations associated with providing incentives to participate in academic research.

An additional limitation for future research to alleviate is the ability of causal inferences to be concluded. It is recommended that future research adopt a longitudinal research methodology to assess the prevalence of the study constructs over an extended period. The result might prove to verify the relational direction of trust as a consequence of servant leadership in its association with work engagement. To reduce the common method bias associated with the measuring instruments only being presented in English, future studies could consider the respective demographic profile of the study population and provide options for various language translations for the scales to assess the study variables.

13. Conclusion

This study aimed to assess the role of servant leadership and trust in the respective relationships with the work engagement of academic staff at universities in South Africa. The results suggest that these three constructs are significantly related, both statistically and practically. The data analysis could not confirm the mediating or moderating role of trust in the relationship between servant leadership and work engagement but found a combination of servant leadership and trust to have a positive influence on work engagement. This offers evidence to suggest that servant leadership behaviours tend to improve work dedication and increase the amount of energy spent on work-related tasks. The findings also suggest that servant leaders generate trust-based relationships with followers, which can be utilised to enhance the work engagement of academic staff.

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Can Empowered Staff Be a Competitive Advantage? Exploring The Relationships Between Psychological Capital, Work Engagement, Job Satisfaction, and Intentions To Leave Among Employees of a Ferrochrome Producing Mining Company

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Keywords

Positive Organisational Behaviour;
Psychological Capital;
Work Engagement; Job Satisfaction; Intention To Leave

Abstract

The struggle for survival in the mining industry has intensified in recent times. Organisations in this competitive industry that can retain satisfied, fully engaged employees, may create a competitive advantage and increased profits due to optimized employee outputs. The present study examined underlying mechanisms through which psychological capital affects intention to leave by employing a serial multiple mediation model to test the independent and combined interactive effects of work engagement and job satisfaction as underlying processes in a convenience sample of employees (N=399) from a South African ferrochrome mining company. Structural equation modelling was used to examine relations among variables. Psychological capital was positively associated with work engagement and job satisfaction, and inversely related to intention to leave. Psychological capital had a significant indirect, diminishing effect on intention to leave via job satisfaction. This effect was further amplified through a serial multiple mediation process where psychological capital promoted work engagement, which had a serial interactive effect on job satisfaction that showed an even more striking waning effect on intention to leave. Managers could create a competitive advantage by developing employees' psychological capital and by removing obstacles that may hinder employees to be fully engaged and experience satisfaction with their jobs.

1. Introduction

Since the 1980s the world economy entered a period of increased free trade, commonly known as globalisation (Madhok, 2021). At its peak around the 2000s, globalization became characterised by organisations' relentless drive towards maximising shareholder value, the pursuit of profit at all costs, and the tendency from governments toward increased spending and deregulation in support of these pursuits (Anderson & Obeng, 2021). Globalisation appeared to bring with it numerous benefits for many nations; particularly developing countries such as South Africa in the form of higher revenues from international markets and increased foreign direct investment. Despite this, the economic impact of the recent COVID-19 pandemic has also highlighted some of the weaknesses of globalisation, such as over concentrated value chains leading to increased costs and delays in the delivery of products. This, in turn, could spark a move towards de-globalisation by some countries in the future, but for

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now, most nations remain embedded within the existing globalised world economic system (Madhok, 2021; Anderson & Obeng, 2021).

South Africa has become one of the world's largest producers and exporters of ferrochrome. As such, its ferrochrome producing organisations do not function as islands as they also form part of the globalised economy. These organisations, just as all others, operate within a given context and from a strategic perspective, therefore it is imperative for them to analyse and understand the possible effects that global and macro external events might have on their futures (Ungerer et al., 2016). A competitive advantage within this landscape can be achieved by strategically recruiting, empowering, and maintaining highly skilled employees (Thompson et al., 2017). This study therefore focused on the potential competitive advantage that employees could harness for the mining company, one of the world's largest integrated ferrochrome producers. Based in the North-West Province of South Africa, the company mines one of the world's largest chrome ore deposits, also referred to as the western limb of the Bushveld Complex. HFC has benefitted from globalization but faces the possibility of losing some of its customers due to the international economic climate (Sengül et al., 2015, Anderson & Obeng, 2021).

Therefore, the recruitment, development and maintenance of skilled employees who are also emotionally equipped to perform better under the pressure of the current economic climate whilst maintaining high levels of work engagement (WE) and job satisfaction (JS) can potentially create a unique competitive advantage for the organization. Although numerous ferrochrome producers might view engagement as a competitive advantage, more employees have been found to be disengaged (Kular et al., 2008). Employees who are disengaged are also likely to experience lower levels of job satisfaction and more inclined to leave the organization. Psychological capital (PsyCap) affects employee attitudes in positive ways (Du Plessis & Barkhuizen, 2011; Fredrickson, 2013; Heyns & Badenhorst, 2015; Malik, 2013; Mcshane & Von Glinow, 2015; Seo & Chung, 2019; Songshan et al., 2021). However, more research is necessary to develop a clearer understanding of the underlying processes that enhance the positive effect of psychological capital on desirable employee attitudes and performance outcomes.

2. Problem Investigated

To the best of our knowledge, previous literature that investigated the relationships between PsyCap and either WE, JS, or intentions to leave (ITL) was not carried out in the smelter industry of South Africa. In addition, no study could be found that examined the combination of these variables within the same study. It was against this background that the research question arose of what are the relationships were between PsyCap, WE, JS & ITL among employees of this ferrochrome producing mining company? More specifically, this study investigated whether work engagement and job satisfaction would serve as mediators in the relationship between PsyCap and ITL. If so, in what fashion? Would their effect be best amplified if work engagement and job satisfaction were considered as independent facilitative processes, or is it possible that the two mediators might interact to have a compounding effect if they operate simultaneously in a serially related fashion? Obtaining clarity on this might serve to reduce ITL and can benefit managers and employees alike in that more specific development strategies and initiatives can be identified and implemented to manage resources in a more cost-effective manner and promote better job fit.

3. Research Objectives

The main objective of this study is to empirically assess the relationships between PsyCap, WE, JS and ITL among employees of the ferrochrome mining company. The following are the sub-research objectives of this study:

- I. To test the effects of WE and JS as potential mediators that operate separately and independently of each other.
- II. To test the potential effect of WE and JS as potential mediators if considered as simultaneously operating processes that may interact in a serial fashion to obtain a compounding effect on the relationship between PsyCap and ITL.

4. Hypotheses

The following hypotheses were formulated for this study:

H1: PsyCap has positive effect on WE (1a) and JS (1b) but has a diminishing effect on ITL (1c).

H2: PsyCap affects intention to leave through WE (2a) and JS (2b) as separate facilitative mechanisms that operate independently of each other.

H3: WE and JS serve as two mediators that interact in a serially dependent fashion where WE promotes JS which, in turn, indirectly affects the relationship between PsyCap and ITL.

5. Literature Review

In the following sections, literature pertaining to PsyCap, WE, JS and ITL is discussed.

5.1 Psychological capital

One avenue towards building a competitive advantage and minimising the risk of an organisation such as this from potentially losing its customers is through human capital investment in the form of a Positive Organisational Behavioural (POB) approach. Within this approach, leaders emphasise building on strengths of their employees instead of only addressing or rectifying their weaknesses (Fineman cited by Luthans & Youssef, 2007; Luthans et al., 2007b).

PsyCap is rooted within this POB approach and emphasises the instillation and enhancement of hope, efficacy, resilience, and optimism (Luthans et al., 2007b) - four positive psychology constructs that are directly related to well-being (Youssef & Luthans, 2010), and which can be linked to strengths needed for overcoming difficulties or setbacks and for recovery from any adverse circumstance (Jerling & Heyns, 2020).

PsyCap can be defined as “an individual’s positive state of development that is characterized by (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward achieving goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success” (Luthans *et al.*, 2007b p.3).

PsyCap is a higher order construct with state-like qualities, which indicates that its sub-components – hope, optimism, efficacy, and resilience – are not static but can be developed (Yousseff & Luthans, 2013). Furthermore, each of these four sub-components entails unique cognitive and motivational factors that are compounded when combined (Luthans et al., 2007; Luthans & Youssef-Morgan, 2017).

Previous research, including South African study samples, linked PsyCap to increased employee productivity, job satisfaction and lower intentions to leave (Du Plessis & Barkhuizen, 2011, Heyns & Badenhorst, 2015, Seo & Chung, 2019, Songshan et al., 2021). A study by Amunkete and Rothmann (2015) which was done in Namibia also highlighted PsyCap as a positive catalyst for job satisfaction and employee retention and another study by Ngwenya and Pelser (2020) which was performed in Zimbabwe revealed that PsyCap positively influenced optimal employee engagement, job satisfaction and employee performance. These findings demonstrate the value of PsyCap for the reduction of costs associated with negative organizational influence such as intentions to leave, and its conducive effect on positive workplace outcomes across different countries in Africa.

5.2. Work engagement

Closely related to PsyCap, is WE. According to Shuck (2011), WE consists of four major approaches, namely the need-satisfying approach (Kahn, 1990), the burnout-antithesis approach (Maslach et al., 2001), the satisfaction-engagement approach (Harter et al., 2002) and the multidimensional approach (Saks, 2006). In this study, the definition proposed by Shaufeli et al., (2002, p. 70) will be used. The authors defined engagement slightly differently from Maslach namely, as a positive, fulfilling, work-

related state of mind consisting of three sub-dimensions, namely, (a) vigor, signifying “high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, and persistence even in the face of difficulties”; (b) dedication, characterized by “feelings of a sense of significance, enthusiasm, inspiration, pride; and (c) absorption, considered as “being fully concentrated and deeply engrossed in one’s work, whereby time passes quickly and one has difficulties with detaching oneself” (Schaufeli et al., 2002, pp. 74–75; Schaufeli et al., 2019, p. 577).

Employees who are highly engaged in their work tend to be more optimistic, energised and more closely connected to their work-related activities (Schaufeli et al., 2002). As such, they also tend to perform better at their jobs and better than their less engaged counterparts, mostly due to the positive emotions they tend to experience such as joy, happiness, and enthusiasm (Bakker & Demerouti, 2008). Schaufeli and Bakker (2006) found that vigour, absorption and dedication dimensions are negatively correlated to burnout as engaged employees tend to negotiate job demands more optimally due to their sense of connectedness and energy, which in turn make them less likely to experience burnout.

Numerous South African employees have unfortunately been found to experience low levels of work engagement. For instance, a study by Gallup (2013) as cited by Rothmann (2017) found that South Africa had the highest level of actively disengaged employees amongst the group of 26 countries included in the survey. In the South African mining industry low levels of employee engagement manifested through high levels of labour unrest (Rothmann, 2017). World figures indicate that actively disengaged employees had been found by some researchers to outnumber engaged employees at a ratio of 3 to 1. Organisations with higher engaged employees have been found to experience higher earnings per share. This means that work engagement is also directly related to the profitability of the organisation (Rothmann, 2017).

5.3. Job satisfaction

Another central concept to the present study was JS, commonly defined as “a pleasurable or positive emotional state resulting from the appraisal of one’s job” (Locke, 1976, p. 1304). In other words, JS reflects the extent to which workers feel positive or negative towards the facets of their jobs (Cek & Eyupoglu, 2020). According to Choi et al. (2013) JS is the result of the interaction between professional commitment and work environment values.

It is essential that employees experience JS, as it enhances individual motivation and work performance (Cek & Eyupoglu, 2020), identification with an organisation, commitment, (Amunkete & Rothmann, 2015), employee engagement and productivity (Tepayakul & Rinthaisong, 2018). Moreover, JS influences the organisation’s efficacy in handling daily activities and ultimately affects not only the individual but also the organisation’s performance (Rowden, 2002) for example, JS has been linked to customer satisfaction and profit (Amunkete & Rothmann, 2015). More importantly for the purposes of this study, JS has also been found to facilitate the relationship between PsyCap and employee performance (Ngwenya & Pelsler, 2020).

5.4. Intentions to leave

High turnover tendencies are associated with high transition cost and the potential loss of valued staff (Zhang et al., 2020). It is of crucial importance for the organisation to retain optimally performing employees to achieve a competitive advantage for business; therefore, the enterprise cannot afford to ignore factors that might erode its knowledgebase.

ITL refers to a situation where an employee is contemplating leaving their job in a particular organisation (Coomber & Barriball, 2007) and is the final stage in the cognitive decision-making process that signals the likelihood of quitting in the nearby future (Tett & Meyer, 1993). ITL is the closest proxy for actual turnover (Hennicks et al., 2022) and is a better indicator of the real management level of an organization than actual turnover behaviour (Zhang et al., 2020).

Although ITL can be influenced by many factors both within and outside the workplace, a recent meta analysis which was conducted in the medical sector, recorded significant correlations between low job

satisfaction and turnover intention (Zhang et al., 2020) and several empirical studies that were conducted on the African continent, have also consistently linked low JS either directly or as a mediating mechanism, to ITL (Amunkete & Rothmann, 2015; Hennicks et al., 2022).

5.5. Relationship between the variables

Positive emotions such as optimism and hope that forms part of PsyCap positively correlate with employee attitudes of WE and JS, and negatively correlate with organisational cynicism and turnover intentions in some specific industries including, the health sector (Avey et al., 2008; 2011; Dudusova et al., 2021). Various studies have found JS be negatively correlated with ITL (Bordia et al., 2011; Holtom et al., 2008; Tummers et al., 2013). Therefore, it appeared from the literature that employees who are satisfied in their jobs tend to be more engaged in their work and possess higher levels of PsyCap. This in turn also make them less likely to quit their jobs as opposed to their counterparts with less PsyCap, less WE and lower levels of JS.

6. Research Methodology

The study adopted a quantitative approach with a cross-sectional survey design. A non-probability, convenient sampling technique with a structured questionnaire was used to collect the data from the permanent and part-time employees of among employees of a ferrochrome producing mining company.

6.1. Participants

The participants for this study were permanent and part-time employees of the organisation. In total, 405 questionnaires were distributed online to the participants of which 339 were completed. The sample, predominantly males (84%) had the largest portion (37%) in the 30-39 age bracket. Most respondents (89%) were permanently employed with the highest portion being employed for 5-9 years (31%). The majority indicated Grade 12 as their highest qualification (50%). Furthermore, the largest portion of the sample identified as black (73%) with Setswana indicated as the dominant (35%) mother-tongue language spoken. Given the nature of the work done at the organisation, the demographics were considered an accurate reflection of the specific population.

6.2. Measuring Instruments

The questionnaire consisted of a short biographical information section and sections with items that appraised psychological capital, job satisfaction, work engagement and intentions to leave. All constructs, except the biographical information, were measured by items reflected on 7-point Likert scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A shortened version of the PsyCap Questionnaire (PCQ) as initially developed by Luthans et al. (2007) was used to measure PsyCap. The original 24-item measure consists of four sub-dimensions namely efficacy, hope, resilience, and optimism. For the current study, a shortened version was used consisting of three items per sub-dimension, as based on subsequent research which identified those items that had the strongest loadings on their respective sub-dimensions, and which were employed to avoid previously recorded problems with the full scale, which also included reversed scored items with known problems associated with their item-reliability (see for instance Simon and Buitendach, 2013 and Bekker and Heyns, 2017).

WE was assessed by the ultra-short measure of work engagement (UWES-3) as developed by Shaufeli et al. (2019). A sample item was “I am immersed in my work”. A South African study reported satisfactory inter-item correlations and a reliability index of $\alpha = 0.67$ for this 3-item scale (Heyns et al., 2021). Job Satisfaction was measured by a 3-item scale developed by Hellgren et al. (1997). An example item was “I am satisfied with my job”. Pienaar et al. (2007) reported a Cronbach’s alpha value of .80 when applied within a South African study context. Employees’ ITL was measured by the Turnover Intention Scale (TIS) (Sjöberg & Sverke, 2000) which consisted of three items that measured the strength of the respondents’ intention to leave a current job. An example of an item was “I am actively looking for other jobs”. Previous applications of this scale within a South African work context recorded a Cronbach’s alpha coefficient of 0.83 for this scale (Hennicks et al., 2022).

6.3. Data Analysis

Descriptive and inferential statistics were used to analyse collected data. Since Cronbach's alpha does not provide a true estimate of scale reliability when latent variable modeling is used (Kline, 2016; Raykov, 2004; Wang & Wang, 2020), scale reliabilities (ρ) were computed in *Mplus* version 8.8 based on a formula based on the ratio of explained variance over total variance (Raykov, 2004). Although a cut-off value of 0.70 as proposed by Raykov and Marcoulides (2011) for interpreting scale reliability was preferred, values above .6 were still considered acceptable (Ahmad et al., 2016; Clark & Watson, 1995) since all sub-scales employed a maximum of three items to measure constructs as economically as possible (Pallant, 2010; Tredoux & Durrheim, 2013).

Confirmatory factor analysis was done within a structural equation modelling framework using *Mplus* 8.8 (Muthén & Muthén, 2022) to test the measurement- and structural models. Item responses were defined as continuous. A mean adjusted maximum likelihood (MLM) estimator was employed as it is robust against non-normality and could be used since the dataset contained no missing values (Kelloway, 2015; Wang & Wang, 2020). The following indices were used to assess model fit: The Chi-square statistic, the Standardised Root Mean Residual (SRMR, acceptable values below 0.8) and the Root-Mean-Square Error of Approximation (RMSEA, acceptable values below 0.8) as indicators of close fit between the model and the data, as well as incremental fit indices such as the Tucker-Lewis Index (TLI) and the Comparative Fit Index (CFI) where values above 0.9 were regarded as acceptable (Wang & Wang, 2020). As the MLM estimation method was implemented, direct comparisons between Chi-square statistic values of competing measurement models were not possible. Instead, two additional fit indices - the Akaike Information Criterion (AIC) and Bayes Information Criterion (BIC) - were also considered. In both instances lower values were preferred as indicative of better fitting models (Kline, 2016; Wang & Wang, 2020). A correlation matrix was also generated for the latent variables, and effect sizes were interpreted as $r = \geq 0.10$ (small effect), $r = \geq 0.30$ (medium effect) to $r \geq 0.50$ (large effect) (Cohen, 1992). Indirect effects were estimated by employing a serial multiple mediation model using PROCESS macro as proposed by Hayes (2022). Bootstrapping (using 5000 samples) was used to construct two-sided bias-corrected 95% confidence intervals (CIs) to generate estimations of potential indirect effects. Mediation was demonstrated if the range of values represented by the upper and lower CI's did not include zero (Hayes, 2022).

6.4. Ethical considerations

This study adhered to the guidelines for ethical research as stipulated by the relevant Faculty Research Committee of a reputable South African university which provided ethical clearance for this research as a low-risk study. In addition, the executive committee of the ferrochrome company provided written permission to conduct the research, including permission to make secondary use of the data in aggregated format.

7. Results and Findings

7.1. Testing the Measurement Model

Confirmatory factor analysis (CFA) with *Mplus* was used to verify if the hypothesized factorial structures of the scales that were used, were valid. Three competing models were tested to reveal the model that offered the best fit to the data. Using the factor structures as proposed by the literature as a point of departure, Model 1 consisted of four latent variables: (a) PsyCap was configured as a second order latent construct consisting of four first order latent factors (self-efficacy, hope, resilience, and optimism) measured by three items each, while (b) WE, (c) JS and (d) turnover intention were respectively measured by three directly observed variables each. Model 2 was specified like Model 1, with the exception that PsyCap was presented as a single first order latent factor measured by 12 items only. To test the possibility of common method bias, all constructs were collapsed in Model 3 to test a single latent order factor consisting of all items employed in the design, thus 21 items in total. Table 1 summarises the fit indices of the initial competing models.

Table 1 shows that the chi-square values for each of the three models were significant, which suggests that a perfect fit to the data was not attainable. However, all the remaining fit indices for Model 1 have achieved the required level of acceptance and consistently pointed towards this model as the one showing a superior fit to the data. In contrast to Model 1, the values recorded for absolute as well as incremental fit in the alternative two models were less ideal as these models not only had higher AIC, BIC and SRMR values, but also recorded CFI and TLI values below the stated minimum threshold as well as RMSEA p-values that were significant. Therefore, Model 1, which is also the model that represents the constructs as theory proposes was selected as the preferred measurement model.

Table 1: Fit statistics of initial possible measurement models

Model		<i>df</i>	AIC	BIC	CFI	TLI	RMSEA	SRMR
Model 1	306.58*	179	25040.27	25319.57	0.947	0.937	0.046 [0.037- 0.054] <i>p</i> =0.778	0.059
Model 2	507.710*	183	25290.19	25554.18	0.864	0.844	0.072 [0.065- 0.080] <i>p</i> <0.001	0.070
Model 3	1063.07*	189	25992.60	26233.63	0.634	0.594	0.117 [0.110- 0.124] <i>p</i> <0.001	0.104

χ^2 = chi-square; *df* = degrees of freedom; AIC = Akaike Information Criteria; BIC = Bayesian Information Criteria; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual, * *p* < .01.

Source: Authors

The descriptive statistics, correlation matrix and corresponding reliability coefficients are reported in Table 2.

Table 2: Descriptive Statistics, Composite Reliabilities, and Correlations of the Scales

Variable	Mean	SD	ρ	1	2	3	4	5	6	7	8
1. Self-efficacy	5.70	1.34	.76	1							
2. Hope	5.67	1.31	.81	.59	1						
3. Resilience	5.36	1.30	.61	.31	.33	1					
4. Optimism	5.80	1.15	.80	.61	.65	.35	1				
5. PsyCap	5.63	0.92	.80	.74	.79	.42	.83	1			
6. Work engagement	5.47	1.19	.66	.54	.58	.31	.60	.73	1		
7. Job satisfaction	5.33	1.71	.91	.47	.51	.27	.53	.64	.66	1	
8. Intention to leave	3.72	2.01	.86	-.35	-.38	-.20	-.34	-.48	-.52	-.72	1

Note: all correlations were statistically significant (*p* < .01). Parameters for the correlation coefficients were considered as a small effect when *r* \approx .10, medium effect when *r* \approx .30, and large effect when *r* \approx .50 (Cohen, 1998; Field, 2014).

Source: Authors

Table 2 shows acceptable composite reliability values well above 0.7 for PsyCap, job satisfaction and intention to leave. The work engagement scale and the resilience sub-scale recorded lower values but considering that both these scales employed a maximum of three items per scale, lower values were to

be expected and the recorded values were also still above the stated minimum threshold of .6. It is therefore concluded that all the scales demonstrate acceptable reliability for the purposes of this study.

All the relationships were statistically significant ($p < .01$) and in the directions as expected. Correlations of large effect ($r > 0.5$, $p < 0.01$) were observed among the self-efficacy, hope and optimism subscales of the PsyCap measurement instrument while the mentioned subscales showed statistically significant relationships of medium magnitude with resilience. Regarding the main constructs, correlations of large effect were recorded for all the relationships – i.e., between PsyCap and work engagement, PsyCap and job satisfaction, and between work engagement and job satisfaction. In view of these findings, the associations among constructs are also practically significant (Cohen, 1988).

7.2. Testing the structural model

The ideal measurement model formed the basis of the structural model. The statistical results indicated an identical fit for the re-estimated model to the data: $\chi^2 = 306.58$, $df = 179$, $TLI = 0.937$, $CFI = 0.947$, $RMSEA = 0.046$, $90\% \text{ CI } [0.037, 0.054]$ $p > .05$, $SRMR = 0.059$. All items loaded statistically significantly onto their respective constructs as expected, with values ranging from .41 (lowest, resilience item 2) to .92 (highest, turnover intention, item 2). The results, as shown in Figure 1 below indicate that the estimated path coefficient from PsyCap to work engagement ($\beta = 0.73$, $p < 0.001$), to job satisfaction ($\beta = 0.64$, $p < 0.001$) as well as from PsyCap to intention to leave ($\beta = -0.48$, $p < 0.05$), were all significant. Therefore, hypotheses 1a, 1b and 1c are all accepted.

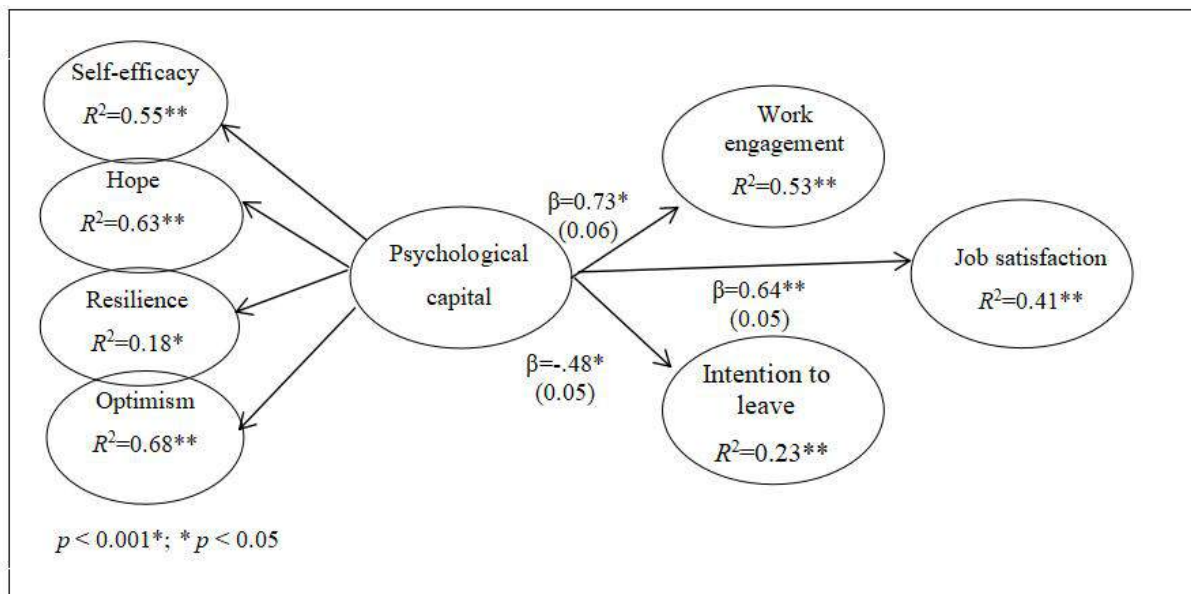


Figure 1: The structural model (standardised solution with standard errors in parentheses)

7.3. Indirect Effects

A serial multiple mediation model was tested through implementing PROCESS macro and specifically Model 6 as proposed by Hayes (2022). The serial mediation model simultaneously tested two alternative single-mediator pathways (psychological capital as predictor of turnover intention via work engagement - mediator 1, and an alternative pathway of psychological capital to intention to leave via job satisfaction - mediator 2), as well as a two-mediator sequential pattern where work engagement affected job satisfaction (mediator 3) which, in turn, influenced intentions to leave. The variables' unstandardized regression coefficients were used (Montoya & Hayes, 2017) to test the indirect effects. Findings (Table 3 and Figure 2) indicate that there is no direct effect of psychological capital in the model: $\beta = .03$, $p > 0.05$, $95\% \text{ CI } [-.19, .25]$.

Contrary to expectations, psychological capital did not have a statistically significant indirect effect on intention to leave via work engagement when the latter was tested as a single, independent

underlying mechanism: $\beta = -.13$, 95% CI [-.28, .01]. This meant that Hypothesis 2a cannot be accepted. In contrast, psychological capital had a significant indirect, diminishing effect on intention to leave via job satisfaction as underlying mechanism, independent of work engagement: $\beta = -.35$, 95% CI [-.54, -.17]. This meant that Hypothesis 2b is accepted. Finally, the data were found to be consistent with the claim that psychological capital affects intention to leave serially through work engagement, which prompts greater job satisfaction which, in turn, leads to reduced intentions to leave: $\beta = -.28$, CI [-.42, -.17]. Hypothesis 3 is accepted. The total indirect effect of psychological capital on intention to leave accounted for 76% of the variance in intention to leave. Table 3 and Figure 2 displays the full model with unstandardized β weights for the path coefficients.

Table 3: Direct and Indirect Effects of Psychological Capital

Variable	Estimate	Standard Error	95% Bias Corrected Confidence Interval
Direct effects of psychological capital :			
Work engagement	.73	.06	[.62 to .85]
Job satisfaction	.59	.10	[-.29 to .69]
Intention to leave	.03	.11	[-.19 to .25]
Indirect effects of psychological capital:			
Intention to leave (via work engagement)	-.13	.07	[-.28 to .01]
Intention to leave (via job satisfaction)	-.35	.09	[-.54 to -.17]
Intention to leave (serially through work engagement affecting job satisfaction)	-.28	.07	[-.42 to -.17]

Source: Own compilation

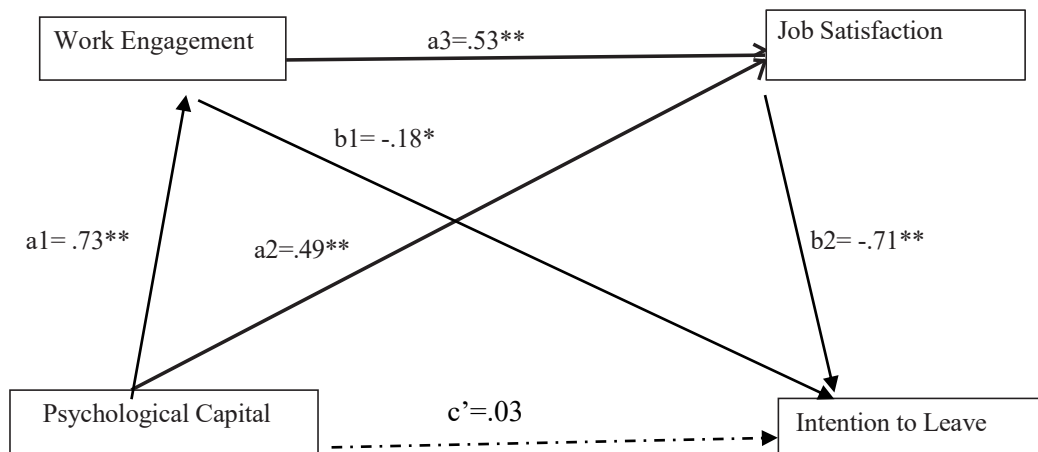


Figure 2: Two-mediator sequential model depicting the relationship between psychological capital and intention to leave as mediated by work engagement and job satisfaction.

Note. Asterisks indicate significant coefficients (* $p < .05$; ** $p < .01$).

8. Managerial Implications

The present study aimed to empirically assess the relationships between PsyCap, WE, JS and ITL among employees of a ferrochrome producing company. In doing so, it contributed to the existing literature of PsyCap and its relationship with WE, JS and ITL, by extending findings to the smelting industry in South Africa. For example, previous studies had highlighted how the development of PsyCap among employees could nurture optimal behavior change in organisations as well as develop a more an engaged, creative, and energised workforce (Lin et al., 2015). Youseff and Luthans (2013) also indicated that with the declining power of economic capital to create more sustainable competitive advantages, one way in which organisations might differentiate themselves from their competitors is through developing human-based core competencies through PsyCap. Most of these studies had been done in industries other than the smelting industry of South Africa, which made this

study unique. The current study provided further confirmation that positive associations previously found between PsyCap and WE and JS are also applicable to other contexts such as the smelting industry, thereby providing evidence that the observed relations extend across diverse industries. On a practical level, it suggests that organisations should implement development programmes that focus on the enhancement of employees' ability to master tasks (efficacy), encouragement to find and create several alternative pathways towards goal achievement (hope), reinforcing beliefs that one can bounce back from adversity (resilience) and encouraging a positive outlook (optimism) when confronted with challenges.

Furthermore, this study was also unique in that it tested a model which not only considered whether PsyCap, WE and JS could predict ITL, but also investigated the role of WE and JS as potential underlying mechanisms in the relation between PsyCap and ITL. The findings of the present study as reflected in Figure 2 reveal that PsyCap affect ITL serially through WE, which prompted greater JS and, in turn, led to reduced ITL among staff. This highlighted how the development of PsyCap could also develop a competitive advantage for the organisation, despite the challenging prevailing economic climate. Based on these findings, it is recommended that an intervention programme be crafted and implemented amongst employees within the company to cultivate such a competitive advantage by focusing pertinently on PsyCap and WE, and the cultivation of JS in combination with WE.

The findings of the present study also confirm the results reported previously by Du Plessis and Barkhuizen (2011) which highlighted that managers in South Africa who choose to develop PsyCap within their staff can create a caring workplace that takes into consideration the broader economic and social issues affecting employees. Creating such a workplace is critical to prevent detrimental events such as work stoppages that may result in financial losses for both the organisations and the employees. Developing PsyCap amongst employees also reduces their ITL, leading to less turnover and the expensive costs of needing to recruit and train new staff (Zhang et al., 2020). In this way, it is hoped that the present findings will enable managers from this company and other similar organisations to allocate their available support services and resources in a more focused manner to strengthen the PsyCap of their employees. Also, the findings concerning the mediating variables suggest that while doing so, managers should pay close attention to and monitor the JS of their employees given the important role JS plays when it comes to amplifying the effects of PsyCap on WE and ITL. The results imply that employees who might have been considering leaving their jobs at the company would most likely be less inclined to do so if their PsyCap and WE are strengthened, but this effect could be further maximized if managers also ensured that their JS was monitored and promoted at the same time. Without doing so, the chances of employees potentially leaving their jobs might still exist, but if their JS is increased, the chances of them leaving could be significantly reduced. Simple surveys or informal feedback obtained from employees on a regular basis could be a cost effective and simple way managers can use.

Shorter and faster ways to measure relevant constructs simplify the tasks of human resource practitioners because it enables them to gain a comprehensive overview of trends that are being monitored in a more economical and expedited manner. It is nevertheless noted that the shortened PsyCap scale as used in this study still flagged items on the reliability scale as slightly problematic; managers are therefore sensitised to interpret findings of the resilience scale with caution. It is recommended that the newly developed Compound PsyCap Scale (Lorenz et al., 2016) as further improved by Dudusova et al., (2021) - to rectify persisting problems with the reliability scale of the full PsyCap measure - be employed and validated for South African work contexts by future studies.

9. Limitations

This study used a cross-sectional survey-design and made use of a convenience sampling technique. Although this is acceptable for the purposes of an exploratory study (Spector, 2019) to gain a first overall idea of relations between a new or unique combination of variables within a novel setting, the results should be interpreted with caution. This is so because it is acknowledged that convenience sampling might potentially lead to biases since a particular group within the study might be over or

under-represented (Bryman & Bell, 2011) and the lack of longitudinal studies to confirm relations with more certainty limits generalizability beyond the sample group. Furthermore, the scope of the present study only included a limited number of variables that might play a role in the level of work engagement, job satisfaction and intentions to leave among staff. The inclusion of these variables is not meant to be exhaustive as other factors such as economic opportunities, for example, may also influence intentions to leave.

Some of the respondents also indicated that English was not their first language and 50% had indicated Grade 12 as their highest level of education. Although all the assessment measures contained items that would be understandable to individuals with even very basic proficiency in English, it is still possible that language constraints may have led to some uncertainty and inaccurate responses to some items.

10. Conclusion

Despite its limitations, the present study succeeded in its aim of empirically assessing the relationships between PsyCap, WE, JS and ITL among employees within the organisation of interest. This was significant as previous studies had mostly considered the predictive nature and relationship of PsyCap in relation with work engagement in organisations that did not form part of the South African smelter industry. In this way, the present study took an important step towards filling this gap in the literature whilst also providing some valuable practical insights for managers to consider, particularly those operating within this industry. In view of the prevailing global and national economic difficulties, these findings are particularly relevant as managers reflect on how positive behaviour in the workplace could be beneficial to their organisations towards creating a unique competitive advantage. Managers could use this knowledge to motivate for increased investment in interventions to better equip their staff with PsyCap. By doing so, organisations like HFC could also benefit from appointing and retaining staff who are more satisfied and engaged in their work, as well as less inclined to leave. Furthermore, by providing interventions to enhance their PsyCap constructs, a productive environment will be created where employees could thrive despite the challenging economic conditions prevailing in the macroeconomic environment. In doing so, empowering staff can create a competitive advantage. Finally, the resilience subscale of the CPC-12 requires further verification in future research studies. Dudusova et al. (2021) recommended a revised CPC-12 questionnaire in which the items of the resilience scale should be amended. Future studies could replicate the revised measure as proposed by Dudusova (2021) in a South African context for validation purposes.

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Factors Influencing Work Engagement in The Automotive Retail Sector of South Africa

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Keywords

Job demands; Job Resources; Work engagement

Abstract

Work engagement is vital in the global economy as it dramatically improves organisational outcomes. Disengagement in the workplace results in lower morale, more staff lateness and higher absenteeism. The negative behaviours lead to reduced productivity, quality of work and a decline in overall job satisfaction. This study aimed to examine the influence of job demands and resources on employees' work engagement in South Africa's automotive retail sector. A quantitative research design yielded a sample size of n = 375. The results reveal that mental demands, social support and autonomy are significant predictors of work engagement.

1. Introduction

Engaged employees can achieve business goals more effectively, perform better on the job, display higher levels of work commitment and lower levels of absenteeism (Bakker & Demerouti, 2017: 274; Osborne & Hammoud, 2017: 53). Job demands (for example mental or emotional demands) have a significant influence on the formation of engagement (Bakker & Albrecht, 2018: 5; D'Emiljo & Du Preez, 2017: 78; Rothmann & Jordaan, 2006: 88). Bakker and Demerouti (2017: 274) describe work engagement based on the dimensions of vigour, dedication and absorption. Engaged employees feel energised, are enthusiastic about their tasks and are immersed in their work (Willmer, Westerberg Jacobson & Lindberg, 2019: 2). High levels of sustained disengagement, however, can lead to burnout and the associated effects of exhaustion, negative thoughts towards work, feelings of uselessness, and a lack of success (Maslach, 2018: 11). Consequently, it is crucial for organisations to fully grasp the impact of work engagement to ensure the well-being of employees and improve organisational performance.

The South African automotive retail industry has developed into a competitive global player in recent years, serving both the domestic and international demand for right-hand drive vehicles (DEDAT, 2017: 71). It is often assumed that car dealerships see volume and customer satisfaction as top objectives and thereby strongly neglect employee satisfaction and cause unwanted deficits (Chen *et al.*, 2020: 31; Block, 2019: 8). The macroeconomic situation of the automotive retail market in South Africa, in particular the decline in long-term GDP, the risk of shortages due to power cuts or current import restrictions and concerns due to COVID-19, may put psychological pressure on employees (Fourie, 2020: 8; DEDAT, 2017: 1). Automotive dealerships mainly provide tangible goods and intangible services. Therefore, a high level of work engagement in customer service is necessary for the success of the business (Hecker, 2019: 85). According to Diez (2015: 32), this human capital is a unique selling point of the automotive retail trade and is vital in constant processes of economic change and digitalisation. For this reason, this study surveyed sales and service people who, through their direct contact with customers, have a decisive influence on customer satisfaction, customer loyalty and business outcomes (Block, 2019: 9; Hecker, 2019: 85).

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2. Problem Investigated

Research reveals that disengaged employees do not meaningfully contribute toward the full potential of an organisation's outcomes (Gallup, 2017: 22; Osborne & Hammoud, 2017: 50). Disengagement at work results in lower morale, more staff lateness and higher absenteeism that lead to reduced productivity, quality of work and a decline in overall job satisfaction experienced by the employees (Bellet, De Neve & Ward, 2020: 1). According to Gallup's "State of the Global Workplace" study (2017: 24), 85% of employees worldwide were disengaged and unhappy at work. In Sub-Saharan Africa, this rate is 83%. In South Africa, the rate was at 85% at the time of the study (Gallup, 2017: 24). In addition, previous studies indicate a need for action to improve employee engagement in South Africa (Gauche, De Beer & Brink, 2017: 11; Ruzungunde *et al.*, 2016: 223; Banhwa, Chipunza & Chamisa, 2014: 61; Charles & Chucks, 2012: 1). Ruzungunde *et al.* (2016: 223) have found that job stress has a negative impact on the job performance of employees in South Africa. Charles and Chucks (2012: 5) have also recognised the great potential for improving employee engagement in the South African automotive sector.

Sales and service employees are best at creating customer loyalty (Scherpen, Draghici & Niemann, 2018: 374; Hoffmeister, 2015: 5). However, Hoffmeister (2015: 12) identified a high prevalence of burnout symptoms among sales and service people of car dealerships in the USA and Germany. Disengaged employees focus on potential stressors, resulting in high stress levels and counterproductive behaviours (Chen *et al.*, 2020: 31; Ruzungunde *et al.*, 2016: 223). This study, therefore, set out to determine the influence of job demands and resources experienced by automotive retail employees and the potential impact these factors have on work engagement.

3. Research Objectives

The primary objective of this study is to examine the influence of job demands and resources on employees' work engagement in South Africa's automotive retail sector. The following secondary objectives assisted in achieving the primary objective:

- SO₁: To empirically assess employees' perceptions of job demands and resources and work engagement;
- SO₂: To develop a valid instrument to measure job demands and resources and work engagement;
- SO₃: To formulate managerial guidelines and recommendations to improve work engagement in car dealerships.

4. Hypotheses

Figure 1 presents the hypothetical model of the study. The model illustrates that job demands in this study consist of two underlying variables: mental demands and work pace and workload. Job resources consist of three underlying variables: social support, autonomy, and development resources. Job demands and resources (independent variables) are hypothesised to influence work engagement (dependent variable) as indicated.

Based on Figure 1, the following hypotheses were formulated:

- H₁: There is a significant negative relationship between mental demands and work engagement
- H₂: There is a significant negative relationship between work pace and workload and work engagement.
- H₃: There is a significant positive relationship between social support and work engagement.
- H₄: There is a significant positive relationship between autonomy and work engagement.
- H₅: There is a significant positive relationship between development resources and work engagement.

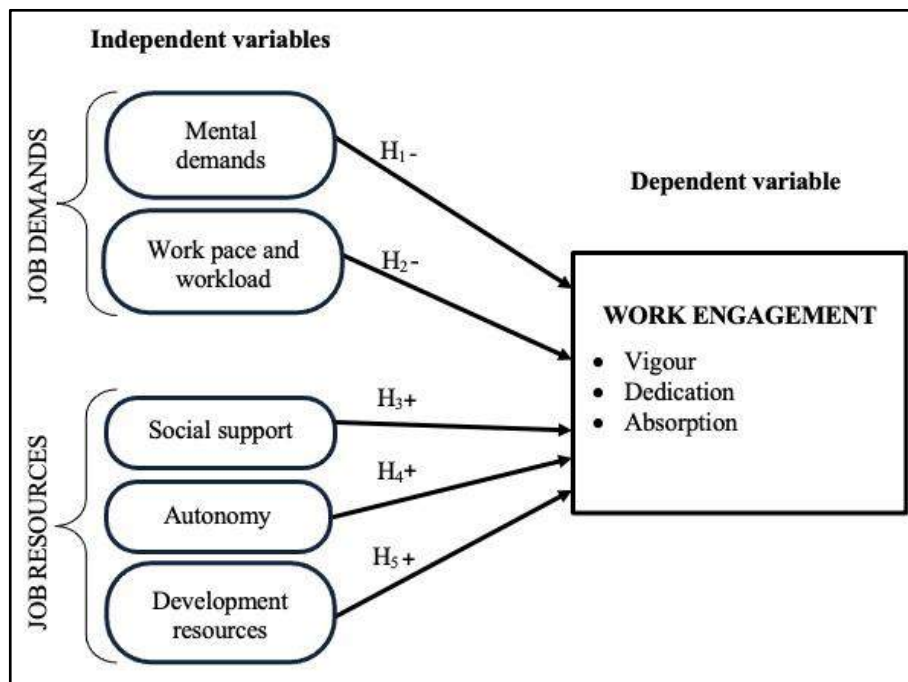


Figure 1: Hypothesised model
Source: Own compilation

5. Literature Review

The following sections provide a theoretical overview of job demands, job resources, and work engagement.

5.1. Job demands

Job demands are defined as the organisational, social, psychological or physical elements of work that require sustained cognitive or physical effort and are therefore associated with certain psychological and physiological costs (Radic *et al.*, 2020: 2; Bakker & Demerouti, 2017: 274; Schaufeli & Taris, 2014: 56; Bakker, Demerouti & Euwema, 2005: 170). In previous studies, job demands included mental demands and pace and amount of work (Bakker & Demerouti, 2017: 313; D'Emiljo & Du Preez, 2017: 78; Lequeurre, Gillet, Ragot & Fouquereau, 2013: 100). These variables are proven and relevant to this study for the association with psychological costs and high work pressure according to economic effects and impact on employee health and well-being (Bakker & Demerouti, 2017: 274). The following sections present a discussion of these two demands.

Mental demands

Mental demands are work demands associated with cognitive information processing and contribute to maximising performance outcomes (Babalola *et al.*, 2020: 5; Kirchberg, Roe & Van Eerde, 2015: 112; Lequeurre *et al.*, 2013: 100). Changing attention between different work tasks with varying priorities or multitasking require increased cognitive skills and is associated with work stress, as it is more challenging than to focus on a single activity (Bellet *et al.*, 2020: 24; Zahlquist *et al.*, 2019: 5; Jackson, 2018: 740; Kirchberg *et al.*, 2015: 112; Macdonald, 2003: 5). The frequent use of the ability to concentrate on a task is also mentioned as a mental effort at work (Hussenoeder *et al.*, 2019: 1203; Lequeurre *et al.*, 2013: 103; Macdonald, 2003: 8). Constantly paying full attention to work tasks and applying mental effort to focus on outstanding tasks (for example, to take care of customer relations) is essential at work (Jackson, 2018: 740; Bhattacharjee, Moitra, Kumar & Vardhan, 2017: 29; Lequeurre *et al.*, 2013: 103). A mental or cognitive state is also described as continuous and work-related ruminating and planning (Eib, Bernhard-Oettel, Magnusson Hanson & Leineweber, 2018: 6; Lequeurre *et al.*, 2013: 103; Macdonald, 2003: 5).

Work pace and workload

Work pace and workload are characterised by feelings of having too many tasks to complete in the allocated time (Prasad *et al.*, 2020: 466; Lequeurre *et al.*, 2013: 100; Bakker *et al.*, 2010: 6). Lequeurre *et al.* (2013: 103) and Kristensen, Bjorner, Christensen and Borg (2004: 307) state that extra hard work can be a method of achieving work objectives or completing tasks. Another characteristic of work pace is the rush and hurry to complete tasks (Lequeurre *et al.*, 2013: 103; Kristensen *et al.*, 2004: 307; Van Yperen & Snijders, 2000: 184). Work pace can also be classified from calm and easy to chaotic (Prasad *et al.*, 2020: 465; Lequeurre *et al.*, 2013: 103; Van Yperen & Snijders, 2000: 184). The hours worked in excess of standard hours are referred to as overtime (Parkes, 2017: 384; Kristensen *et al.*, 2004: 310).

5.2. Job resources

Job resources are defined as organisational, social, psychological or physical elements of work that reduce job demands, enhance personal development and learning and are related to psychological costs (Radic *et al.*, 2020: 2; Bakker & Demerouti, 2017: 274; D'Emiljo & Du Preez, 2017: 71). The literature classifies social support, autonomy and development resources as job resources (Bakker & Demerouti, 2017: 274; Wu *et al.*, 2015: 919; Rothmann & Jordaan, 2006: 87). These attributes help to achieve organisational goals and encourage personal development (Bakker & Demerouti, 2017: 274).

Social support

Social support is defined as a way of coping with work-related stress through interpersonal relationships in the workplace, for example emotional or consultative support (Jackson, 2018: 743; Kadian & Ahlawat, 2017: 4293; Schmidt, 2017: 67). Social support also enables self-efficacy through positive experiences of success (Kerksieck, Bauer & Brauchli, 2019: 2). In professional contexts, this is possible above all, through support from colleagues and superiors (Kerksieck *et al.*, 2019: 3; Kadian & Ahlawat, 2017: 4293; Bakker *et al.*, 2010: 4). One way to measure social support is to examine how often employees get help from colleagues when necessary (Jacobs & Roodt, 2019: 7; Rothmann, Mostert & Strydom, 2006: 79). Employees who have good working relationships or feel comfortable with colleagues benefit from support (Jackson, 2018: 740; Martinussen *et al.*, 2017: 490; Rothmann *et al.*, 2006: 79). This also creates trust and feelings of psychological security (Rothmann & Rothmann Jr, 2010: 3).

A harmonious relationship with superiors is also an essential element in supporting employees (Jackson, 2018: 740; Lequeurre *et al.*, 2013: 106; Rothmann *et al.*, 2006: 79). When workers encounter difficulties in daily work, reliable employers who offer support and assistance are indispensable (Jackson, 2018: 740; Lequeurre *et al.*, 2013: 106; Rothmann *et al.*, 2006: 79). Expressing acceptance, praise and respect by the employer gives recognition and appreciation to employees (Jackson, 2018: 740; Schaufeli, 2015: 461; Lequeurre *et al.*, 2013: 106). Employees can therefore reduce job stress and the associated risk of burnout by taking advantage of social support from colleagues and supervisors (Kadian & Ahlawat, 2017: 4293).

Autonomy

Autonomy can be described as taking responsibility and acting independently with conviction (Radic *et al.*, 2020: 5; Motloba, 2018: 418). Employees who experience professional autonomy can make important work decisions without the need for intervention by superiors (Radic *et al.*, 2020: 5). Autonomy is further associated with the freedom to carry out work tasks innovatively (Lee, Shin & Baek, 2017: 834; Tayyasar & Waheed, 2017: 452). In addition, autonomy significantly influences the planning and implementation of individual work activities and engagement (Maslach, 2018: 14; Meyer & Hünefeld, 2018: 4; Lee *et al.*, 2017: 774). With more autonomy, work pace increases and leads to higher states of well-being (Lee *et al.*, 2017: 834; Lequeurre *et al.*, 2013: 103). Independence and autonomy are also represented by the fact that the employees decide independently how the work is carried out (Mache, Servaty & Harth, 2020). In addition, with greater autonomy comes greater freedom of choice over the content of work tasks (Porter & van den Hooff, 2020: 174; Pichault & McKeown, 2019: 60; Lee *et al.*, 2017: 834). In addition, the convictions of autonomously acting

employees are essential, as the employees feel that the work and their opinions expressed are crucial for achieving the organisation's objectives (Motloba, 2018: 418; Brachat, 2016: 116).

Development resources

Development resources are described as challenging opportunities for learning on the job and as benefits for employees' professional and personal development (Jackson, 2018: 736; Brachat, 2016: 120). A distinction is also made between performance feedback, learning and development opportunities and career prospects (Schaufeli, 2017: 123). If performance feedback is supportive for employees, work can be improved by learning from constructive feedback from customers, colleagues and superiors (Radic *et al.*, 2020: 3; Hecker, 2019: 101). Learning opportunities in the workplace can also enable personal growth and development (Schaufeli, 2017: 121; Rothmann *et al.*, 2006: 80). Training courses offer the opportunity for employees to learn about new fields and work changes (Jackson, 2018: 740; Rothmann *et al.*, 2006: 80). Personal work performance provides the opportunity to achieve specific work goals and to experience feelings of success (Poalses & Bezuidenhout, 2018: 175; Martinussen *et al.*, 2017: 489). Furthermore, it has been proven that career prospects such as opportunities for promotion also have a positive effect on employees (Jackson, 2018: 740; Rothmann *et al.*, 2006: 8). Finally, opportunities for professional advancement are a reason, especially for talented and ambitious employees, not to leave jobs, but instead put their strengths into the present organisation (Brachat, 2016: 119).

5.3. Job demands and resources as determinants of work engagement

As indicated in the preceding sections, two types of variables can be distinguished in any job by broadly categorising organisational variables as either job demands or job resources (Schaufeli & Bakker, 2004; Van den Broeck *et al.*, 2008: 278). Job demands are not necessarily harmful, as long as employees' capacity to adapt is not exceeded. When employees are over-extended, the demands become stressors resulting in burnout (Schaufeli & Bakker, 2004). Burnout in this context is a metaphor for the state of mental weariness. Conversely, job resources enhance employees' well-being and are assumed to stimulate engagement and prevent burnout. The overarching impact of job demands and job resources as determinants of engagement is illustrated in Figure 2.

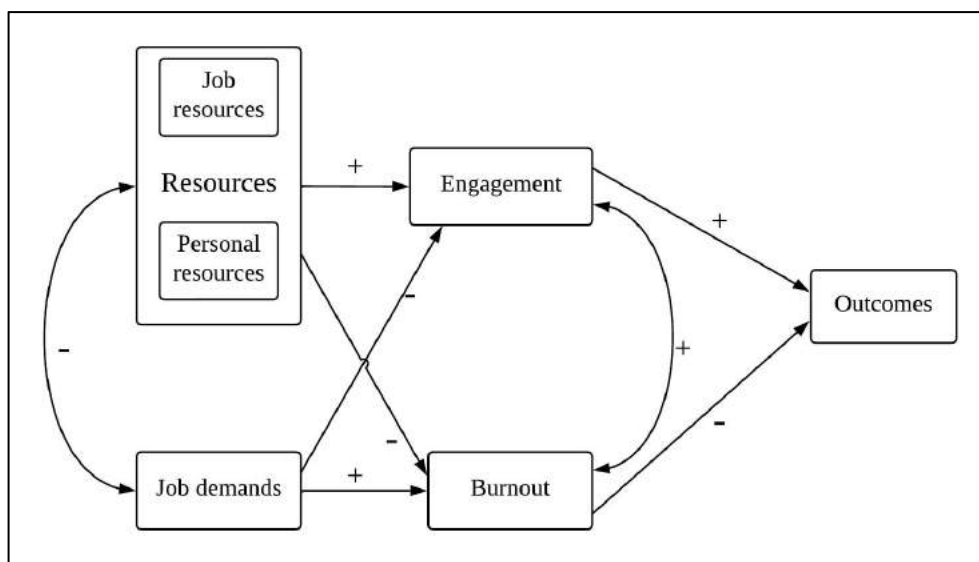


Figure 2: Determinants of work engagement

Source: Adapted from Schaufeli and Bakker (2004); Schaufeli (2013: 37)

Job demands and resources impact burnout and engagement over time (Schaufeli & Taris, 2014: 48). Schaufeli and Bakker (2004) explain that engagement is determined by two processes, depicted in Figure 2, that underlie job resources and job demands. These processes are the energy process and the motivational process. The energy process is associated with burnout dimensions which include: energy depletion (exhaustion), disengagement (cynicism), and diminished performance (reduced

efficacy). Due to the adverse effect of this process on well-being, it is also regarded as a health impairment process since it leads to health problems such as cardiovascular disease, depression and psychosomatic complaints (Schaufeli & Taris, 2014: 47). The motivational process results in well-being and engagement, and is characterised by vigour, dedication and absorption (Schaufeli *et al.*, 2002: 86).

When the underlying motivation and energy processes of job demands and job resources are combined, a buffering effect is exhibited (Bakker & Demerouti, 2007: 317). The resultant relationship between the processes is demonstrated in Figure 3. Figure 3 shows that employees develop strain with increased motivation when job demands and resources are high. Conversely, when both are low - strain and motivation are diminished. Consequently, the high demands-low resources condition results in high strain and low motivation, while the low demands-high resources condition has low strain and high motivation states (Bakker & Demerouti, 2007: 317). The buffer effect has been demonstrated in several studies to prove that where the levels of job resources were high, the effect of job demands on the core dimensions of burnout was significantly reduced (see examples, Bakker, Demerouti & Euwema, 2005; Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007).

The job demands and resources approach is not limited to specific job demands or job resources. It assumes that any demand and resource may affect work engagement, affecting employee health and well-being (Schaufeli & Taris, 2014: 44). The scope of the JD-R model is relatively broad and potentially include all job demands and job resources. This feature makes the JD-R model flexible and appealing to researchers and practitioners, as it can be adapted to various work settings (Schaufeli & Taris, 2014: 44).

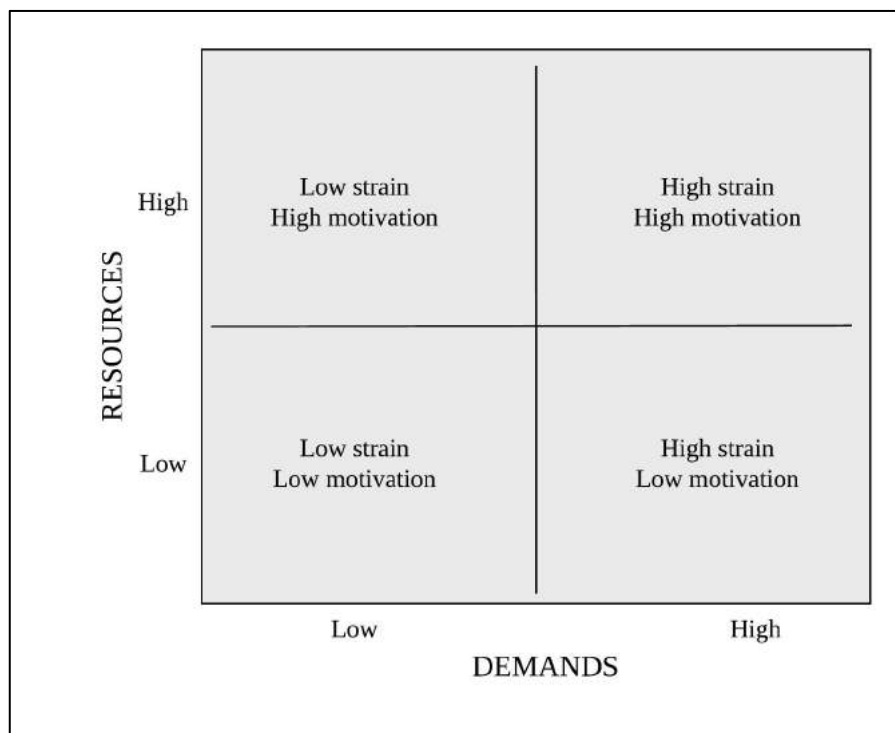


Figure 3: The buffering effect between job demands and resources
Source: Bakker and Demerouti (2007: 317)

5.4. Work engagement

The literature uses a variety of definitions of employee work engagement, and no universally accepted definition exists (Kavya & Padmavathy, 2017: 871). The most widely used conceptualisation of engagement is anchored in job demands and resources (JD-R) theory. It defines the concept as a positive, fulfilling, work-related state of mind that results in employee behaviours of vigour, dedication, and absorption (Schaufeli *et al.*, 2002: 74). According to Schaufeli (2013), vigour is

defined as high levels of energy and mental resilience while working, accompanied by the willingness to invest effort in one's work, and persistence even in the face of difficulties. Dedication means being strongly involved in one's work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Absorption refers to being fully concentrated and happily engrossed in one's work, whereby time appears to pass quickly, and one has difficulties detaching oneself from work. Based on JD-R theory, the fulfilment of different job demands and job resources creates engagement (Bakker & Albrecht, 2018: 5).

Engagement has emerged as an essential construct in organisational research based on the favourable relationship with employee behaviours that promote organisational retention and performance (Chalofsky & Krishna, 2009: 190). Furthermore, there is convincing evidence of the link between engagement and business success from a series of studies conducted by the Gallup organisation. A summarising meta-analysis that included almost 8 000 business units of 36 organisations (Harter, Schmidt & Keyes, 2003: 9) revealed that levels of engagement are positively related to indicators of business performance, such as customer satisfaction and loyalty, profitability, productivity, turnover, and safety (Schaufeli, 2013: 23).

6. Research Methodology

This empirical study followed the positivistic research paradigm with a quantitative research methodology. The exploratory and descriptive research approach was used to evaluate the hypothesised relationships between job demands, resources, and work engagement.

6.1. Data collection

Primary data was collected using the survey method and structured online questionnaires. Non-probability convenience sampling (Quinlan *et al.*, 2019: 178; Ang, 2014: 129) was used to invite sales and service personnel with publicly available e-mail addresses to participate in the survey. E-mails were sent requesting potential respondents to voluntarily opt-in by following the embedded link to the questionnaire hosted on the web-based *QuestionPro* platform. Furthermore, snowball sampling was used to achieve a wider distribution of the questionnaire (Struwig & Stead, 2013: 118).

Large sample sizes are generally regarded as an indicator of the representativeness of the sample (Collis & Hussey, 2014: 198). According to Hahs-Vaughn (2017: 377), the case-to-item ratio of five times the number of questionnaire items can be used to determine the sample size, with a proposed minimum of 100 cases. This study forms part of a more extensive study in which the questionnaire consisted of 45 items. Therefore, the required sample size was 225, which was exceeded in the study by 375 completed questionnaires returned.

6.2. Questionnaire design

The questionnaire of the study consisted of three sections:

- Section A consisted of statements measuring employees' perceived work engagement (ordinal scale). A one-dimensional factor was tested with three items measuring vigour, dedication and absorption, respectively, based on the UWES-3 scale (Schaufeli, 2019: 2).
- Section B involved statements derived from the literature measuring perceived job demands and resources (ordinal scale). Five items were included for each of the three variables: mental demands, work pace, and workload.
- Section C elicited demographic information (nominal scale) using categorical variables, namely, gender, age, qualification, department, length of employment, level of income, and dealer ownership.

The ordinal scales of sections A and B anchored items on a seven-point Likert-type scale ranging from strongly disagree (1) to strongly agree (7). A pilot study was conducted before the full-scale field research, allowing the researchers to pre-assess the questionnaire's validity and reliability.

Feedback from pilot respondents was further used to evaluate the understanding of operational definitions, clarity of statements, and potential misunderstandings.

6.3. Data analysis

Data analysis was conducted using the SPSS (version 25.0) software. The first phase assessed the quality of the research instrument through measures of internal reliability. The Cronbach's alpha coefficient was used to measure the internal consistency of each scale (Quinlan *et al.*, 2019: 114; Hair *et al.*, 2014: 123). The second phase determined the construct validity of the variables. The exploratory factor analysis (EFA) method was used to assess each item's ability to be a valid measure of the construct it intended to measure. In the third phase of the data analysis process, the empirical data's descriptive statistics were calculated through central tendency and dispersion measures. In the fourth phase, Pearson's product-moment correlation was tested to determine if an association between the variables existed. In addition, it was investigated whether there was collinearity between the independent variables. Next, the relationships between the independent variables of job demands and resources and the dependent variable, work engagement, were calculated using simple and multiple regression analyses.

7. Results and Findings

The following sections present the empirical results of the study.

7.1. Demographic data

Table 1 shows the demographic profile of the respondents.

Table 1: Demographic profile of respondents

Gender	Frequency	Percentage %
Female	99	26.4
Male	276	73.6
Total	375	100.0
Age	Frequency	Percentage %
21-30	50	13.3
31-40	110	29.3
41-50	103	27.5
51-60	91	24.3
60 +	21	5.6
Total	375	100.0
Qualification	Frequency	Percentage %
Grade 11 and lower	14	3.7
Grade 12	166	44.3
Diploma	119	31.7
Bachelor's degree	43	11.5
Postgraduate degree/ diploma (e.g. Honours/ Masters etc.)	25	6.7
Other (Please specify)	8	2.1
Total	375	100.0
Department	Frequency	Percentage %
Sales department	260	69.3
Service department	115	30.7
Total	375	100.0
Length of employment	Frequency	Percentage %
0-5 years	170	45.3
6-10 years	74	19.7
11-15 years	39	10.4
16-20 years	41	10.9
21 years +	51	13.6
Total	375	100.0
Level of monthly income	Frequency	Percentage %

< R5001	4	1.1
R5001 – R10 000	67	17.9
R10 001 – R15 000	55	14.7
R15 001 – R20 000	49	13.1
R20 001 +	200	53.3
Total	375	100.0
Dealer ownership	Frequency	Percentage %
Yes	109	29.1
No	238	63.5
Don't know	28	7.5
Total	375	100.0

Source: Own compilation

From Table 1, it is evident that the gender distribution of the respondents is 73.60 percent male versus 26.40 percent female. Most respondents were between 31 - 40 years old (29.30%), followed by those aged 41 – 50 (27.50%). Most respondents indicated that grade 12 (44.30%) and a diploma (31.70%) were the highest educational qualifications. The majority of employees were employed in the sales department (69.30%). In addition, the majority of respondents indicated that the length of employment was no more than five years (45.30%). The vast majority of respondents (53.30%) indicated that their monthly income was more than R20 001. Furthermore, most respondents indicated that the OEM manufacturer/importer did not own the dealership (63.50%) and thus were independent.

7.2. Validity and reliability

Discriminant and convergent validity were assessed through exploratory factor analysis. Internal consistency for reliability was determined by calculating Cronbach's alpha values. The results are presented in Table 2. In terms of validity, the factor loadings represent the correlation between the original variable and its factor and at least three items are required to load per factor. Hair *et al.* (2014: 115) state that factor loadings greater than 0.30 can be considered significant if the sample size exceeds 350. The sample size for this study was 375, and a criterion of 0.40 was used as the cut-off point for valid factor loadings to determine construct validity. Loadings equal to or greater than 0.50 are considered practically significant, and loadings exceeding 0.70 indicate a well-defined structure (Hair *et al.*, 2014: 115). The lower limit of 0.60 for Cronbach's alpha was set as the criteria for reliability, as the research is deemed exploratory in nature with a relatively small number of items per scale (Hair *et al.*, 2014: 162).

Table 2: Results of Exploratory Factor Analysis and Internal Consistency

Variable	No. of retained items	Minimum loadings	Maximum loadings	Cronbach's alpha
Mental demands	3	0.472	0.705	0.689
Work pace and workload	3	0.425	0.693	0.687
Social support	3	0.463	0.855	0.885
Autonomy	5	0.522	0.695	0.785
Development resources	3	0.479	0.756	0.808
Work engagement	3	0.721	0.775	0.819

Source: Own compilation

Table 2 provides sufficient evidence of convergent validity for the variables in the hypothesised model, as all the loadings were greater than 0.40. The factor loadings for autonomy and work engagement also conform to the criterion of being practically significant since it is greater than 0.50 (Hair *et al.*, 2014:115). The reliability results in Table 2 show that values between 0.687 and 0.885 were achieved. The Cronbach's alpha values are all above the cut-off level of 0.6, and therefore sufficient proof of reliability is demonstrated (Quinlan *et al.*, 2019: 114; Hair *et al.*, 2014: 123).

7.3. Descriptive statistics

Descriptive statistics were used to summarise the central tendency of the data by measuring the mean and dispersion of the data around the mean by calculating the standard variation. The results are

presented in Table 3. The questionnaire items were anchored on a seven-point Likert-type scale: 1-strongly disagree; 2-disagree; 3-disagree somewhat; 4-neutral; 5-agree somewhat, 6-agree and 7-strongly agree.

Table 3: Summary of descriptive statistics

Variable	Mean	Standard deviation
Mental demands	6.12	1.04
Work pace and workload	5.05	1.57
Social support	5.62	1.54
Autonomy	5.48	1.43
Development resources	4.96	1.87
Work engagement	6.01	1.23

Source: Own compilation

Table 3 reveals that the independent variable of mental demands had the highest mean value ($\bar{x} = 6.12$). This indicates that respondents “agree” that employees must pay attention to many tasks concurrently, have to memorise various work-related aspects, be attentive to customers at all times and are expected to apply themselves cognitively consistently. The second highest mean value ($\bar{x} = 5.62$) for the independent variables was found for social support. The respondents mainly agree with feeling comfortable with colleagues and supervisors and find their supervisor reliable when difficulties arise. Respondents agree to feel valued by their supervisor. For autonomy, the mean value ($\bar{x} = 5.48$) indicates that respondents agree somewhat to having the freedom to perform work activities, influence the planning of work activities and control the pace of job tasks. Respondents also agree somewhat that they are allowed to make independent decisions and self-select the content of work activities. The lowest mean value ($\bar{x} = 4.96$) was found for development resources. Respondents agreed somewhat that employers offer opportunities for personal growth and development and further training and promotion. The mean ($\bar{x} = 5.05$) for the work pace and workload variable shows that respondents agreed somewhat that there are too many tasks to manage, extra hard work is needed to achieve goals, hurrying is required to complete daily tasks, and a calmer work pace is preferred.

For the dependent variable of work engagement, Table 3 further indicates that respondents are engaged at work ($\bar{x} = 6.01$). Most respondents feel energised and enthusiastic at work and perceive time to pass quickly during the work day.

7.4. Correlation analysis

Table 4 presents the evaluation of Pearson’s product-moment correlation. It is crucial to determine whether no overlap existed in the predictive strength of the variables, as this would indicate collinearity (Collis & Hussey, 2014: 274).

Table 4: Correlation matrix

Factor	Mental demands	Work pace and workload	Social support	Autonomy	Development resources	Work engagement
1 MED	1					
2 PAW	0.350**	1				
3 SUP	0.154**	-0.132*	1			
4 AUT	0.196**	-0.045	0.547**	1		
5 DER	0.232**	-0.065	0.605**	0.522**	1	
6 WE	0.256**	-0.035	0.433**	0.439**	0.389**	1

** . Correlation is significant at the 0.01 level (2-tailed).
 * . Correlation is significant at the 0.05 level (2-tailed).

Source: Own compilation

From Table 4, except for the variable of PAW, all independent variables were significantly ($p < 0.05$) either positively or negatively correlated with the dependent variable of work engagement. The correlation between WE and the independent variables of PAW, SUP, AUT and DER with r-values

ranging from $r = 0.389$ to $r = 0.439$ suggested a weak positive relationship (Zikmund *et al.*, 2013: 564). Little or no association ($r = 0.256$) was found between work engagement and the independent variable of mental demands (Schuster & Liesen, 2017: 189; Zikmund *et al.*, 2013: 564). Since no r -values > 0.7 were found, multiple regression analyses were conducted without removing any variables (Collis & Hussey, 2014: 274).

7.5. Regression analysis

Multiple regression analyses were conducted to investigate the relationships between the independent variables and employees' work engagement.

Table 5: Influence of the independent variables on work engagement

Dependent variable: Work engagement		Adjusted R-Square = 0.269		Collinearity statistics	
Independent variables	Beta	t-value	Sig. (p)	Tolerance	VIF
MED	0.173	3.508	0.001**	0.803	1.246
PAW	-0.051	-1.065	0.287	0.840	1.191
SUP	0.214	3.604	0.000*	0.552	1.811
AUT	0.238	4.294	0.000*	0.638	1.567
DER	0.092	1.561	0.119	0.568	1.759

(* $p < 0.001$; ** $p < 0.05$)

Source: Own compilation

For collinearity, Table 5 indicates that the values of the tolerance of the independent variables were above the cut-off point of 0.25, and the Variance Inflation Factors (VIF) did not exceed the value of five (Schmidt, 2017: 87; Bühner & Ziegler, 2010: 7). Therefore, the critical values at which linear dependencies would exist were not reached (Schmidt, 2017: 87). It was, therefore, possible to proceed with the multiple regression analysis, as no collinearity was evident (Collis & Hussey, 2014: 274).

The R-squared value of 0.269 reveals that the independent variables explain 26.90 percent of the variance in the dependent variable, work engagement. A significant positive relationship ($\beta = 0.173$; $p < 0.05$) was found between mental demands and work engagement. This relationship suggests that work engagement is expected to increase as mental demands increase. A significant positive relationship ($\beta = 0.214$; $p < 0.001$) was also found between social support and work engagement. This relationship indicates that where more social support is available to employees, it is more likely to influence work engagement positively. Autonomy also had a significant positive relationship ($\beta = 0.238$; $p < 0.001$) with work engagement. This finding means that employees with autonomy in performing work tasks experienced positive levels of work engagement. No relationship was found between work pace and workload and work engagement ($\beta = -0.051$; $p > 0.05$). Therefore, employees' work pace and workload did not affect the level of work engagement. No significant relationship was found between development resources and work engagement ($\beta = 0.092$; $p > 0.05$). Therefore, work engagement is unaffected by the provision of development resources in car dealerships.

7.6. Results of hypothesis testing

Table 6 summarises the outcomes of the hypothesis testing based on the results of the multiple regression analyses.

Table 6: Summary of hypotheses

Hypotheses		Decision
H ₁	There is a significant negative relationship between mental demands and work engagement	Rejected
H ₂	There is a significant negative relationship between work pace, workload, and work engagement.	Rejected
H ₃	There is a significant positive relationship between social support and work engagement.	Accepted
H ₄	There is a significant positive relationship between autonomy and work engagement.	Accepted
H ₅	There is a significant positive relationship between development resources and work engagement.	Rejected

Source: Own compilation

From the summary in Table 6 and the regression results presented in section 7.5, it can be seen that H₁ is rejected since there is a significant positive relationship between mental demands and work engagement. No support was found for the hypothesised relationships between work pace and workload, development resources and work engagement. There is, therefore, sufficient evidence to reject hypotheses H₂ and H₅. The regression results further proved that a significant positive relationship exists between the independent variables social support and autonomy and the dependent variable, work engagement. This finding provides clear evidence to support hypotheses H₃ and H₄.

8. Managerial Implications and Recommendations

The following sections elaborate on the managerial implications and recommendations for the job demands and resources that significantly and positively influenced work engagement.

Mental demands

The results of this study show that mental demands have a significant positive relationship with work engagement. This finding implies that the more the dealership employees are exposed to mental demands such as multitasking, memorising various work aspects, paying constant attention to customer service and thinking and planning continuously, the more likely the respondents were to experience work engagement. Under these circumstances, employees feel energised and enthusiastic about work and perceive time to pass quickly. This result is confirmed by the study of Radic *et al.* (2020: 5), in which no negative effect of job demands on work engagement was identified. D'Emiljo and Du Preez (2017: 81) also confirmed this result, as the study found a positive correlation between mental demands and work engagement. With this and the other studies, it was thus established that, contrary to expectations, mental demands do not exhibit negative implications for work engagement (D'Emiljo & Du Preez, 2017: 81).

Schaufeli *et al.* (2019: 587) and Crawford, LePine and Rich (2010: 836) note, however, that this correlation also has limitations when work demands become excessively high and work engagement decreases. Challenging job demands (for example, mental demands) can positively affect work engagement as long as these are low (Schaufeli *et al.*, 2019: 587; Bakker & Demerouti, 2017: 276; Crawford *et al.*, 2010: 836). However, as soon as a tipping point is reached at which the demands become obstructive and unregulated, adverse effects on work engagement and burnout are the consequences (Bakker & Demerouti, 2017: 276; Crawford *et al.*, 2010: 836). According to Crawford *et al.* (2010: 836), hindrance demands can be linked to stress and burnout, as was also investigated in the studies by Ruzungunde *et al.* (2016: 222) and Hoffmeister (2015: 29). The results of the mental demands in this study differ from the studies mentioned above. The mental demand items used in this study represent challenging demands, which are an appropriate level of work stress for optimal performance. A positive correlation can be expected to some degree (Crawford *et al.*, 2010: 836). This effect could be due to, among other things, individual strategies for coping with and recovering from

the mental effort that employees already use (Radic *et al.*, 2020: 5). Radic *et al.* (2020: 5) described a compensation strategy of the employees with, for example, thoughts of the positive financial effects for the family, which produces a certain resilience towards stress (Bosley & Kasten, 2018: 50). However, there may be a risk of alternative adverse effects, so remedial action may still be appropriate (D'Emiljo & Du Preez, 2017: 81). Based on the aforementioned, managers should apply the following recommendations:

- Car dealership employers should provide sufficient latitude and opportunities for relaxation for the staff. Employees should be encouraged to utilise lunch and tea breaks (D'Emiljo & Du Preez, 2017: 83).
- Regarding customer service and task distribution, it should be ensured that there is fairness among colleagues (D'Emiljo & Du Preez, 2017: 83).
- If not already in place, tools, techniques and technologies that can assist with cognitive tasks should be developed and implemented (D'Emiljo & Du Preez, 2017: 83). For example, the Eisenhower principle with the selection and prioritisation of A, B and C tasks according to importance and urgency, the provision of tablets, smartphones or PC access and the use of social media tools for social networking can help (Lee *et al.*, 2017: 834; Siphon, 2016: 602).
- Employees should be made aware of the importance of a healthy diet (balanced meals and drinks in daily life), compensatory time off and sufficient sleep for adequate concentration (Krause & Dayanand, 2020: 323).
- Mindfulness training, for example, mind exercises and meditation, can also be made available to improve employees' cognitive skills (Chen *et al.*, 2020: 38; Bhattacharjee *et al.*, 2017: 34).

Social support

The results of this study show that social support has a significant positive relationship with work engagement. This finding implies that the more the dealership employees felt comfortable with their colleagues and superiors, felt appreciated by their supervisor and could rely on the supervisor when difficulties arose, the more likely employees were to experience work engagement. Similarly, Martinussen *et al.* (2017: 494) found that social support significantly impacted job satisfaction. The findings of this study are further corroborated by Meintjes and Hofmeyr (2018: 8), finding that a significant positive correlation between social support and work engagement exists in a sales environment. Based on these findings, the following recommendations are made on how managers could foster social support:

- Employees should be allowed to interact with supervisors regularly. Thus, employers should have regular one-on-one meetings with employees to create a space to discuss problems, provide support, find solutions and create high-quality relationships and transparency (Arici, 2018: 902; Bosley & Kasten, 2018: 139).
- Respectful treatment of staff should always be upheld (Bosley & Kasten, 2018: 125).
- There should be staff spaces where social interactions can take place. Joint activities such as social events, sporting activities or digital game evenings can also be undertaken to build, maintain and further develop personal bonds with colleagues (Bosley & Kasten, 2018: 139).
- Platforms should be available where employees can access electronic forums such as the company intranet. These platforms will improve the quality of communication at work (Schneider & Schmidtpeter, 2015: 71). Improved accessibility to colleagues and teams should be made possible (Bosley & Kasten, 2018: 139). Open communication should be practised to prevent fear of making mistakes or expressing opinions (Hoffmeister, 2015: 24).
- It should be ensured that employees receive recognition for outstanding performance through, for example, praise, incentives, the transfer of responsibility or the receipt of privileges (Bosley & Kasten, 2018: 125).

Autonomy

Autonomy was found to have a significant positive relationship with work engagement. The implication is that providing employees more latitude to decide how work tasks should be completed,

and allowing employees to give input into the planning of work activities, will lead to greater work engagement. Similarly, opportunities to control the pace and content of work tasks will leave employees feeling invigorated, enthusiastic and immersed in their work. This finding is supported by Shin and Jeung (2019: 9) and Lee *et al.* (2017: 837), who found that work engagement was positively associated with job autonomy. De Spiegelaere *et al.* (2014: 328) also confirmed this relationship and described autonomy and work engagement as the main drivers of employee innovation. Managers are encouraged to foster an autonomous organisational culture by following the recommendations below:

- Managers should encourage employees to operate in self-directed work teams and allow employees to have sufficient latitude for decision-making (Pichault & McKeown, 2019: 67).
- When employees multitask, managers should give employees more freedom in planning and prioritising tasks (Kirchberg *et al.*, 2015: 131).
- Regular meetings with clear communication should clarify the employer's expectations and job requirements, such as timeframes, milestones, and deadlines (Bosley & Kasten, 2018: 60).
- Managers should afford employees a high degree of control and freedom to decide how tasks should be carried out and encourage creative thinking (Lee *et al.*, 2017: 1839; De Spiegelaere *et al.*, 2014: 3).

9. Conclusions

The growth and welfare of organisations form a pivotal part of the economic prosperity of any country. Returns on investment of shareholders must be maximised to ensure continued investment and the welfare of all stakeholders concerned. Work engagement is vital in the global economy as it dramatically improves organisational outcomes. Due to challenges such as complex economic transformation processes from technological changes and the COVID-19 pandemic, work engagement is becoming increasingly crucial for the long-term sustainability of organisations (Wu & Wu, 2019: 3210; Bakker & Albrecht, 2018: 5; Osborne & Hammoud, 2017: 52). Engaged employees drive financial performance, are productive and has high regard for satisfying the needs of customers. These employees are an irreplaceable source of much-needed innovation to sustain competitive advantage.

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Exploring Employee Perception of Performance Appraisal Instruments and Job Outcomes within a South African Government Department

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Keywords

Appraisal instrument, fairness, job satisfaction, motivation, work engagement, commitment, performance.

Abstract

Introduction: Performance appraisal is the key function in the management of performance in the workplace. Many organisations strive to perfect the process of performance appraisals. Both private and public sector organisations are faced with the same challenge of dealing with and making performance appraisal effective. For this to happen organisations need to pay attention to their performance appraisal instrument which is the determining factor of the efficacy of the performance appraisal process.

Problem statement: Past research studies have identified a number of factors that hamper the effectiveness of the performance appraisal instrument. These factors, amongst others, are human resource practices, rater error, application of the instrument and the performance appraisal processes etc. This study aimed at exploring the perceptions of employees in the public sector in South Africa regarding the effectiveness of the implementation of the performance appraisal instrument. The underlying principles against which the current appraisal instruments used by the public sector organisation were measured, were the following: relevance, reliability, discriminability/sensitivity, freedom from contamination, practicability, and acceptability.

The public sector organisation is faced with enormous non-compliance with the performance appraisal evaluations. In terms of its Performance Management and Development System, employees are expected to undergo two formal performance appraisal evaluations. The appraisal reports are expected to be submitted to the human resource unit responsible for performance management at the end of the first semester and the last semester of the performance year. The unit is tasked with the responsibility to establish a moderation committee whose task will be to finalise the process; the timelines for this process are reflected in the performance management procedure guidelines of the organisation. However, it seems challenging to line managers in the organisation to get the process completed.

This study aimed at exploring the extent to which the implementation of the performance instrument affects employee perceptions of the instrument and how it affects the job outcomes (motivation, job satisfaction, commitment and work engagement).

Research methods: To explore the employee perceptions, the study opted to apply the qualitative research methods with an interpretivist approach which allowed the employees to describe the implementation of the performance appraisal instrument in their own individualistic manner. Thus a qualitative descriptive study was found to be plausible for gathering

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relevant information for the purpose of this study. A combination of convenience and purposive sampling was decided on to identify the sample of $N=16$ which represented the 4 districts which make up the province. The sample was subjected to semi-structured telephonic interviews and a qualitative survey to explore their perceptions of the implementation of the instrument. Also, the experiences of the participants on how the job outcomes were affected by the implementation of the instrument were explored. Thematic analysis was performed to interpret the information gathered.

Findings: Generally, employees reflected knowledge in respect of the performance management process as a whole. Only a few participants indicated that the current instrument is fair and dependable. The majority found the instrument to be not fair, unable to measure that which it is meant to, takes up too much of their time, lacks inclusivity, lacks consistency (objectivity), not effective due to the application of the instrument simply to comply, and that the ability of the employee to write will earn them good performance ratings. However, some employees indicated portraying high levels of motivation as a result of the implementation of the instrument, but others on the same note were not motivated. Commitment was negatively affected, whereas job commitment was never mentioned by any of the employees. However, the performance management process induced some level of work engagement on the side of the employees.

Recommendations: It was recommended that the public sector organisation develop a training programme to train all relevant role-players in the performance appraisal; to develop and enhance the current appraisal instrument by introducing technology; or to develop an instrument that is electronically available. In the process of developing a better instrument all relevant stakeholders should be consulted so that the new instrument can be legitimate to employees. Recommendations were made for future research studies so as to circumvent the shortcomings faced by this study

1. Introduction

This study focused on exploring employee's perceptions of the performance appraisal instrument and establishing recommended strategies to improve the effectiveness of the tool being applied within a South African government department.

2. Problem Investigated

There is no one simple solution across the spectrum to an understanding of how employees feel about a performance appraisal system. Swanepoel et al. (2013, p. 266) define the performance appraisal system as a "formal and systematic process by means of which the job-relevant strengths and weaknesses of employees are identified, observed, measured, recorded, and developed". The usefulness of the existing performance appraisal instrument in serving this function has been questioned, particularly viewed from a cross-cultural perspective (Brouwers & Van de Vijver, 2015) and more specifically within the South African context where the demand for relevant tools is hardly met (Foxcroft & Roodt, 2009). In this context, the usefulness of performing an appraisal instrument is closely linked to perceptions of fairness and positive work outcomes such as commitment and corporate citizenship (Sallah et al., 2013; Whitman et al., 2012). Rarely though have people's own perceptions of performance appraisal instruments received systematic attention in their own right. In the present study people's perception of a performance appraisal instrument is examined in the South African public sector. The study explores the content of people's perceptions of the performance appraisal instrument to job-related outcomes.

The public service is an institution that does not make profit or aim to maximise it. Instead, its primary objective is to render services to the population of the country as per the mandate of the South African constitution without raising or receiving revenue for the services rendered. A good

performance appraisal tool should assist management or leadership in controlling and guiding employees towards improved performance (Carrell et al., 2000), being able to gauge performance attributes that are worth reinforcing and identifying performance gaps, which will all in all lead to the development of training plans to address the performance shortcomings.

The successful implementation of the instrument lies in the hands of raters (evaluators) who could be supervisors and/or managers in the organisations, and human resources practitioners are expected to train the managers on how to conduct the appraisal interviews and how to provide constructive feedback to employees, which will induce positive performance and motivate them for development (Daft, 2000). The effective use of the appraisal instrument can contribute to the satisfaction and motivation of employees (Carrell et al., 2000). This will ensure that employees view the performance appraisal as a useful and important system that is not meant to affect them negatively.

The study proposed here was set to explore the perceptions employees in the public sector in South Africa have of the effectiveness of the implementation of the performance appraisal instrument. The problem regarding the implementation of the performance appraisal instrument is guided by the six fundamental requirements as stipulated by Swanepoel et al. (2000). For the performance appraisal tool to be regarded as effective it should satisfy the following requirements, which are relevance, reliability, discriminability/sensitivity, freedom from contamination, practicability, and acceptability (Swanepoel et al., 2008).

3. Research Objectives

3.1 The research objectives are divided into two sections, being general objective and specific objectives.

The overarching general objective of the study is to explore employee perceptions of performance appraisal instrument and job outcomes within a South African Government department and is explored through the following specific objectives in the dissertation format:

3.2 Specific Objectives

In this study, the following specific research objectives are identified to articulate and achieve the already stated primary and overall research goal:

The specific objectives of the study thus are to:

- Conceptualise the effective implementation of performance appraisal instrument and job-related outcomes according to literature.
- Explore the perceptions of employees on the current performance appraisal instrument.
- Determine the experiences of the employees regarding the effective implementation of the current performance appraisal instrument.
- Explore how the implementation of the performance appraisal instrument contributes to the job outcomes of the employees.
- Make recommendations for changes to improve the performance appraisal instrument.
- Make recommendations for future research and practice.

4. Literature Review

The public sector as an institution is highly concerned about performance management as is the private sector. The dynamics faced by organisations in dealing with performance management should or are expected to play out in the public sector. Some research has been done in the private sector on how performance management appears to be a factor in the elements of motivation, job satisfaction, work engagement, and commitment. And more other studies are currently produced.

Van der Westhuizen (2016) stated that performance appraisal in the South African public sector is carried out as part of performance management to deal with underperforming government departments and to decrease the number of public protests linked to service delivery. The main challenge is complying with the performance appraisal deadlines.

The public service is an institution that does not make profit or aims to maximise it. Instead, its primary objective is to render services to the population of the country as per the mandate of the South African constitution, without raising or receiving revenue for the services rendered. For effective management of public sector employees, it is important to explore how general performance management and the performance appraisal instrument affect their perceptions and in turn affect the way they will relate to the institution and ensure that service delivery takes place. It will be interesting to establish how closely related factors imperative in both the public and private sector are when it comes to performance management and performance appraisal specifically.

This study aims at exploring the public sector employees' perceptions of the current performance appraisal instrument and how their perceptions of the performance appraisal instrument affect job-related outcomes (commitment, job satisfaction, motivation, and work engagement) for them. Performance appraisal is pivotal in workers' daily lives and their future as employees. Van der Westhuizen (2016, p. 41) defined the performance appraisal system as a "part, phase, activities or aspect of performance management through which the performance of an employee is appraised and a performance score or rating that indicates the level of performance is decided upon". In another way Cascio and Aguinis (2011) defined performance as a tangible thing that people do which are relevant to the goals of the organisation. From the definition it can be deduced that performance is not an abstract or implied but an observable matter that can be linked to the objectives of the organisation. It can be regarded as good performance if it supports or leads to the realisation of the objectives of the organisation.

The success of any organisation depends on the quality and characteristics of its employees; thus making performance appraisal a pivotal tool in reviewing and discussing employees' performance on the assigned duties and responsibilities (Adejoke & Bayat, 2013). Daoanis (2012) stated that performance appraisals in organisations are used to track individual contribution and performance against organisational goals, to identify individual strengths and opportunities for future improvements, and to assess whether organisational goals are achieved. Simply put by Agarwal (2011), 'performance appraisal' generally indicates measuring job performance. Considering the definitions quoted, it can be deduced that similarity exists in the manner in which performance appraisal is viewed by both international and national researchers.

In the recent past emphasis has been placed on the effectiveness, fairness and impact of the performance appraisal instrument on the motivation and job satisfaction of employees. Perceived fairness of the performance appraisal has been found to have a positive impact on a number of work outcomes, including job satisfaction, job performance and organisational citizenship (Whitman & Caleo, 2012). The outcome of this study was further supported by Salleh et al. (2013) who found that perceived fairness of performance appraisal has influenced employee commitment towards the organisation through the mediating factor, satisfaction. In their study, Couhan and Verma (2014) focused on the improvement of a performance appraisal instrument for better management of human resources of the organisation, whereas Adejoke and Bayat (2013) used a balanced scorecard to identify performance enhancement and to assist in promoting professional growth for nurses in the hospital.

The utility of existing performance appraisal tools in serving this function has been questioned, though from a cross-cultural perspective (Brouwers & Van de Vijver, 2015), and particularly in the South African context in which the demand for relevant instruments is hardly met (Foxcroft & Roodt, 2009). In this context, the utility of performance of appraisal instruments is closely linked to perceptions of fairness and positive work outcomes such as commitment and corporate citizenship (Sallah et al., 2013; Whitman et al., 2012). Rarely though have people's own perceptions of performance appraisal instruments received systematic attention in their own right. A good performance appraisal instrument should be used as an instrument meant to assist management or leadership in controlling and guiding employees towards improved performance (Amos et al., 2016), to be able to gauge performance attributes that are worth reinforcing and to identify performance gaps that will lead to the development of training plans to address the performance shortcomings

(Westhuizen et al., 2013). The successful implementation of the tool is in the hands of raters, who could be supervisors and/or managers in the organisations, and human resource practitioners are expected to train the managers on how to conduct the appraisal interviews and how to provide constructive feedback to employees, which will induce positive performance and motivate them for development (Wärnich *et al.*, 2015). The effective use of the appraisal instrument can contribute to the satisfaction and motivation of employees (Carrell et al., 2000). This will ensure that employees view the performance appraisal as a useful and important system that is not meant to affect them negatively.

The fundamental principles that underpin the study are that the performance appraisal instrument has to satisfy the six principles borrowed from Swanepoel et al. (2008), which are relevance, reliability, discriminability/sensitivity, freedom from contamination, practicability, and acceptability. The performance appraisal instrument is expected to be *relevant* to the assessment of performance. The instrument should also be both strategically congruent and context congruent (Aguinis, 2014) by incorporating both the unit and organisational strategies and on the other hand be relevant to both the organisation's culture and the broader culture of the region or country. A performance appraisal instrument should assess employee performance using predetermined job standards (Wärnich et al., 2015). Furthermore, Carrell et al. (2000) stated that the most expected results born out of the process are to achieve both the evaluation and developmental objectives. Lohan (2021) stated that a performance management system provides a continuous process of identifying, measuring, and developing the performance of employees and teams, and aligns it with the strategic goals of the organisation. A large number of efforts of performance appraisal are narrowly focused and over-simplified – so much so that they pay little regard to the favourable perceptions of employees (Demissie, 2015).

Reliability of the performance appraisal instrument can be determined when the instrument is consistent and error free (Aguinis, 2014). Another factor of critical importance is the training of supervisors to be able to conduct accurate appraisals (Wärnich et al., 2015). A study conducted in Kenya by Ndirangu and Ngari (2014) found that validity and reliability of trait-based performance appraisals are highly suspect because the rater's perceptions of the traits being assessed are affected by his/her opinions, biases, and experiences. Lunenburg (2012), as quoted by Zaki et al. (2018), stated that the performance appraisal process is far from accurate and objective, occasionally resulting in rating errors.

The principle of discriminability/sensitivity expects the performance appraisal instrument to be able to distinguish between bad performance and good performance. The performance appraisal instrument should provide information that allows for the identification of effective and ineffective performance (Aguinis, 2014). Chouhan and Verma (2014) stated that performance evaluations should reflect the performance levels of represented employees. Performance appraisal, when conducted in the correct manner, can contribute significantly to employee motivation (Ayomikun, 2017). To reach a certain level of success, organisations must be able to measure how well its employees perform and to use that information to first identify and then reward high performance (Phin, 2015).

Freedom from contamination as a principle of the performance appraisal instrument for it to be effective is critical. Aguinis (2014) referred to this principle as validity, which refers to amongst others, not including factors beyond the control of the employee. Muthee (2020) points out that there should be freedom from contamination by ensuring that the employee is not unfairly appraised due to factors beyond his control. Bogdan (2012) indicated criteria requirements which should be considered, among which was freedom from contamination.

Instruments that are effective are easy-to-use and more beneficial to use, such as increased performance and job satisfaction (Aguinis, 2014). Carrel et al. (2000) defined **practicality** as a performance appraisal instrument that is easy to be understood by both the managers and employees, it takes time, papers it requires, and cost involved in the entire administration. Riantini et al. (2018) in a study titled "Development of science practicum performance assessment in junior high school"

tested practicality of the performance assessment instrument in which they found that the science-based science performance assessment appraisal instrument is easy to use and also found no significant difficulties in its use. Similarly, Yudha et al. (2018) in their work stated that practicality of a test is an indicator of whether or not the quality of a measuring tool is good. They found that the assessment instrument of performance on the developed Mathematics learning instrument met the requirement of practicality.

A good performance appraisal instrument that is perceived by employees to be good complies with the principle of *acceptability* and fairness (Aguinis, 2014). Uniform guidelines are introduced in order to ensure purposeful action for performance appraisal, as well as regulations enshrined in the statutes such as Public Service Act 103 of 1994, the Public Service Regulations of 2001, and the White Paper on Human Resource Management in the Public Service of 1997 (Swanepoel et al., 2013). The following nine steps were recommended to increase employee acceptance level of appraisals and the accuracy thereof (Akhtar & Khattak, 2013):

- Preparation and scheduling of appraisals in advance.
- Creation of a supportive environment.
- Explaining the purpose of the appraisal.
- Employee involvement in discussion and self-evaluation.
- Focusing on work behaviours instead of personalities.
- Supporting results with specific examples.
- Both positive and negative feedback.
- Employee's understanding of explanations of outcomes; and
- An action plan for development

5. Research design

The research design is composed of the research approach, research strategy and research method.

5.1 Research approach

Performance appraisal is a widely researched subject throughout the world, but there is still a vacuum of information that intrigues many human resource practitioners and organisations at large (Longenecker & Gioia, 2001). There is no one simple solution across the spectrum to an understanding of how employees feel about a performance appraisal system. This research will follow a qualitative research approach. According to Hughes & Kamal a paradigm is defined as “a way of seeing the world that frames a research topic” and influences the way that researchers think about the topic. The research study has assumed the interpretivism paradigm approach that will enable the researcher to appreciate the subjective meaning of social action (de Vos et al. 2011). Willis (2007) in the study by Thanh and Thanh (2015, p. 25) stated that interpretivism usually seeks to understand a particular context and the core belief of the interpretive paradigm is that reality is socially construed. Interpretivism as a paradigm assumes that reality is subjective and can differ considering different individuals (Alharahsheh, & Pius, 2020, p. 42). The effectiveness of the performance appraisal tool will be gauged by using the meanings which will be generated from the manner in which employees will narrate their perception. It will be well-suited in exploring hidden reasons behind the complicated problem of the performance appraisal tool (Bhattacharjee, 2012).

5.2 Research strategy

A qualitative descriptive study “strives to describe, analyse and interpret a particular phenomenon” (de Vos et al., 2011). The aim of the current study was to explore the perception of employees regarding the effectiveness and implementation of the appraisal tool. Qualitative descriptive methodology was identified to be an appropriate vehicle for this study to obtain relevant data and to be able to analyse it in relation to the research objectives. Employees provided descriptions of their perceptions of the phenomenon and the researcher analysed and interpreted the perceptions to determine the kind of perceptions employees held concerning the performance appraisal tool.

5.3 Research method

The research method consisted of the literature review, research setting, entrée and establishing researcher roles, sampling, data collection methods, recording of data, data analysis, strategies employed to ensure quality data, reporting style, and ethical considerations.

6. Literature review

Snyder (2019) described literature review as a process by means of which the researcher starts by describing previous research to map and assess the research area to motivate the aim of the study and justify the research question and hypotheses. The researcher consulted books and research articles on a subject related to this study to establish the relevancy of the research questions and to determine how much work has already been done on the subject. This was done by reading textbooks and by visiting online research databases such as EbscoHost and Google Scholar on published journals from 2008 and 2021.

6.1 Research setting

Relevant data was collected by means of interviews and a qualitative survey in a public service department situated in Mpumalanga province. The rationale for collecting data from that public department is based on the premise that environments in the public service departments are similar (Netshakhuma, 2021). Hence data collected from that department could be used to understand other public service departments; thus, not many adjustments will need to be made. Therefore, it was important for the researcher to look at transferability in order to analysis how previous information from public service department is relevant for this study.

Employees of the selected public service department were used to collect data. For the purpose of convenience, participants were allowed to indicate the date and time they would be available and when it would be convenient for them to participate in the interview without disturbing their work programme. Prior to the telephonic interview the researcher distributed the schedule of the interview and the time to all the sampled subjects via email. Participants were requested to give their consent to have the interview recorded and were assured of the safe keeping of the records and that the information gathered would be kept confidential.

A link via email was also sent to all participants to gain access to an online qualitative survey on the Google forms platform. All participants were alerted to the online voluntary consent form which they were expected to first read and secondly complete prior to the completion of the online questions. The online consent forms as well as the answers to the questions were auto saved and submitted through electronic means using the Google forms platform. The completion of the online consent form meant that they were fully conversant of their rights to participate in the online survey and that they had the right to withdraw from the survey when they were no longer interested in participating. Participants were informed that the questionnaires would be auto saved after completion. The data collected in this manner would only be used for research purposes, and confidentiality would be maintained.

6.2 Entrée and establishing researcher roles

The researcher wrote a letter to the Regional Executive Manager of the selected public sector department seeking permission to conduct the study. Once the approval had been granted, employees of the selected public sector department situated in Mpumalanga province were contacted both telephonically and via email (4) by the lead researcher of the study. Each one of the employees selected for interviewing was sent a consent form to complete and sent it back to the researcher; this was a prerequisite for the interview. The content of the consent form clarified the objectives, the importance of the study, and the rights of the participants and confidentiality by which the researcher will abide throughout the research process. Employees who agreed to participate in the study and those that sent back their completed informed consent forms were later contacted for the purpose of arranging the interview via the contact details they had provided to the researcher through emails.

Next, an online qualitative survey was also used. The framework and structure of the survey was taken from Google forms. The questions featured in the survey were self-developed and were put into Google Forms and further developed to incorporate the biographical data as needed by the researcher. The Google Forms platform was opted for because it was easy to customise and did not require any copyright clearance. In addition, the platform was readily accessible and free of charge. Participants were emailed a link that directed them to the Google forms survey. Concerning compliance with the Protection of Personal Information Act (POPIA) the researcher took time to ensure, through the consent form distributed to all participants, that it was clear what information was collected, and how the information was collected (namely, by means of an interview and an online survey). The details of the researcher were communicated as well as what the data would be used for, how it would be stored and processed, how it would be retained and destroyed and that the data was gathered with the necessary consent from participants, and approval from the university. The researcher sent emails to all intended participants who had a link for the online questions. In the email participants were reminded once again of their right and that they needed to complete the online consent form before answering the online questions.

6.3 Research sampling

Data collection was done by using both convenience and purposive sampling. Etikan et al. (2016) defined convenience sampling as a type of non-probability or non-random sampling where members of the target population that meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the purpose of the study. De Vos et al. (2011) explain that for selection in purposive sampling the researcher considers all those characteristics that best represent or are typical to the case in study. The qualification criteria that the sample needed to satisfy for the participants to warrant inclusion in the study were the following: 1) participants must be employed in the selected public service department in Mpumalanga province and must be from either of the four (4) district offices; 2) participants must differ in occupational categories; 3) participants must have a good understanding of English as a language; 4) participants must grant permission for the interview to be voice recorded; and must voluntarily agree to participate in the research by answering interview questions and complete the online questionnaire.

The sample size of the population was 16 ($N=16$) with a breakdown of 7 ($n=7$) managers and 9 ($n=9$) junior employees to cover those in the public sector who have people reporting to them as well as those who do not. However, the number sampled was controlled by data saturation; hence the researcher did not continue to interview the number as anticipated in the research proposal. Therefore data saturation was reached due the researcher obtaining enough information from the sample size that was interviewed.

Table 1 below provides the breakdown of the sample in terms of their demographic presentation to provide a broader analytical picture of the data collected and how spread the sample was to gather qualitative data.

Table 1: Characteristics of the participants (N =16)

<i>Item</i>	<i>Category</i>	<i>Frequency (f)</i>	<i>Percentage (%)</i>
<i>Gender</i>	Male	9	56,25
	Female	7	43,75
<i>Ethnicity</i>	Black	16	100
<i>Language</i>	isiZulu	6	37,5
	siSwati	4	25
	Sepedi	3	18,75
	Xitsonga	2	12,5
	Setswana	1	6,25
<i>Highest qualification</i>	Grade 12	3	18,75
	Degree	4	25
	Post graduate degree	3	18,75
	Diploma	5	31,25
	Other: Certificate	1	6,25
<i>Job level</i>	Clerk	5	31,25
	Senior Clerk	2	12,5
	Practitioner	2	12,5
	Assistant Manager	3	18,75
	Manager	3	18,75
	Senior Manager	1	6,25

6.4 Data collection methods

Trustworthiness and cogency of the study depend on the selection of an appropriate and relevant data collection method that will optimise the quality of data collected. Hence the researcher in this instance opted for conducting interviews as a data collection method. Qualitative interview according to McGrath et al. (2019, p. 1002) “afford researchers the opportunity of exploring, in an in-depth manner, matters that are unique to the experiences of the interviewees, allowing insight into how different phenomena of interest are experienced and perceived”. One-on-one interview was adopted whereby a semi-structured telephone/virtual interview was conducted with each participant. The semi-structured telephone/virtual interviews according to Rubin and Rubin (2005) as quoted by Alshenqeeti (2014, p. 40) “allows depth to be achieved by providing the opportunity on the part of the interviewer to probe and expand the interviewee’s responses”.

7. Findings

In this section the following will be outlined, outline of the findings, limitations, recommendations, practical implications and conclusion.

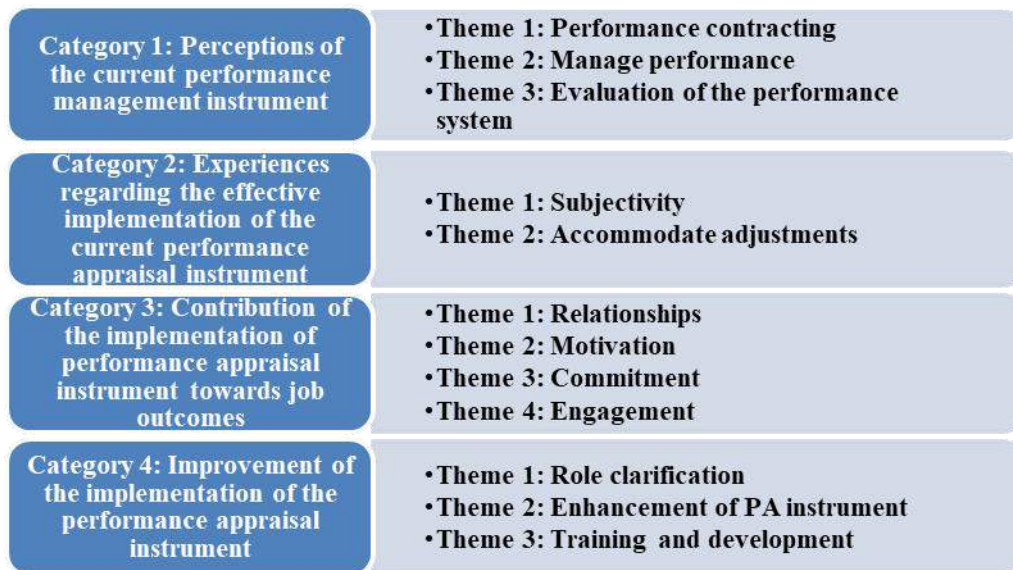


Figure 1: Overview of categories

Category 1: Perceptions of the current performance management system

The first category was structured based on the responses from the sample based on the following questions posed during the interview and the qualitative survey:

- What is your understanding of the performance management and development system (PMDS)?
- Please tell us about your experience of the performance appraisal tool used by your organisation?

Category 2: The experiences of the employees regarding the effective implementation of the current performance appraisal tool

The second category focused on the experiences of the employees regarding the effective implementation of the currently applied performance appraisal instrument. As presented in the themes extracted from the data for this category were analysed using the responses from the following questions as posed during the interview and the qualitative survey:

- What is your experience of the effectivity of the current performance appraisal instrument? Please elaborate.
- What is your perception of the manner in which the performance appraisal tool is implemented?
- Do you think that the instrument is able to assess that which it is purposed to? If not, why?
- Do you find the performance appraisal instrument to be fair? If not, why?

Category 3: Contribution of the implementation of performance appraisal instrument towards job outcomes

However the themes extracted from the data for the third category were analysed using the responses from the following question as posed during the interview and the qualitative survey:

- In your experience, does the implementation of the performance appraisal tool contribute to your job outcomes? If yes, please elaborate.

Category 4: Suggestions for improvement of the performance appraisal instrument and of the implementation thereof

Category 4: were analysed using the responses from the following question as posed during the interview and the qualitative survey:

- What would you suggest being done to improve the implementation of the performance appraisal tool?

- What would you suggest or recommend be done to improve the performance appraisal tool itself?
- What changes, if any, can you recommend being made to the performance appraisal tool so as to improve its effectiveness?

8. Outline of the findings

The general objective of this study was to explore employee perceptions of the performance appraisal instrument and job outcomes within a South African Government department. It will be discussed by outlining the findings of each of the specific objectives.

The first objective of the study was to conceptualise the implementation of performance appraisal instruments and job-related outcomes according to literature. Performance appraisal has been defined by many researchers and scholars, but for the purpose of this discussion a definition by Kondrasuk (2011) was used. In his article he defined performance appraisal as an instrument or form used to assess employee job performance, or as an interview during which employee performance is discussed, or as a process by means of which job expectations and actual achievements are measured and feedback is provided to the employee. Performance appraisal aims to assess, manage and ultimately improve the performance of employees (Gözükara et al., 2017). Grubb (2007) clearly outlined the main reasons for which performance appraisals are done. The reasons cited in the articles were: 1) to promote organisational efficiency and effectiveness; 2) to enhance individual employee performance and satisfaction; 3) to simplify administrative processing; and 4) to ensure management retains control of employee behaviours and attitudes. It can be deduced that although performance management is a tedious process it is imperative for organisations to thrive by improving the application or implementation thereof.

Organisations should in the process take heed of the fact that the success of the performance appraisal is heavily dependent on the perceptions and expectations employees have of the performance appraisal process (Kondrasuk, 2011). When employees see no fairness in the performance appraisal and do not trust it, they will have no faith in the system. Management of performance in organisations makes positive contributions by increasing motivation to perform (Aguinis, 2014). Moreover, in the work environment where performance appraisal induces job confidence, employees display positive attitudes towards it (Njuguna & Maende, 2017) and they would feel motivated to give their best in quest of achieving the goals of the institution (Kyeremeh & Pimpong, 2018).

The second objective was to explore the perceptions of employees on the current performance appraisal instrument. Employees reflected a fairly good knowledge of the performance management and development system. They understood the importance of entering into a performance contract and that the set performance standards in the performance contract need to be aligned with the strategic goals or objectives of the organisation. Newman and Milkovich (2004), as quoted in a study conducted by Kampkötter (2014), indicated that in a formal performance appraisal the alignment of the employee goals and those of the firm is meant to motivate employees to apply the performance appraisal system. From the responses it could be deduced that for organisations to reach greater heights of achievement, agreement on performance standards should be reached during performance contracting. This point is reflected in the study conducted by Grubb (2007) in which it is stated that employees achieve goals and measures set for them at the expense of a number of other activities which are not measured or for which the employee is not specifically held accountable. Further clarified by Daoanis (2012) in an ideal situation the achievement of employees of their own individual performance targets assists the organisation in meeting and indeed in exceeding its strategic targets by linking individual performance targets to the overall strategic target of the organisation.

The results indicated that employees understand and accept that, at a certain interval, performance should be assessed to ascertain the extent to which the agreed performance standards had been met. This will also assist in identifying performance gaps and in deciding on the best possible intervention to address these gaps. Although the standard setting may seem “the most controversial problem” (Cizek et al., 2004), it makes the performance assessment seamless when it is well-orchestrated.

Ayomikun (2017) explains that the critical intention of this process is to identify strengths and weaknesses that can be used in recommending actions for improved employee performance. Some employees indicated the expectation that the performance assessment process would identify and reward satisfactory performance. Employees expected the instrument to be able to distinguish satisfactory performance from 'bad' performance for only the best performers to receive performance rewards. Eiseberger et al. (1999, p. 1028) cited that "employees' expectations of increased pay for high performance should be experienced as more controlling than pay determined by variables independent of performance". The employees who held the view that the final performance rating was dependent only on the individual's writing skills felt that the instrument was failing in identifying good performers. In the study conducted by Idowu (2017) it was indicated that performance appraisals can be used to motivate employees through rewards. Although put differently by Sakti (2021), the hard effort exerted by employees may not necessarily guarantee that expected productivity will be realised, unless it is channelled in the direction desired by the organisation. It is at this stage that certain employees raised a misgiving with the process in as far as the consistency of the assessment is concerned. The involvement of the moderation committee at the end of the process, which will only focus on the written report and not consider any other factors that may have come into play during the performance. The challenge is well put in the study conducted by Cintrón and Flaniken (2011), namely that the most common error with the system is found within the organisational system; not with the employees in the organisation. This holds the potential of influencing the attitude employees may have towards the instrument itself and the manner in which it is implemented, especially when there is a feeling among employees that some supervisors demonstrate lack of knowledge of the instrument they are administering, to evaluate performance. The possibilities of inviting the challenges into the system that can be attributed to personal bias, as stated by Kondrasuk (2011), are high. This makes the process to be selective and to lack objectivity, which has a significant impact on how employees view the entire system.

The third objective of the study was to determine the experiences of the employees regarding the effective implementation of the current performance appraisal instrument. The findings generally indicated that the current performance appraisal instrument lacks objectivity. The results showed that the performance appraisal is not based on actual performance, but that the ability of an employee to write earns them performance ratings. In this instance fairness and accuracy of the system becomes questionable. This finding was further confirmed by findings relating to the effectiveness of the moderation process. Rademan and Vos (2001) found in their study that employees' perceived fairness had a bearing on whether mutual trust exists between the rater and ratee. Obviously, effectiveness of the instrument depends on "how it is correctly done and implemented" (Daoanis, 2012, p. 58). This factor influenced the manner in which they viewed the tool and the application thereof, as some felt that the instrument is not fair or it is not implemented fairly. This factor is covered in the study conducted by Kim and Rubianty (2011) who stated that managing and improving perceived fairness may help increase employees' motivation. Furthermore, Kondrasuk (2011) indicated that when employees do not observe any fairness and do not trust the process of performance appraisals they will quickly deny the importance of the system.

The findings indicated that the performance appraisal process is time-consuming and needs to be more user-friendly. The negative attitude reflected by employees is further exacerbated by the time it takes them to complete the performance appraisal instrument. Agarwal (2011) stated that organisations both in the public and private sector struggle to develop cost-effective, meaningful measures that can drive performance management without yielding undesirable results. The participants indicated that the performance appraisal instrument consumes too much of their time and that it is mentally exhaustive. It implies that employees will have to take from their production time to do performance assessment reports. Idowu (2017) found that the performance appraisal systems that link performance to rewards help in increasing employee motivation, and that the use of the performance appraisal systems to set objectives, to benchmark and to help identify employees' strengths and weaknesses, yield greater satisfaction and consequently higher levels of motivation. Moreover, performance assessment instruments are problematic if they are not representatively

describing the competency (Nuritasari et al., 2020).

The findings showed that it would be necessary to accommodate *ad hoc* tasks, such as activities that they may have performed which were not considered during performance assessment. The results showed that time was spent on additional activities and also that they were delegated to the participants as duties by their respective supervisors. Grubb (2007) stated that employees achieve goals and measures set for them at the expense of a number of other activities which are not measured or for which the employee is not specifically held accountable. This is one of the performance appraisal challenges cited by Cintrón and Flaniken (2011), namely that performance standards and ratings occasionally vary widely and unfairly.

The participants mostly indicated that the instrument is not dependable. To qualify the perception, some felt that the implementation of the instrument is done maliciously, considering the attitude displayed by their supervisors towards the entire process. Of critical importance is how employees perceive the organisation's provision of fair treatment in terms of performance appraisal for them to be eager to protect the image of their organisation (Said et al., 2017). To a certain extent some participants indicated the process as being used as a punishment rather than to assess performance. This perception is not holding the connotation similar to that indicated by Schleicher et al. (2018) who stated that performance appraisal is commonly understood as a discrete, formal, organisationally sanctioned process. Their reflection of the instrument was based on its inability to measure that which it is meant to measure. Pace et al. (2011, p. 7) stated that "reliability is a key property of a critical appraisal instrument, and the efficiency is important from a reviewer's perspective." This negative perception concerning the instrument may affect the employee's acceptance of the performance appraisal outcome and the effectiveness of the system as a whole. However, there were a few participants who felt that the appraisal instrument is dependable, meaning that it is effective in terms of yielding the expected outcomes in relation to performance assessment. This notion is supported in the study conducted by Daoanis (2012) who stated that the success of the performance appraisal system depends on the results of such an instrument. As stated in Salleh et al. (2013), procedural fairness is the perception of employees that they hold of the organisation's performance management system, which should be regarded as being fair. Some participants in this current study construed or regarded the performance appraisal instrument to be objective as it is able to assess that which it purposed to assess. Grubb (2007) states that performance appraisal assumes the burdens of objectivity. Whitman et al. (2012) described distributive fairness as a relationship between employee inputs and outcomes. Perception of accuracy in the study by Rademan and Vos (2001) was stated as having a direct bearing on the reliability of the process.

The findings also reflected some employees' experience of the appraisal instrument as not fair. This feeling among the participants is derived from the fact that the instrument looks at particular aspects of performance targets and excludes other performances that have been executed. Daoanis (2012) stated that the success of the appraisal system depends on the results of such instrument. Grubb (2007) points out that organisations strive to obtain clear, objective outcomes of individual performances. It is crucial for organisations to pay more attention to how employees perceive its practices. Dzansi (2016) indicated that it does not assist in obtaining service quality when employees perceive the HRM practices to be unfair.

The fourth objective of the study was to explore how the implementation of the performance appraisal instrument contributes to the job outcomes (motivation, commitment, job satisfaction (relationships), and work engagement) of the employees. From the results it became clear that relationships play a key role during the performance appraisal process. Some participants reported feeling energised, committed and more dedicated when they knew what was expected of them and when they had met their targets. It was also reflected that a stronger focus should be placed on people development during the performance management process so that staff might even function more efficiently. The findings showed that a good relationship with the supervisor led to the participants experiencing their targets being clearer and they felt more motivated. The supervisor demonstrating understanding towards the employee further led to positive feelings about the process. Literature

shows that work engagement is a key element of well-being and leads to positive feelings among employees (Schaufeli & Taris, 2014). Work engagement can be defined as “a positive, fulfilling, work-related state of mind that is characterized by vigour (that is, high levels of energy and mental resilience while working), dedication (referring to a sense of significance, enthusiasm, and challenge), and absorption (being focused and happily engrossed in one’s work)” (Schaufeli & Taris, 2014; p. 46). A dimension of employee well-being is having close relationships and feeling valued by others (Coffey et al., 2014). Schaufeli and Taris (2014) state that feedback to an employee would promote learning and it is assumed that through the feedback, job competence could be improved. This is viewed as a job-resource, as does social support. Having these resources available to the employee stimulates a “fulfilling, positive work-related state of mind (i.e., work engagement)” (p. 47). It is therefore important especially during the performance management process to focus on valuing employees and building strong mutual relationships; thereby improving work engagement.

The findings showed that the implementation of the instrument induces prominent levels of motivation. The sentiment of those who are motivated by the system is that it is able to determine employees who are performing exceptionally well and to award them with performance bonuses. This acknowledgement has a positive influence on the motivation of the participants. Furthermore, when targets were clear and well-understood employees felt motivated, even to exceed the set targets. The theory on the Job-Demands Resources model (Schaufeli & Taris, 2014) indicates that sufficient availability of job resources, such as supervisor support, play a motivational role in employees. As can be seen in the current study, having sufficient job-resources led to the participants being willing to put in effort towards goal attainment and thereby achieving work goals. This can further be supported by a South African study conducted by Heyns and Kerr (2018) that looked at motivation from the perspective of the self-determination theory on generational cohorts, which found that both generations experience a similar degree of satisfaction of the basic intrinsically motivated physiological needs. However, some participants of the current study indicated that the manner in which the performance appraisal instrument is implemented has a negative impact on their motivation. Nabi et al. (2017) found that motivation and performance have a natural, if not an obvious connection, which improves employee effectiveness and efficiency for achieving organisational goals. Performance of employees is heavily reliant on motivation, as can be seen from the theory relating to the JD-R model (Schaufeli & Taris, 2014). Van der Kolk and Van Veen-Dirks (2019) supported the analysis by indicating that both intrinsic and extrinsic motivation is positively associated with performance.

The study showed that the participants had a sense of accomplishment when they reached their targets and met the satisfaction of their employer. This correlates with the theory on the JD-R model indicating that job resources stimulate work engagement through the achievement of work goals (Schaufeli & Taris, 2014). In a study conducted abroad by Nasurdin et al. (2018) it was found that performance appraisal positively affects organisational commitment. The results from a study conducted by Setiawati and Ariani (2019) similarly found that employee performance is influenced by commitment, since the more committed an employee is to an organisation; the harder they work. Furthermore, a South African study conducted by Mabaso and Dlamini (2018) in the educational sector found that performance management significantly predicted organisational commitment. However, some of the participants, who represented the larger number of the sample, indicated lack of commitment, citing the unfairness they perceived in the process of the performance appraisal. In the event employees perceive bias or favouritism in managerial behaviour during the performance appraisal process that holds the potential of increasing negative perceptions (Njuguna & Maende, 2017).

From the results it can be deduced that unambiguity in the performance standards and targets enhanced the enthusiasm of the participants to work engaged. Findings of a previous study on this construct found that training satisfaction and performance appraisal satisfaction are key drivers of employee engagement at work (Memon et al., 2021). Similarly, Ajibola et al. (2019) established that a relation existed between performance appraisal and employee engagement. A number of South African researchers quoted in the study by Victor and Hoole (2017) found organisational rewards and

workplace trust to have a stronger influence on the increase of work engagement by employees. When subordinates perceive their supervisors as trustworthy, their psychological well-being is positively affected, and in turn it induces their level of work engagement (Maximo et al., 2019). Furthermore, (Coffey et al., 2014) state that positive relationships lead to the employee feeling good and valued and contribute to well-being. The supervisor role is crucial in affecting the perceptions of subordinates regarding the implementation of the performance appraisal process and of the instrument being used for executing the process.

The findings suggested that when the performance management system is used effectively it would result in a positive impact on the organisation. It was reported that the organisation would “*prosper if employees perform well*”, thereby highlighting the importance of employee wellbeing. If an organisation looks after its employees there are many benefits. Schaufeli and Taris (2014) state that stimulating work engagement in an organisation fosters positive organisational outcomes, such as organisational commitment and performance.

Job satisfaction in this current study is an absent factor but with critical influence. This factor was not responded to by almost all of the participants, although there was an indication by one participant that the rigid nature of the performance contract affects job satisfaction. Paillé in (Na-Nan et al., 2020) found job satisfaction to be a mediator in the form of employees’ willingness and as such satisfaction had effects on organisational citizenship behaviour. A study conducted in South Africa in the educational sector confirmed the significance of job satisfaction in the workplace. Mabaso (2017) found among academic staff that compensation, performance management, recognition, talent management and career opportunities have a positive and major influence on job satisfaction.

The fifth objective of the study was to focus on providing recommendations on changes that can be made for the improvement of the performance appraisal instrument. It was recommended by many participants that the moderation process needs to be reviewed. The review should incorporate the clearly defined role of the supervisor during the moderation process and amend the moderation column in the performance appraisal instrument. This was collaborated by Farndale (2017) where supervisor support was found to play a mediating role in the perceived performance appraisal fairness and engagement. Again, Ryu and Hong (2019) stated that constructive performance feedback and trust in supervisors were positively and significantly associated with perceived fairness of performance appraisal. On the other hand, Ayomikun (2017, p. 22) stated “employees who receive support after an appraisal process indicates that such support contributes significantly towards creation and generation of ideas”.

The second recommendation was to consider the enhancement of the performance appraisal system. This includes developing a user-friendly appraisal instrument and changes in its management. This notion is indicated in the article written by Cintrón and Flaniken (2011) who stressed the importance of developing user-friendly and easy-to-understand appraisal procedures and forms. The statement was augmented by Groot et al. (2019) who stated that unambiguous language is an important prerequisite for exchanging electronic information without the risk of misinterpretation. Changing the management of the appraisal instrument incorporated the consideration of the frequency of the administration of the instrument and the reconsideration of the role of the supervisor and/or moderation committee in the entire process. Lawlet et al. (2013) stated that having different systems for every different job provides appraisers with an opportunity to design a system using their direct reports. The relevancy of the appraisal instrument should be worked on to ultimately be improved. The ground-breaking study of Jubaedah et al. (2019) on electronic rubric where the following steps were taken by lecturers before the assessment process took place; the lecturer or instructor provided information on what standards must be achieved, how the performance appraisal process will unfold, and provision of feedback, and provided a platform for organisations to enhance and customise the initiative to suit their conditions. This is a typical example of how effective the performance appraisal can be when expected outcomes are clarified at the very beginning and the subordinates are made aware of how their performance will be assessed, and will be provided with timely feedback as per the standard agreed upon. It is also imperative to ensure that the instrument used is conducive to the

environment and is appropriate in terms of providing the expected appraisal results. Participants indicated the need for the organisation to develop an online performance appraisal instrument. According to Buck et al. (2018) performance management is not a mere single-time discussion, but should be an ongoing data-driven process. Increasingly more companies are using software that uses analytics to improve the relationship between managers and employees. A good example of cutting-edge effective performance management is that of Hum; artificial intelligence is used to leverage people analytics. Buck et al. (2018, p. 262) states that AI is used to “nudge people towards being their best selves, every day, measure what matters most to employees, then nudges leaders, managers, and employees towards positive behavioural change. The result (is) higher productivity, better retention, and greater happiness.”

The principle of legitimacy of the appraisal instrument was covered in the study by Grubb (2007) which indicated a need for continuous improvement of the system and engagement of employees in a collaborative network. In turn, Lawler et al. (2013) indicated that organisations need to establish a performance management system that is integrated with other human resource management systems. To achieve this aim, organisations need to ensure that employee participation is achieved; when it is achieved through decision-making on HRM practices and policies, it enhances employee job satisfaction and performance (Babagana et al., 2019). Salleh et al. (2013) furthermore put forward a suggestion that managers should have control over the employee’s perception of the organisational justice. Employee participation in other studies has been found to be necessary in the development of the performance management process and steps to be taken to ensure that they perceive the performance management process to be fair (Gorman et al., 2017).

The third recommendation covered the training and development of supervisors and employees alike. The results of the study indicated that participants as well as subordinates will increase the effectiveness of the performance appraisal instrument. For a system design to be effective, the supervisor and the employees’ understanding of the appraisal process, and their respective roles in it, should be achieved (Cintrón & Flaniken, 2011). The sentiment is supported by Kondrasuk (2011) by recommending a better training of all involved in performance appraisal, which includes managers and any others involved as well as the human resources specialist. Furthermore, Le (2019) stated that for effective performance appraisal, organisations need to ensure that supervisors possess sufficient skills and knowledge to prepare for it and for good performance management everyone involved needs to possess high skill levels. The training of the role-players will improve the system in its inception in addressing what Daonis (2012) referred to as revisiting the criteria set and providing supervisors with the understanding of scoring so that they apply it accordingly.

The sixth objective of the study concerns the future research and practice recommendations that can be made. This last objective focused on the limitations of the study, recommendations for future studies and practical implications. Below a brief discussion will follow on the three aspects of this objective.

9. Limitations

The researcher envisaged to reach out to 20 participants who were supposed to be spread out to 4 districts that are part of the organisation featuring in the study. The representation of one district was not at an acceptable level due to infrastructural challenge in that specific district. The number reached was less than the envisaged one. A huge challenge was the lack of willingness of the employees in general to participate in the research.

10. Managerial Implications

Key element that featured stronger than others was the training of supervisors/managers on the performance management system and in the appraisal instrument itself. It appeared that more challenges on the system emanated from the inconsistent implementation of the instrument by supervisors/managers, making it difficult for employees to understand the entire process.

11. Conclusion

The study found that employees have positive and negative perceptions of the instrument. Some perceived it to be fair and reliable, whereas others found it unfair, not able to assess that which it is meant to assess, subjective, and lacking inclusiveness. Generally, the instrument was perceived as being time-consuming, cumbersome and not objective. The study further showed that by focusing on improving work engagement through improving job-resources, the well-being of employees can be increased; thus, performance would improve. Based on the finding, recommendations were made to offer training to all stakeholders, develop an online instrument based on sound scientific principles, and consult all relevant stakeholders in the process of developing the new instrument.

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Investigating the Relationship Between Employee Value Proposition and Work Identity

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Keywords

Employee value proposition; work identity; parastatal organisation; work; benefits

Abstract

An organisation's employee value proposition (EVP) is known to keep employees committed and engaged in their work and establishes how employees experience their work. This study sought to investigate the relationship between the dimensions of EVP and work identity. A cross-sectional quantitative research approach was selected. Data were collected from a parastatal organisation through an online survey. A non-probability sampling technique was selected, and through a convenience sample, 236 responses were elicited. Data were analysed using SPSS. A Pearson correlation analysis and multiple regressions analysis were performed to achieve the research objectives. The study established a relationship between the work sub-dimension of the EVP and work identity. The study contributes to the body of knowledge of work identity and provides linkage to the EVP, which has not been done in previous studies on work identity. It provides guidance to HR practitioners on what is required in terms of the EVP to ensure employees identify with the work.

1. Introduction

Employees play a significant role in improving organisations' operational performance (Whalley, 2021). Organisations have realised that human capital is an essential resource that is pivotal to achieving organisational goals (Koekemoer, 2014). Organisations continuously strive to ensure that employees remain committed through a compelling employee value proposition (EVP) (Lee, 2018; Phungula et al., 2022). It is known that EVP also tends to influence the caliber of potential employees attracted to the organisation (Ferreira, 2016). Whilst studies have established the need for an EVP in terms of talent management (Paadi et al., 2019) and effective talent development (Saurombe & Barkhuizen, 2020), a need exists to understand how EVP influences employees' identification with their work. In other words, how it influences their work identity. Work identity is a "...a multi-identity, multi-faceted and multi-layered construction of the self (in which the self-concept fulfils a core, integrative function), that shapes the roles individuals are involved in, within their employment context" (Lloyd, Roodt, & Odendaal, 2011, p. 31).

Work identity is a growing field of research within the South African context (see de Braine et al., 2015). More so recently, Barkhuizen and de Braine (2021) in their conceptual paper provided a linkage showing that talent management helps to strengthen work identities of employees. There is a relationship between talent management and employee value proposition (Pawar & Charak, 2015). We argue then that through talent management practices, employees experience the EVP of the organization. As such, the current study sets out to empirically measure whether a relationship exists between the EVP offerings of a parastatal organisation and work identity. Furthermore, the study establishes which EVP dimensions best predict work identity. To date there has been no research that investigated the relationship that EVP may have with work identity.

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1.1. Literature Review

This section outlines the key variables being researched: employee value proposition and work identity. A concise literature review is presented.

1.2. Employee Value Proposition

The Employee Value Proposition refers to the values and benefits employees can derive from their work experience in an organisation and aims to ensure that employees remain engaged and satisfied with their jobs (Mahajan, 2019; Heger, 2007). Reddy (2017) indicates that a well-packaged EVP offering can make employees feel motivated and satisfied with their employers (Reddy, 2017) and Phungula et al., (2022) noted an increase in normative commitment as a result of EVP. The EVP encompasses employee perceptions of various dimensions within the organisation, including factors such as culture, development, work environment and remuneration (Pattanik & Misra, 2016). Other research has positioned the EVP to include conditions that make work appealing in organisations, based on offerings and experiences provided by the employer and what the employees bring to the organisation (Munsamy & Venter, 2009). Veldsman and Pauw (2018) articulate that the EVP should be a robust approach to driving employee retention. Across studies, it has been established that an EVP is characterised as a reciprocal relationship between the employee and employer which motivates them to stay or join an organisation.

Veldsman and Pauw (2018) hold the view that EVP is a holistic concept based on the premise of an employee value exchange (between the organisation and individual), characterised by giving and receiving. Based on their model of the EVP landscape, they illustrate that components of an EVP set out to include the environment, affiliation, work content, benefits and remuneration. It is known that the EVP contains attributes that employees consider valuable and could include work policies and practices, rewards and benefits and in return, employees provide their service (Aloo & Moronge, 2014). The EVP attributes have a direct impact on the experiences of employees within the organisation. When the organisation takes care of the employees' internal and external needs, the loyalty of employees increases, and they feel valued, resulting in high employee morale and increased productivity (Reddy, 2017). This shows the gap for HR to reposition EVP to align it with EVP expectations of employees. According to Venkataramani (2021), EVPs must focus on employees as people. The EVP package must be people-centred and focus on employees' feelings. This helps employees feel cared for, understood, and valued, contributing to a positive work identity.

1.3. Work Identity

Individual work identity refers to "a work-based self-concept which includes, of a combination of organisational, occupational and other identities that affect the roles people adopt and the corresponding ways they behave when performing their work (Walsh & Gordon, 2007, p. 2). De Braine (2012) asserts that work identity influences how individuals behave in their work, and it is developed due to the interplay between an individual's personal resources and work processes. Walsh and Gordon (2007) assert that individuals are influenced by their social groups at work which helps to form work identity. Walsh and Gordon (2007) state that work identity impacts how employees perform in an organisation, which affects how employees identify with their roles and the organisation. Employees can identify with the organisation and their profession; for example, a doctor can identify with his or her profession due to the impact it has on lives but at the same identify with the hospital that they work. (Cohen & Baruch, 2007).

Understanding the dimensions of work identity and how these dimensions impact EVP important. Value congruence, person-organisation fit and work centrality have been found to dimensions of work identity (Bester, 2012). *Value Congruence* refers to the alignment or similarities of personal and organisational values (Bester, 2012). Therefore organisations need to assess the alignment of values for candidates with the organisational values during the recruitment phase so to ensure that there is a fit and the value congruence is high (McRobert et al., 2018).

Person-organisation fit refers to the compatibility (for example, perception, values, beliefs etc) of the employee with the organisation (Bester, 2012). It is important to note that organisations regard the PO fit as an important element during recruitment (Morley, 2007). Most applicants search for jobs and research the organisation's values and culture to discover if there is a person organisation fit (Morley, 2007). Understanding the need for the PO fit and being proactive in including this factor in the recruitment process positively affects employee experience (Uen, Ahlstrom, Chen & Liu, 2015).

Work centrality directly impacts employee experience (Gavriloaiei, 2016). Work centrality impacts the behaviour of the employee at work and outside work, this has an impact on the brand of the organisation as employees are brand ambassadors of the organisation (Gavriloaiei, 2016). Person-organisation fit and work centrality influence employees' loyalty to the organisation.

1.4. EVP and Work Identity

Work identity is "who am I at work"(Bothma & Roodt, 2012, p.12), and the EVP experience directly impacts how employees identify themselves with work. Adams and Crafford (2012) assert that people are constantly in the process of defining themselves by drawing on and engaging with various environments and contexts, such as family, work, friends, religious groups, and leisure activities.

The EVP experience of employees shapes the way employees relate to the organisation which in turn influences work identity. Organisational support such as supervisor support and participation in decision making (which are part of the EVP) has been shown to be a job resource that predicts work identity (De Braine 2012). In a similar way, opportunities for growth and advancement (which also are part of organisations' EVPs) predict work identity (De Braine, 2012). This may result in deeper connections to an organization. Employees who experience a deeper connection with an organisation usually experience more compatibility with an organisation (Uen et al., 2015). Organisations can include organisational values "who we are" as part of the attraction and selection so that applicants get to understand the values of the organisation before deciding to join the organisation, this could be a considerable cost and time-saving initiative for the organisation as a high-value congruence positively affects employee retention (Bao et al., 2019). The EVP attributes impact work identity; for example, the compensation offered by the organisation can influence how valued the employee feels, which also affects work identity (Daniel, 2017). Affiliation is an attribute of EVP which includes ethics as one of its elements. The ethical behavior of an organisation influences work identity, and employees tend to align to the ethical conduct of an organisation and its leadership. Employees want to be part of an organisation that mirrors their ethical values (Lacy & Hayward, 2011), which helps to strengthen the value congruence dimension of work identity. When employees are satisfied by the EVP attributes of an organisation, they are more likely to have a positive work identity (Heger, 2007). Employees will relate positively or negatively with the organisation depending on the EVP package offered (Paadi et al., 2019).

2. Method

A quantitative research approach was selected to address the research objectives: to establish the relationship between dimensions of the EVP and work identity and which dimensions of the EVP best predict work identity. The study was cross-sectional and involved diverse samples such as different age groups, races, and gender, which yielded various views (Kumar & Roy, 2019).

3. Respondents and sampling

Data was collected from a parastatal organisation, and 236 responses were received. All employees with access to emails were requested to participate in this study. The researcher applied for access to the parastatal organisation. Access was approved, and human resources acted as a gatekeeper. Online questionnaires were distributed via email to a business unit. Reminders were sent to participants as the response rate was low, and follow-ups were made; however, there was limited access to employees as South Africa was under lockdown due to the COVID 19 pandemic, and most employees were working from home. A non-probability sampling technique was used; therefore, all willing respondents had an equal opportunity to participate in the study. Specifically, convenience sampling was used. Convenience sampling was selected because provided ease of access to participants and also sped up the data collection process. The sample comprised of 44.2% men (n = 111), 49.8%

females (n = 125) and 6% other meaning it was unspecified (n = 15). Most participants belonged to the Black race group (n = 133; 64.9%), followed by the Coloured race group (n = 37; 14.7%), Other “unspecified race group” (n = 26; 10.4%), Indian race group (n = 19; 7.6%), Chinese race group (n = 4; 1.6%) and White race group (n = 2; 0.8%). Most participants were employed in the junior category (n= 122; 48.7%) followed by senior managerial category (n = 77; 30.6%) and trainees (n =52; 20.7%). The mean was 9.01, median 7.00 and standard deviation 7.85 for tenure of the participants. The mean was 36.36, median 34.00 and standard deviation 10.39 for the age of the participants.

3.1 Measuring instruments

The online survey consisted of two sections, biographical information was requested in the first section and the second section, and participants were requested to complete the following scales, measuring EVP (The Value Attributes Scale developed by Ferreira, 2016), and Work identity (WI-28 developed by Roodt et al., 2009)

Regarding the use of *Biographical information*, a biographical questionnaire was used in this study to obtain sample-specific demographical related information about the participants such as age, gender, marital status, ethnicity, the highest level of education passed and job category.

The Value Attributes scale was used to measure the employee value proposition and is a twenty-item measure of dimensions of remuneration and benefits, organisational culture, career development, work content, and work-life balance. The items are scored on a 5-point frequency scale ranging from 1 (not at all important) to 5 (very important) and include statements such as. “To what extent are you provided with challenging targets?”; and “Are you satisfied with your employer’s provision of incentive bonuses/variable pay?”. An acceptable Cronbach’s alpha coefficients for the overall scale was reported by Ferreira (2006) as .71.

The *Work Identity scale* (WI-28) is a twenty-eight-item measure of dimensions Occupational identity, Professional identity, Career identity, Job involvement, Person–organisation fit, Work centrality, and Organisational identification. The items are scored on a 7-point frequency scale ranging from 1 to 7 and include statements such as “How much meaning does work add to your life?”; “How much do you give to your job?”; “How rewarding is work itself as an activity?”; “To what extent is your occupation the most important activity in your life?”; and “How embarrassed do you feel when the media criticises the organisation that you work for?” De Braine and Roodt (2011) reported acceptable Cronbach’s alpha coefficients for the overall scale as .95

3.2. Data analysis

Statistical analysis of the data was performed by STATCON (Statistical Consultation Services at University of Johannesburg) utilising SPSS software, version 27, through inferential statistics. Principal component analysis (PCA) was used to reduce the dimensions of datasets, making it easy to interpret the data collected (Pallant, 2011). Principal Axis Factoring (PAF) was used to simplify datasets by creating a valid factor solution (Tabachnick & Fidell, 2007). Reliability analysis was performed, and .70 was considered an acceptable internal consistency value (Pallant, 2011).

The Pearson correlation analysis was performed to establish the relationship between EVP dimensions and work identity. A Pearson’s product–moment correlation measures the strength that exists between two variables, and suggests that (Pallant, 2011). Guidelines by Cohen (1988) were used to establish the effect namely small = $r = .10$ to $.29$, medium = $r = .30$ to $.49$ and large = $r = .50$ to 1.0 .

A Regression analysis was performed on which dimension in the EVP is the best predictor of work identity. The following criteria was noted, a tolerance value of less than .10 indicates the existence of multicollinearity. If it is below 10, beta values can be interpreted with confidence (Pallant, 2011). The variation inflation factor (VIF) above .10 indicates the existence of multicollinearity, and if it is below .10, beta values can be interpreted with confidence (Pallant, 2011). According to Pallant (2011), multicollinearity is possible if the R squared value is less than .10. Pallant (2011) highlights that if the beta value is higher, the variable makes a significant prediction of the dependent variable. The sig

value of fewer than 0.05 means that the variable makes a significant prediction of the dependent variable (Pallant, 2011).

3.3. Ethical considerations

The ethics committee reviewed the study in the Department of Industrial Psychology and People Management at the University of Johannesburg. Ethical clearance was granted [IPPM-2020-407(M)]. The researcher applied for access to the organisation. Human resources acted as a gatekeeper and assisted in the distribution of the online survey. Respondents provided their informed consent. All responses were anonymous and remained confidential. Respondents were made aware of their rights in the study, the nature and purpose of the study and that participation was voluntary.

4. Results

A Principal Axis Factoring with Oblimin with Kaiser Normalisation rotation method was performed as part of the factor analysis for the EVP. The first iteration, items 10 and 15 yielded communalities below .30 and were excluded. Subsequently, in the second iteration, the correlation matrix revealed the presence of communalities above .30, which was considered suitable. The Keyser-Meyer-Olkin (KMO) value of .89 exceeded the recommended value of .60 (Pallant, 2011). Subsequently, Bartlett's Test of Sphericity reached statistical significance. Therefore, supporting the factorability of the correlation mix. There were no clear loadings upon this iteration, so a forced three-factor solution was presented. The following results were achieved: an Eigenvalue of 1.15 for three factors, which explained a cumulative variance of 59.19%. Pallant (2011) states that factor loading above .40 is acceptable. Three factors with all the items loading above .40 were extracted. The Cronbach's alphas for work were .91, and .86 for rewards, and .81 for an opportunity. Therefore, a three-factor solution was accepted: work accounting for 46.92% variance, rewards accounting for 8.08% variance, and opportunity accounting for 4.18% variance. All dimensions in the scale achieved acceptable alphas above .70.

The work identity scale was subjected to Principal Axis Factoring. The correlation matrix revealed the presence of .30 and above communalities for all items. The Keyser-Meyer-Olkin (KMO) was .951 exceeding the recommended value of .60 as suggested by Pallant (2011). Bartlett's Test of Sphericity reached statistical significance, supporting the factorability of the correlation mix. The Eigenvalue of 13.38 was revealed, explaining the variance of 56.35%. The loading for the work identity component was above .40. A one-factor solution was accepted. The work identity measure achieved a Cronbach alpha coefficient of .97.

Pearson Correlation Analysis

A correlation coefficient was used to assess the relationship between employee value proposition and work identity. Table 1 indicates that there is a relationship between EVP, and work identity. In terms of the correlations between the variables in the table 1 below, the following was interpreted: Work is positively correlated to work identity ($r(.483) = 255; p < 0.001$), with medium size effect. Rewards are positively correlated to work identity ($r(.345) = 255; p < 0.001$) with medium size effect. Opportunity is positively correlated to work identity ($r(.431) = 255; p < 0.001$) with medium size effect.

Table 1 Correlation analysis for EVP and Work identity

	EVPF1 Work	EVPF2 Rewards	EVPF3 Opportunity	WIALL Work Identity	alphas
EVPF1 Work	1	.716**	.763**	.483**	.91
EVPF2 Rewards		1	.658**	.345**	.86
EVPF3 Opportunity			1	.431**	.81
WIALL				1	.97

Regression Analysis

A standard multiple regression was used to evaluate the measure in which employee value proposition predicts work identity. A regression equation was found $F(3,244) = 24.09, p < 0.001$. Table 2 indicates the variance of 22.9%. Multicollinearity demonstrated the tolerance value that ranged from 0.342 to 0.400. According to Pallant (2011), common cut-off tolerance values of less than 0.10 may indicate the presence of multicollinearity. The variance inflation factor (VIF) ranged between 2.499 to 2.926. These values were lower than the cut-off value of above 10, as suggested by (Pallant, 2011). Therefore, multicollinearity was not of particular concern. Therefore, the beta (β) values can be interpreted with confidence.

Table 2 indicates that work contributed a large variance to work identity, recording the beta value of .41. Opportunity and rewards did not predict work identity as there were no significant result

Table 2 Regression analysis for EVP and WI

	Unstandardised Coefficients		Standardised Coefficients	T	Sig.	R	R Square	Adjusted R Square	Collinearity Statistics	
	B	Std. Error	Beta						Tolerance	VIF
(Constant)	2.519	0.310		8.133	0.000	.478	0.229	0.219		
EVPF1 Work	0.444	0.104	0.412	4.280	0.000				0.342	2.926
EVPF2 Rewards	-0.085	0.099	-0.071	-0.857	0.392				0.467	2.144
EVPF3 Opportunity	0.183	0.115	0.141	1.590	0.113				0.400	2.499

5. Discussion

The EVP sub-dimension *Work* predicted work identity. This dimension dealt with aspects of challenging and exciting work; manageable workload; quality of performance feedback; teambuilding, and how valued they feel by their employers. All these aspects of work can be regarded as job resources. Job resources are "...those physical, psychological, social or organisational aspects of a job that either/or (1) reduce job demands and the associated physiological and psychological costs; (2) are functional in achieving work goals; and (3) stimulate personal growth, learning and development" (Demerouti, Bakker, Nachreiner and Schaufeli, 2001, p, 501). Job resources predict work identity (Bester, 2012; De Braine & Roodt, 2011; Van Rensburg, 2020). This study's findings that work aspects predicts work identity has been found in previous studies results: Organisational support and team climate were shown to predict work identity (De Braine, 2012; Van Rensburg, 2020). Organisations provide organisational support by providing manageable workload and quality performance feedback. Through team building initiatives, organisations enable healthier team climate environments which serve to bolster better interaction between employees. The work environment impacts the formation of work identity (Mortimer, Lam & Lee, 2015 as cited in Barkhuizen & De Braine, 2021).

The EVP sub-dimensions rewards (includes competitive pay package, recognition and employee wellness programmes) and opportunity (includes career development and opportunities to grow) did not predict work identity. These were unexpected results. Previous studies have shown a direct relationship between rewards and work identity in (Bester, 2012) and that opportunities to be developed, learn and advance positively influences work identity (Adams & Crafford, 2012; Collins, 2009; De Braine, 2012). In this study, this was not found. This should be further investigated in future studies. There has been a call to increase research on the relationship between recognition and identity at work (Tweedie, Wild, Rhodes & Martinov, 2019).

5.1. Limitations and Recommendations for future research

Research is not void of limitations. Data was collected during the height of the pandemic, and employees were working from home. This resulted in low response rates. The study is conducted in a parastatal organisation, so the results must be interpreted cautiously and cannot be generalised to other industries. As such, it is recommended that research on EVP and work identity is conducted in various sectors. More studies can be done exploring the relationship between the employee lifecycle and work identity, exploring the role of EVP in this relationship, as well as gaining a qualitative narrative of the EVP is recommended.

5.2. Implications for management and HR

EVP offerings play an essential role in the motivation of employees within the organisation (Wahba & Elmanadily, 2015). Human resources practitioners should emphasise the importance of EVP in the employee lifecycle to strengthen the work identities of employees, especially in the areas of performance feedback, challenging goals, manageable workload and work-life balance. It is therefore important that managers and HR improve and enhance these areas mentioned within their talent management practices, which may assist towards enhancing the work identity of employees (Barkhuizen & De Braine, 2021). In so doing, employees can have a greater strategic connection with their organisations (De Braine & Dhanpat, 2019), thus leading to greater possibilities of improved work performance.

6. Conclusion

The study aimed at investigating the relationship between the EVP offerings of a parastatal organisation and work identity. Furthermore, the study aimed at establishing which EVP dimensions best predict work identity. It was found that only the work sub-dimension of EVP predicted work identity. This study found that EVP is related to work identity. This relationship has never been investigated in a study before.

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The Link Between Perceived Role Conflict and Employee Attitudes In a Public Sector Context: A Moderated Mediation Model Of Trust In Management and Core Self-Evaluation

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Keywords

Role conflict, trust in management, employee work attitudes, core self-evaluation, public sector

Abstract

In today's highly competitive work environment, organisations have a greater need for competitive, agile, and assertive individuals to acclimatise to the fast-paced change in organisations. In particular, the public sector organisations' customer service expectations from the general public require public sector personnel to display desired attitudes towards their jobs. These attitudes are generally influenced by the perception employees conceive about the prevalence of organisational factors within their work environment. The perceived organisational factors, such as the prevalence of role conflict, influence the kind of attitudes employees will develop and exhibit towards their jobs, which has a snowball effect on the quality of services rendered to the stakeholders. Utilising a quantitative approach, a cross-sectional design and a convenience sample (n=290) from Lesotho governmental ministries, this study aimed to determine the mediating role of managerial trust and the moderating role of core self-evaluation in the relationship between role conflict and employee attitudes. The study utilised PROCESS macro (Hayes, 2017) to test for direct and indirect effects with the Jamovi open-access software (Version 2.2.5.0). The findings suggest that all scales used in the study are reliable. The results denote that role conflict demonstrated noticeable relations with trust in leadership, CSE and employee work attitudes. Amazingly, role conflict was not associated, at least statistically, with any of the variables used in this study. Trust in the leader reported a positive association with organisational commitment and job satisfaction with both relationships. Additionally, trust in the leader has an inverse relationship with turnover intention. Affective commitment has a positive relationship with job satisfaction and a negative relationship with intentions to quit. In addition, job satisfaction also has an inverse negative relationship with intentions to quit. Furthermore, the study focused on *the conditions under which these relationships hold true*. It seems like that the level of trust matters for the relationship between role conflict and job satisfaction, performance and intentions to quit. Conspicuous, the results suggest that the effects of role conflict on *job satisfaction, performance and intentions to quit* were only significant for participants with *high levels of trust*. Therefore, low and average levels of trust matter less for the relationship between role conflict and job satisfaction, performance and intentions to quit. The results also imply that the effects of role conflict on *performance* were only significant for participants with high levels of CSE. Therefore, low and average levels of CSE matter less for the relationship between role conflict and performance. The implications and future research are also discussed.

1. Introduction

Employees in the public sector environment work in challenging, demanding and complex situations. They are faced with demands to exhibit professionalism, effectiveness and efficiency in rendering services. On the other hand, they have to satisfy the growing expectations from the general public

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they serve and adhere to regulatory systems from management (Steen & Schott, 2019). Most public service workers' duties involve interaction with citizens and require the astute rendering of service quality (Lipsky, 2010). The mass processing of clients and serving various stakeholders has implications on how these employees feel about their jobs and the behaviours they exhibit while executing their duties. The observation of role conflict challenges among the boundary-spanner roles such as public sector employees (public service employees) is not a new phenomenon of investigation among researchers. However, there is a dearth of research investigating the boundary conditions and underlying mechanisms that explain the relationship between employees' perceived role conflict and employee attitudinal outcomes. This study addresses these gaps by utilising the Job Demands-Resource model and Conservation of resource theory as the theoretical frameworks underpinning the envisaged relationships, particularly in the context of a developing country in Africa, Lesotho. Secondly, apart from determining the direct effects, the study also proposes trust in management as a possible mediator and core self-evaluation as a moderator in the relationship between role conflict and employee work attitudes.

2. Literature Review

The next segment considers the overview of both the theoretical and empirical literature from previous studies. The discussion on research methods, analysis and findings section follows, and the study concludes with the considerations of the practical and managerial implications, limitations, and prospects for future research.

2.1. Theoretical overview

Job Demands-Resource Theory and The Conservation of Resource

The job demands-resource model has been used to understand how multifarious aspects of job aspects might relate to individual and organisational outcomes. In this study, the JD-R theory is utilised as a robust theoretical tool to explain the link between the independent variable (role conflict) and the dependent variable (employee work attitudes). *Job resources* relate to organisational aspects of the job that are instrumental to achieving work goals, stimulating personal growth and reducing sustained pressure from the job demands leading to a motivational process. *Job demands* refer to various organisational aspects of the job that require sustained effort associated with physical and psychological costs leading to the health-impairment process (Bakker & Demerouti, 2014). In line with the job demands-resource theory's health-impairment process, role conflict is considered from the objective perspective as a perceived actual and verifiable condition in the environment of the focal person (Pandey & Kumar, 1997). Therefore, role conflict depicts a job demand in this study that can cause strain on employee resources and influence their attitudes toward the job as well as their ability to execute duties.

In addition to establishing and understanding the mechanisms that link the independent variable to the outcome variable, this study further seeks to determine the boundary conditions that influence the relationship between role conflict and employee work attitudes. Boundary conditions identify the situations that specify when relations between variables change due to the values of the other variable (Busse, Kach, & Wagner, 2017). The role of boundary conditions is to signify the presence and strength of such conditions (Gonzalez-Mulé & Aguinis, 2018). Drawing from the conservation of resource theory, this study identifies core self-evaluation as a personal resource instrumental in explaining the presence and strength of the relationship between role conflict and employee work attitudes. The COR theory offers a theoretical underpinning for understanding how employees can use coping resources to prevent resource loss, maintain existing resources, and gain resources necessary for positive work outcomes (Hobfoll & Schumm, 2009). The theory outlines the four basic categories of resources: objects, energies, conditions, and personal characteristics. Accordingly, individuals seek to acquire, preserve and maintain their resources (Hobfoll & Wells, 1998). The COR theory asserts that individuals with greater resources are less vulnerable to resource loss than those who lack resources. Therefore, it is expected that would function as a moderator and employees with higher levels of core self-evaluation will be less vulnerable to the negative effects of role conflict.

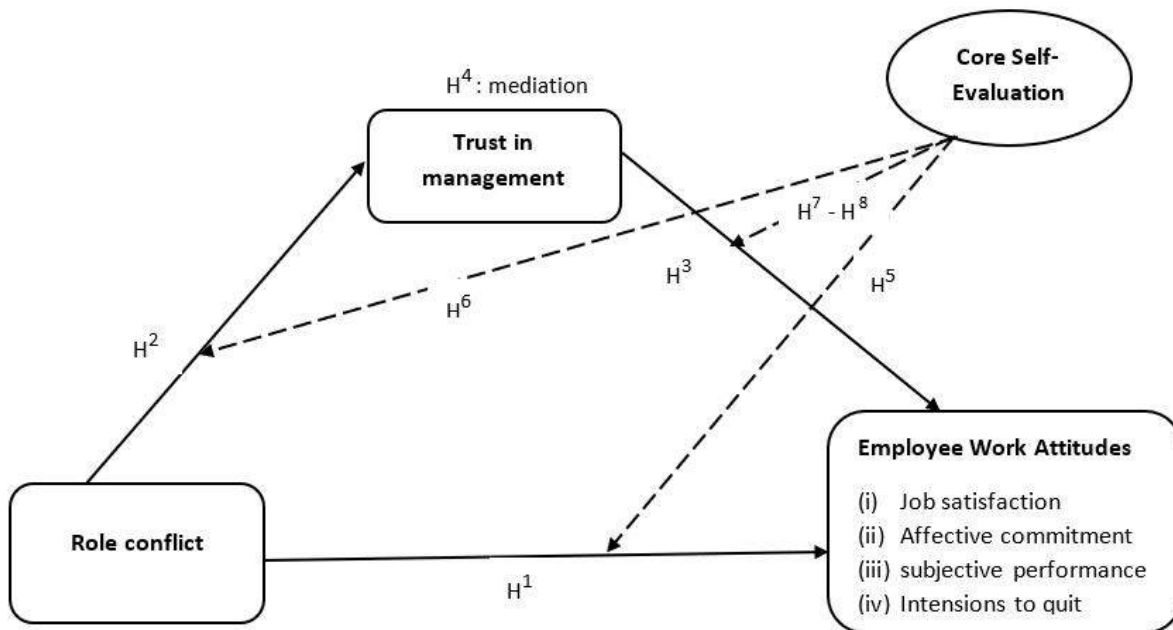


Figure 1. Proposed study model

2.2. Perceived role conflict and employee work attitudes

Role conflict is a salient variable of investigation among public sector employees and boundary-spanning roles in general. Role conflict refers to the perceived discrepancies or incompatible demands relating to work requirements imposed on or experienced by employees and the behaviours expected in executing the role (Rizzo, House, & Lirtzman, 1970; Han, Wang, & Dong, 2014). Work roles' incompatibility and incongruence can arise from different conditions: person-role conflict, inter-role conflict, intra-sender conflict and inter-sender conflict (Pandey & Kumar, 1997). Of the four dimensions of role conflict, this study focuses on inter-role and intra-role conflict. *Intra-role conflict* is associated with the expectation of an individual to execute different roles incongruent with each other. *Inter-role conflict* relates to incompatible expectations anticipated from a single role by different senders or stakeholders (Ebberts, & Wijnberg, 2017). These expectations are common in the public sector, where employees simultaneously serve various stakeholders.

Previous research has explored the effects of role conflict on various organisational outcomes, including employee work attitudes. Attitudes refer to individuals' summary evaluation of objects such as oneself, other people, the environment or issues (Petty, Wegener, & Fabrigar, 1997; Albarracín & Shavitt, 2018). Attitudes can be specific, or they can be generalised across objects, with people having attitudes that are either generally positive or generally negative, whereby some people tend to like things, whereas others tend to dislike things (Hepler, & Albarracín, 2013). In the workplace, attitudes are critical predictors of employees' actual behaviours, which impact organisational outcomes. Hence it is vital to establish how different organisational factors influence attitudinal work outcomes.

The current study considers four critical work attitudes to explore the effects of role conflict on public sector employees, namely job satisfaction, affective commitment, subjective performance, and turnover intentions. *Job satisfaction* denotes the employee's positive emotional response toward achieving job value or equity (Liu, Aunguroch, & Yunibhand, 2016). It is believed that employees with heightened levels of job satisfaction at work will be highly motivated, leading to desired organisational outcomes. Therefore, positive aspects of work-life contribute to job satisfaction, while an uncondusive work environment results in job dissatisfaction (Dhamija, Gupta, & Bag, 2019).

Affective commitment refers to the individual's component of generic organisational commitment manifested by emotional attachment to the organisation (Jaros, 2012; Mercurio, 2015). Affective commitment further relates to the extent to which an individual attachment to the organisation

involves emotional feelings such as loyalty, a sense of belongingness and admiration for the respective organisation (Meyer & Allen 1991). Affective commitment is also advocated as the core essence of organisational commitment and the primary influencer of other components of organisational commitment. This study concentrates on the affective component of the broad multidimensional concept (Mercurio, 2015).

Job performance is perceived as the outcome of the fit between a person's behaviours and the demands of the job or task (Weiss, 2002; Griffin, Neal, & Parker, 2007.) *In-role job performance* refers to employee activities related to formal tasks, duties and responsibilities as depicted by the formal job description. These behaviours can be used as an indicator of employees' performance to evaluate whether the employee is capable of fulfilling required job duties in the organisation (Williams & Anderson, 1991). Employees with higher levels of in-role performance are found to be contributing directly to organisational success because their work activities are aligned with company goals (Van Scotter, Motowidlo, & Cross, 2000).

Organisational turnover relates to the number of employees leaving an organisation within a specified period (Park & Shaw, 2013). *Turnover intention* refers to a multi-staged process of psychological detachment and employees' voluntary inclination to depart from their current position (Takase, 2010). It involves a deliberate, conscious and wilful desire and intention to stop rendering employment services to the current organisation. Various internal and external organisational factors can trigger turnover intentions. In most cases, employees' voluntary intentions to leave their current job reflects their attitude toward the organisation (Ngo-Henha, 2018). Strong feelings of turnover intentions can trigger negative behaviours in the workplace, such as disengagement, low productivity and counter-productive behaviours, including absenteeism (Cho & Lewis, 2012).

The empirical findings on the relationship between role conflict and employee attitudes show that job demands such as role conflict influence different aspects of employees' work outcomes. For instance, relating to association with job satisfaction, Kadir, Kamariah, & Saleh (2017) reported that role conflict negatively influenced job satisfaction using the sample of nurses. In a study investigating role conflict among enterprise employees, an inverse relationship was reported between role conflict and job satisfaction (Ren, Chen, Zhu, & Chen, 2020). These findings signify that increased role conflict can lower individual employees' levels of job satisfaction. Finding from López-Cabarcos, López-Carballeira, & Ferro-Soto (2021) show that role conflict was negatively associated with affective commitment and positively related to turnover intentions. Investigating the link between role conflict and the three dimensions of organisational commitment and turnover intentions, Addae, Parboteeah, & Velinor (2008) found that role conflict was negatively associated with affective and normative commitment while positively associated with turnover intentions. The findings for the role conflict's relationship with in-role or task performance reported an inverse negative relationship (Akgunduz, 2015; Raub, Borzillo, Perretten, & Schmitt, 2021). Even though these findings seem consistent, the strength of the association between the investigated variables varied considerably, the contexts also varied, and limited studies seem to be conducted in the public sector, especially in the African sub-Saharan context, which justifies further investigation.

In this study, the relationship between role conflict and employee work attitudes (job satisfaction, affective commitment, job performance and turnover intentions) can be delineated by drawing on the job demands-resources (JD-R) framework. According to the health impairment or resource depletion process of the model, which suggests that high demands inflict strain on employees, the job demand of role conflict will deplete employee resources which results in lower levels of positive attitudes of job satisfaction, affective commitment, job performance and inversely heightened levels of negative attitudes of turnover intentions. Therefore, in relation to the direct effects, the study proposes that role conflict would be significantly and negatively related to employee work attitudes of job satisfaction, affective commitment and in-role performance while conversely positively associated with turnover intentions.

2.3. Trust in management as a mediator linking role conflict and employee attitudes

The interaction between employees and the organisational context requires meaningful relations that will enable the relationship to serve the goals of all stakeholders involved. One of the critical factors that determine the relationship between employer and employee is trust relations. Trust refers to the discretionary relationship between two parties, enabling people to cope with the uncertainty caused by others' free will (Ruohomaa & Kutvonen, 2005). At the individual level, trust denotes the psychological state signified by the willingness to be vulnerable to the other party's actions with the cognitive expectation that the other party will act on goodwill and yield positive expectations (Rousseau, Sitkin, Burt, & Camerer, 1998). Organisational procedures and policies shape these expectations and psychological state. Trust in management is defined as employees perceived confidence in the immediate supervisor and in top management's ability to secure and manage the organisation's future and to act in the best interest of the employees (Haridas, Ture, & Nayanpally, 2021). The trust state can develop or decline as relationships between parties mature or change as conditions that contribute toward or undermine it change (Audrey Korsgaard, Kautz, Bliese, Samson, & Kostyszyn, 2018).

Previous research confirms the mediating role of trust in management between role stressors and employee attitude. For example, trust in supervisors was reported as a mediator between relationship conflict and employee citizenship behaviour (Kacmar, Bachrach, Harris & Noble, 2012). Further, the mediating role of trust in management was established in the relationship between organisational career management and turnover intentions (Haridas, Ture, & Nayanpally, 2021). Trust in supervisors also mediated the relationship between conflict management styles and employee work attitudes of job satisfaction and turnover intentions (Chan, Huang, & Ng, 2008). In line with the conservation of resource theory, sustained high levels of role conflict are more likely to result in cycles of resource loss. Therefore, it is expected that high levels of role conflict would lead to decreased levels of employee trust in management. In addition, due to the spiral of resource loss, the lower levels of trust might also snowball into lower levels of job satisfaction, affective commitment, in-role performance and, on the other hand, higher levels of turnover intentions. Hence trust in management is proposed as a mediator linking role conflict and employee work attitudes.

2.4. Moderated-mediation model of core self-evaluation in the link between role conflict and employee attitudes

To successfully cope with the pressures and job demands, coping mechanisms are critical for employees. This study proposes core self-evaluation as a salient personal resource that can mitigate the effects of job demands on employees' attitudes and behaviours. The COR theory attests that those individuals who possess strong resource pools would cope better to offset strain and are more likely to benefit from utilising sources than individuals who lack resources (Hobfoll & Shirom, 2000). In this study, core self-evaluation is considered an important coping resource critical for helping employees to offset the severe effects of work demands.

Core self-evaluation depicts the individual's overall appraisal of basic areas in one's life, including how they view reality, themselves and or other people. Within the workplace, these appraisals influence how employees feel, perceive, and behave toward their jobs (McLarty & Whitman, 2016). The construct of core self-evaluation is defined as a broad higher-order latent variable that reflects individuals' self-appraisal, their sense of worthiness, capabilities and competencies, as well as control over situations, outcomes and functioning of the environment (Judge & Cable, 1997; Judge, Erez, Bono & Thoresen, 2003). Core self-evaluation is characterised by four sub-dimensions namely; self-esteem, locus of control, generalised self-efficacy, and emotional stability. *Self-esteem* signifies an individual's positive appraisal of self-worth, respect and self-acceptance. *Locus of control* denotes an individual's convictions in controlling situations and life's outcomes. *Generalised self-efficacy* refers to an individual's appraisals relating to competencies, capabilities, and self-motivation to execute tasks and successfully meet the demands of given situations. Emotional stability relates to an individual's capability to exercise calmness, discernment and good decision-making processes when faced with varying situations (Kacmar, Collins, Harris, & Judge, 2009; Judge & Kammeyer-Mueller,

2011). Therefore, higher levels of core self-evaluation are perceived to equip individuals to appraise themselves consistently positive, capable and in control across various situations.

Past research reported evidence on the moderating role of core self-evaluation associated with the link between job demands and a variety of employee work outcomes. For example, Chhabra (2020) reported that CSE was a buffering mechanism for the effects of job stress on job satisfaction and turnover intentions. CSE further acted as a buffer in the relationship between job demands of challenge stress and safety performance amongst mine employees in China (Yuan, Li, & Lin, 2014). The buffering role of CSE was established in the relationship between social stressors, job satisfaction, turnover intentions and altruism. Higher levels of CSE diminished the negative effects of stressors (Harris, Harvey, & Kacmar, 2009). When applied to COR theory as a personal resource, employees who possess higher levels of core self-evaluation would perceive role conflict not as a threat but as an opportunity to stretch their resources in order to accomplish the desired organisational goals. This study proposes that the line with the COR theory, the personal resource of core self-evaluation will moderate the negative effects of job demand (role conflict) on employee work attitudes through trust in management, in such a way that the negative effects of role conflict on employee work attitudes are weaker for employees with higher levels of core self-evaluation.

2.5. Study objectives

Even though prior research has established the relationships between various organisational situational factors and employee work attitudes, there are limited empirical studies linking perceived role conflict, trust in management, core self-evaluation and employee work attitudes in a single conceptual model. As a result, the main objective of this current study was to examine the moderated mediation model of trust in management and core self-evaluation in the relationship between role conflict and employee work attitudes of job satisfaction, affective commitment, in-role job performance and turnover intentions. The secondary objectives include the following:

- Examine the direct effects between role conflict and employee work attitudes (job satisfaction, affective commitment, in-role job performance and turnover intentions).
- Investigate the mediating role of trust in management in the relationship between role conflict and employee work attitudes.
- Establish the moderating role of core self-evaluation on the indirect relationship between role conflict and employee work attitudes through trust in management.

3. Methodology

The following section outlines the research strategy adopted for the study, data collection procedures and data analysis.

3.1. Research approach and sampling strategy

The study adopted a positivist paradigm. Using the cross-sectional time horizon, the study applied a correlational design. Correlational design refers to a type of research strategy designed to discover relationships between two or more variables (Bougie & Sekaran, 2019). The data was collected from a convenience sample of 290 public service employees from Lesotho governmental ministries. The non-probability strategy of convenience sampling is advantageous considering its reliance on the accessibility of selected organisations and the willingness of respondents to participate in the survey (Stockemer, Stockemer, & Glaeser, 2019). The descriptive statistics show that the sample consisted of 160 (55.2%) female and 130 (44.8%) male respondents. In total, 48.3% of the respondents were aged between 36 and 45 years, while 27.2% were between 25 and 35 years of age. About 20% of the respondents were older than 45 years, while the rest were younger than 25 years. The majority of the respondents (50.1%) had tenures ranging between 6 and 15 years, 30.4% of the respondents had a tenure of 1 to 5 years in public service, and 15.8% had a tenure of more than 16 years of employment with the public service departments. On the educational qualifications, 60.7% of the respondents hold a bachelor's degree certificate, which indicated that generally, public service employees are well qualified with regard to formal education. In relation to the employment rank or position, the majority

of the respondents, 43.5%, occupied middle management or supervisory positions, non-managerial positions were occupied by 39.7% of the respondents, senior management level respondents and consultants occupied 16.9% of the position levels.

3.2. Data collection

Prior to the commencement of data collection, the study obtained ethical clearance for the minimum risk category. After the permission to conduct the study was granted from the respective public service government ministries, the respondents received the survey package through the delegated gatekeeper for each ministry. The survey package included a cover letter explaining the purpose of the study, the questionnaire, and a return envelope. The respondents were informed about the issues of anonymity and confidentiality regarding the data collected, and they were also made aware that participation in the survey is voluntary. The permission to use data for research purposes was requested and obtained from the government ministries and the participants.

3.3. Research measuring instrument

Independent variable - Role conflict. Role conflict was measured by a six-item scale originally developed by (Rizzo *et al.*, 1970) and as used by (Bowling *et al.*, 2017) (e.g. “In my job, I often feel like different people are pulling me in different directions”). The items were rated on a 5-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Higher scores represented a greater degree of role conflict. The coefficient α score was .70.

Dependent variable - Job Satisfaction. Job satisfaction was evaluated using a five-item scale originally developed by (Andrews & Withey, 1976) and as used by (Rentsch & Steel, 1992) (e.g. “How do you feel about the work you do on your job – the work itself?”). The items were rated on a 5-point Likert scale ranging from 1 = *extremely dissatisfied* to 5 = *extremely satisfied*. The higher scores represented a greater degree of general job satisfaction. The coefficients α score from (Rentsch & Steel, 1992) study was .81.

Dependent variable - Affective Commitment. The affective commitment was assessed using the six-item scale originally developed by Meyer *et al.* (1997) and as used by (Rhoades *et al.*, 2001) (e.g. “I feel a strong sense of belonging to my organisation”). The items were rated on a 5-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The coefficients α score from (Rhoades *et al.*, 2001) study was .85. The higher scores represented a greater degree of affective commitment.

Dependent variable - Performance. Subjective performance was assessed using the seven-item scale originally developed by Williams and Anderson (1991). An example item reads: “I adequately completed assigned duties.” The items were rated on a 5-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The higher scores indicated a greater degree of in-role job performance. Cronbach’s α of this scale ranged from 0.85 to 0.90 as reported and used by Tims, Bakker, and Derks (2014).

Dependent variable - Intentions to quit. Intentions to quit were evaluated with the four-item scale originally developed by (Veldhoven & Meijman, 1994) and as reported and used by (Schaufeli & Bakker, 2004) (e.g. “I intend to change jobs in the coming year”). The items were rated on a 5-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The coefficients α score from (Schaufeli & Bakker, 2004) study was .89. The higher scores indicated a greater degree of intention to quit.

Mediator variable - Trust in Management. Trust in management was measured by a ten-item scale originally developed by (Mayer & Davis, 1999) and as used by (Chao *et al.*, 2004) (e.g. “I am confident that top managers can make right decisions”). The combination of selected items were based on their relevance to general trust and integrity aspect of trust perceived from top management. The items were rated on a 5-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The greater score represented a higher degree of trust in management. The coefficient of trust

in management was $\alpha .77$ from (Mayer & Davis, 1999) study and $\alpha .92$ for integrity related trust from (Chao *et al.*, 2004).

Moderator variable - Core self-evaluation. Core self-evaluation was measured using a twelve-item direct measure scale developed by (Judge *et al.*, 2003) (e.g. “I am confident I get the success I deserve in life”). The items were rated on a 7-point Likert scale ranging from 1 = *Very strongly disagree* to 7 = *Very strongly agree*. The increased scale was used in line with (Hiller & Hambrick, 2005) recommendation to measure higher core self-evaluations more precisely. The higher scores represented a greater degree of core self-evaluation. The coefficients α score from (Judge *et al.*, 2003) study was .81.

3.4. Data analysis

The collected data were processed with the statistical packages for social science (SPSS) version 27 (IBM, 2022). The statistical analysis for this study included descriptive statistics, reliability and correlation statistics and a simple mediation model analysis. We conducted a Pearson's correlation analysis to determine the type and nature of relationships between role conflict, trust in the manager, and employee attitudes (Affective commitment, job satisfaction, performance and intention to quit). Effect sizes set a confidence level at 95%, $p < 0.05$ was considered significant. Effect sizes with 0.1 denoted a small effect, 0.3 a medium effect, and 0.5 a large effect (Steyn 1999). The minimum criterion for practical significance was a medium effect of 0.30 (Cohen, 1988). For internal consistency, the study conducted a reliability test using Cronbach Alpha. To ascertain the instrument's reliability, the higher the coefficients the better (Sekaran & Bougie, 2016). We utilised PROCESS macro model 59 with the SPSS programme (Hayes, 2017) for simple mediation modelling with the Jamovi open-access software (Version 2.2.5.0). Mediation was established with the indirect effect using a percentile bootstrap estimation approach with 5 000 samples (Shrout & Bolger, 2002). An indirect effect from the bootstrap analysis was considered significant if the lower-level confidence interval (LLCI) and upper-level confidence interval (ULCI) excluded zero (Zhao, Lynch, & Chen, 2010). A complimentary mediation result could only be determined when the mediated and direct effects existed, pointing towards the same direction (Zhao *et al.*, 2010).

4. Results

The results of this study are presented in four sections below, namely, (i) factor analysis, followed by (ii) descriptive statistics and correlational analysis, (iii) testing for conditional process (mediation moderation) models (iv) testing for mediation effects and finally, (iv) testing for moderation effects.

Factor analysis

A simple principal component analysis was conducted on the items of the scale used in this study to assess if the items loaded on the intended scales (factors). An analysis of the eigenvalues and the scree plot were used to determine the number of factors that could be extracted. EFA were conducted using a simple principal component analysis was conducted on the pooled solution (i.e. all the participants were included in the same analysis) of the independent variable (IV) or predictor in the model [*Role conflict* - (RC) - (eigen value = 2.144; variance explained = 35.735%; KMO = .676)], the mediator (M) (*Trust in the leader*) in the proposed model, (eigen value = 4.316; variance explained =61.655%; KMO = .895)] and the moderator (W) (*Core self-evaluation - 0.57CSE*) in the proposed model, (eigen value = 1.784; variance explained =44.601%; KMO = .580)] and the dependent variables (DV), *Organisation Commitment* (OC) (eigen value = 3.891; variance explained = 63.649%; KMO = .860)], *Job Satisfaction* (IJS) (eigen value = 2.174; variance explained = 54.345%; KMO = .665), *Subjective experience of performance* (ISEP) (eigen value = 2.517; variance explained = 62.936%; KMO = .765), and *Intentions to quit* (ITQ) (eigen value = 3.402; variance explained = 85.055%; KMO = .768)] suggested that all of the *scales used in this study were unidimensional*.

Descriptive statistics

The descriptive statistics and the reliabilities of all the scales used in the study are presented in Table 2 below.

Table 2: Descriptive statistics

	Alpha	Mean	SD	Skewness	Kurtosis
1. Role conflict	0.57	2.99	0.57	-0.35	1.18
2. Trust in the leader	0.58	4.00	0.75	0.69	0.46
3. Core Self Evaluation	0.90	3.01	0.88	-0.25	-0.25
4. Organisation Commitment	0.88	3.36	0.90	-0.46	0.00
5. Job satisfaction	0.71	3.31	0.68	-0.34	-0.02
6. Performance	0.80	3.99	0.56	-0.87	2.66
7. Intentions to quit	0.94	3.51	1.17	-0.40	-0.72

Inspection of Table 2 suggested that all scales were reliable and internal consistent because the yielded Cronbach alpha (α) values for the scales used in the study exceeded the required .70 cut-off value (except for role conflict and trust in the leader). Table 2 also suggests that all the variables used in this study were scored above the midpoint of the scale, suggesting agreement with or experiencing the construct. Table 2 also indicates that the data for all scales used were normally distributed given the guidelines of 2.00 for skewness (Finch & West, 1997) and 4.00 for kurtosis (Field, 2009).

Correlational analysis

This study was also interested in determining the relationships between the variables used in this study (role conflict, trust in the leader, core self-evaluation, affective organisational commitment, job satisfaction, subjective performance and intentions to quit). The results of this analysis are presented in Table 3 below.

Table 3: Results

	1	2	3	4	5	6
1. Role conflict	—					
2. Trust in the leaders	-0.08	—				
3. CSE	-0.01	0.09	-			
4. Commitment	0.01	.47**	.12*	-		
5. Job satisfaction	-0.12	.42**	.08	.64**	-	
6. Performance	-0.09	-.10	.24**	-0.05	.14*	-
7. Intentions to quit	0.05	-.31**	-.02	-.59**	-.47**	.10

** Correlation is significant at 0.01 level. / * Correlation is significant at 0.05 level. Results were interpreted as: 01= small effect, 0.3 = medium effect, 0.5 = large effect (Steyn, 1999).

Inspection of Table 3 suggests that role conflict demonstrated noticeable relations with trust in leadership and employee work attitudes. Strikingly, role conflict was not associated, at least statistically, with any of the variables used in this study. Trust in management reported a positive association with organisational commitment ($r = 0.47$) and job satisfaction ($r = 0.42$) with both relationships considered as medium. Additionally, trust in management has an inverse relationship with turnover intention ($r = -0.31$), which is interpreted as a medium practical effect. Affective commitment has a positive relationship with job satisfaction ($r = .64$) and negative relationship with intentions to quit ($r = -.59$) (both with large practical significance). In addition, job satisfaction also has a negative relationship ($r = -.47$) with intentions to quit (medium practical significance).

Testing the moderated mediations (conditional process) models

This study was also aimed at determining the conditional process where core self-evaluation could serve as a moderator in any of the three paths (a, b, and c') in any of the mediation models. In these models, trust in the leader served as a mediator in the relationship between role conflict and employee attitude (affective organisation commitment, job satisfaction, performance and intentions to quit) through a moderator core self-evaluation (using Hayes process macros model 59 with the SPSS programme). We performed a closer examination of the direct and indirect effects as well as confidence intervals to evaluate their relative sizes. We computed the significance of mediation effects by using the bootstrap procedure (95% normal Confidence Interval (CI) using 5000 samples).

The analysis showed that conditional indirect effect was insignificant as suggested by CI including zero for all groups at different level for the CSE (low [effect = -0.0601 and CI = -0.1680: 0.0210], medium [effect = -0.0652 and CI = -0.1591: 0.0164], and high [effect = -0.0540 and CI = -0.2141: 0.0848]). These results confirmed that trust in the leader did not *mediate* the relationship between role conflict and affective commitment when controlling for the moderator in our conditional process (med mod) model. This means that trust was not salient for the relationship between role conflict and the employee attitudes considered in this study.

Next, we focus on possible moderation effects in our hypothetical model (using Hayes process macros model 59 with the SPSS programme). The moderation effects of the conditional process (med mod) model with role conflict as IV and employee attitudes (affective commitment, job satisfaction, subjective experiences of performance and intentions to quit) as DV are presented below.

Table 4: Moderation (interaction) effects

Organisation commitment					Job satisfaction				
		Confidence Interval					Confidence Interval		
Effect	Estimate	Lower	Upper	p	Effect	Estimate	Lower	Upper	p
RC: CSE → Trust	0.0770	-0.1779	0.320	0.544	RC: CSE → Trust	0.0770	-0.179	0.342	0.563
RC: CSE → Commit	0.1617	-0.0755	0.378	0.162	RC: CSE → Job sat	-0.0718	-0.268	0.108	0.455
Trust: CSE → Commit	0.1913	0.0600	0.318	0.004	Trust: CSE → Job sat	-0.0162	-0.161	0.123	0.823
Performance					Intentions to quit				
		Confidence Interval					Confidence Interval		
Effect	Estimate	Lower	Upper	p	Effect	Estimate	Lower	Upper	p
RC: CSE → Trust	0.0628	-0.05043	0.1676	0.259	RC: CSE → Trust	0.0770	-0.178	0.3295	0.552
RC: CSE → Perform	0.0955	-0.00321	0.2407	0.125	RC: CSE → Quit	-0.0256	-0.336	0.2561	0.866
Trust: CSE → Perform	-0.1908	-0.43836	-0.0211	0.0073	Trust: CSE → Quit	-0.1451	-0.350	0.0364	0.141

A closer inspection of Table 4 revealed that there was a *moderation effect* (Trust: CSE → commitment with $p = 0.004$) in one of the models with organisational commitment as DV. The interaction effects of trust in the leader and CSE (trust*CSE) on affective commitment was significant ($p = 0.0017$; R^2 change = 0.0260; $F = 10.0170$) and the CI (0.0723: 0.3103) did not include zero. This means that levels of CSE was salient for the relationship between role conflict and affective commitment (see Figure and Table 5 below).

*Moderation analysis: Trust in the leader * CSE*

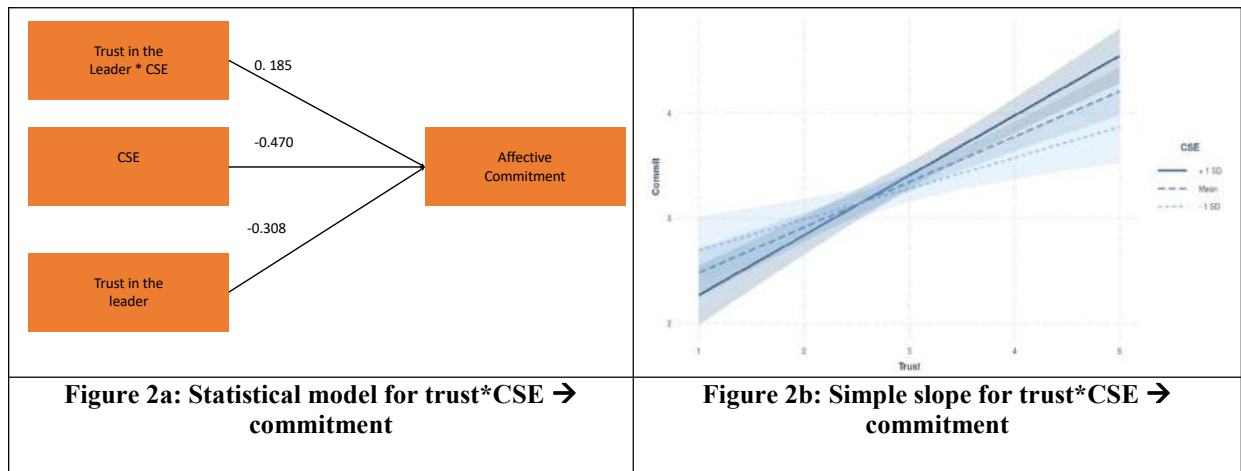


Table 5: Conditional effects of trust at different values of the moderator (CSE)

CSE	Effect	se	t	p	LLCI	ULCI
3.2555	0.2874	0.0784	3.6663	0.0003	0.1331	0.4417
4.0009	0.4300	0.0538	7.9871	0.0000	0.3240	0.5360
4.7462	0.5726	0.0609	9.4007	0.0000	0.4527	0.6925

The Figure 2a, 2b and Table 5 above suggest that the effects of trust on affective commitment increase when the levels of CSE increase. Despite confirming the moderating role of CSE in the relationship between trust and affective commitment, the mediating effects of trust in the relationship between role conflict and job satisfaction, subjective experience of performance and intentions to quit could not be confirmed in this study. Next, we focussed on simple mediation (using Process macros model 4) and simple moderation (using Process macros model 1) to probe for the mediation effects of CSE and the moderator effects of trust and CSE in the relationship between role conflict (IV) and affective commitment (DV).

Mediation analysis with CSE in the relationship between role conflict and employee attitudes as IV

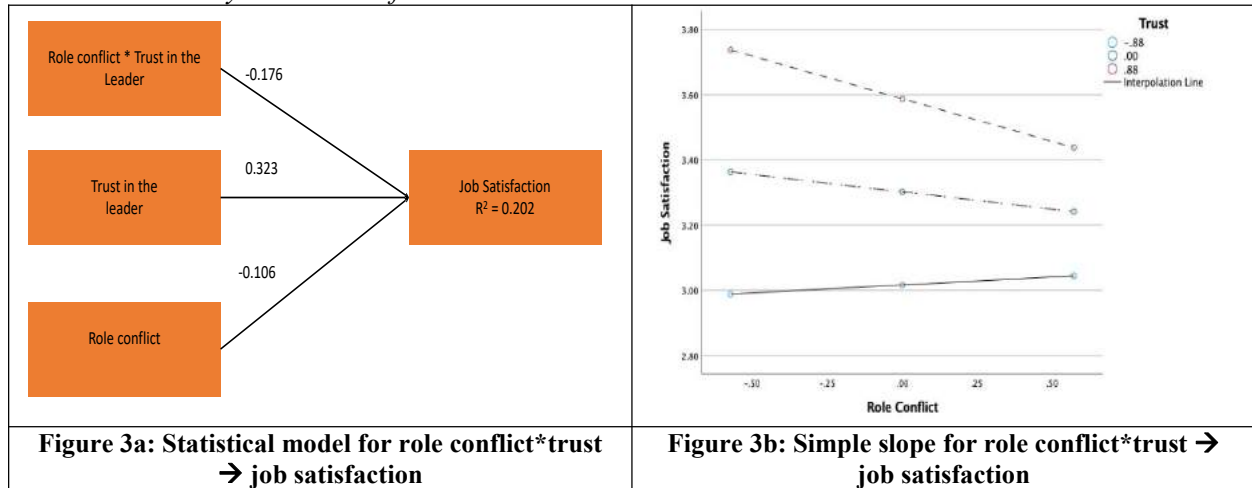
Due to the absence of any mediated moderation (conditional process) model to be confirmed we opted for a simple mediation model with only CSE as mediators independently (because the mediating role trust was insignificant in the previous analysis). The hypothesised models are mainly mediation models in which role conflict in an organisation influences the perceptions of CSE (we did not include trust in the leader as mediator because this could not be confirmed in the preceding mediation moderation models), which, in turn, affects employee attitudes at work such as organisational commitment, job satisfaction, subjective experiences of performance and intentions to quit. Although we started with this more parsimonious model, there are no theoretical reasons to exclude partial mediation. We performed a closer examination of the direct and indirect effects as well as confidence intervals to evaluate their relative sizes. We computed the significance of mediation effects by using the bootstrap procedure (95% normal Confidence Interval (CI) using 5000 samples). The results of the independent analysis of the mediation models with CSE as mediator and employee attitudes (affective organisation commitment, subjective experiences of performance, job satisfaction and intentions to quit) as IV *also did not yield any statistically significant indirect effects.*

Moderation analysis with trust in the leader as moderator in the relationship between role conflict and employee attitudes as IV

Next, we opted for independent moderation models with trust in the leader and trust in the leader and CSE as independent and separate moderators in models testing the relationship between role conflict and employee attitudes separately. We performed a closer examination of the interaction effects as well as confidence intervals to evaluate their relative sizes. We computed the significance of mediation effects by using the bootstrap procedure (95% normal Confidence Interval (CI) using 5000 samples). When considering trust in the leader as a moderator we did obtain significant interaction effects (Trust: Role conflict) for the models with job satisfaction ($p = 0.012$), performance (and

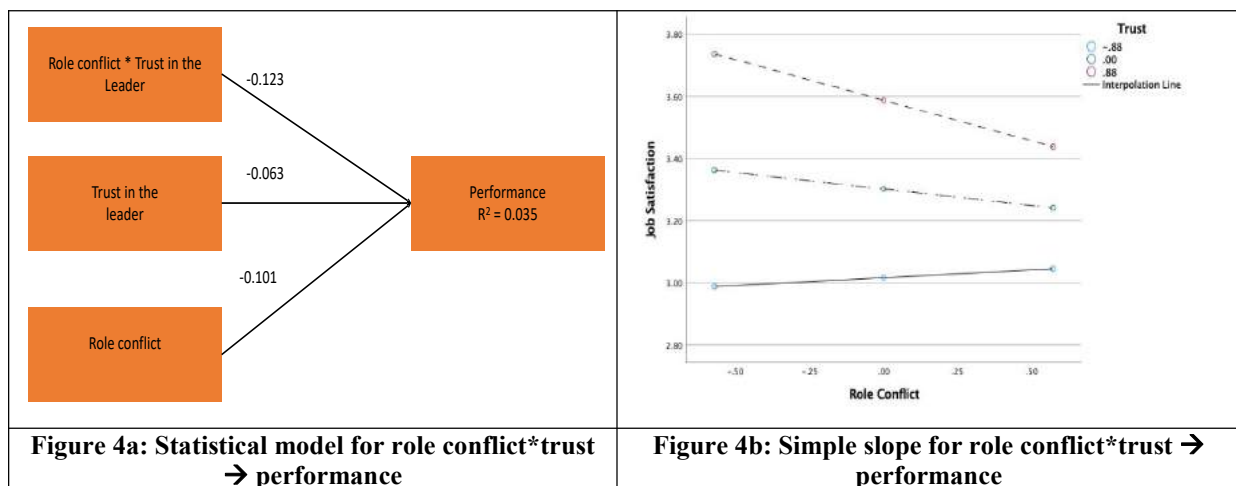
intentions to quit ($p = 0.007$). CSE only demonstrate a moderating role in the model predicting performance by yielding significant interaction effects (CSE: Role conflict) in the relationship between role conflict and performance. The statistical models and simple slope plots for the models are presented in the figures below.

*Moderation analysis: Role conflict * Trust in the leader*



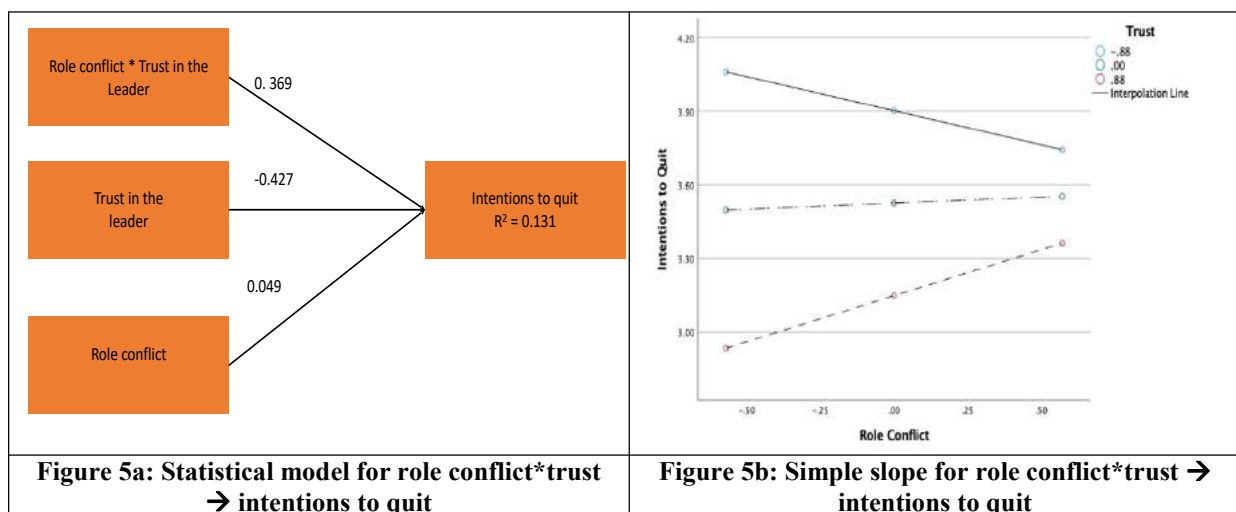
The results suggest that the conditional effect of role conflict on job satisfaction (i.e., the simple effect of role conflict when trust in the leader = 0) is insignificant ($\beta = -0.106$, $se = 0.063$; $t = -1.676$; $p = 0.095$; $[CI = -0.231; 0.018]$). However, the conditional effect of trust in the leader on job satisfaction (i.e., the simple effect of trust in the leader when role conflict = 0) is significant ($\beta = -0.323$; $se = 0.041$; $t = 7.879$; $p < 0.000$; $[CI = 0.242; 0.404]$). The interaction was also significant ($\beta = -0.176$; $se = 0.064$; $t = -2.765$; $p = 0.006$; $[CI = -0.301; -0.051]$), meaning that the interaction effects is significant from zero. Therefore, one can conclude that trust in the leader is a significant moderator of role conflict’s association with job satisfaction. In addition to the p values lower than 0.05, the confidence intervals (CIs) also did not include zero for effects of trust and the interaction between role conflict and trust in the leader. Such CIs further supports the conditional effects of especially the interaction effects of role conflict *trust in the leader.

Simple slope analysis was also performed to probe the interaction effect. The results show that role conflict is related to job satisfaction only among participants “high” on trust in the leader ($\theta X \rightarrow Y | W = -0.262$; $se = 0.085$; $t = -3.080$; $p = 0.002$; $[CI = -0.429; -0.094]$). This effect could not be confirmed for “low” or “medium” trust in the leader. Hence, role conflict matter matters less for performance when trust in the leader was “low” and “medium”.



From the results it is evident that the conditional effect of role conflict on performance (i.e., the simple effect of role conflict when trust in the leader = 0) is *insignificant* ($\beta = -0.101$, $se = 0.057$; $t = -1.753$; $p = 0.081$; $[-0.214: 0.012]$). However, the conditional effect of trust in the leader on performance (i.e., the simple effect of trust in the leader when role conflict = 0) is *insignificant* ($\beta = -0.063$; $se = 0.037$; $t = -1.703$; $p < 0.089$; $[-0.137: 0.010]$). The interaction was also significant ($\beta = -0.123$; $se = 0.058$; $t = -2.134$; $p = 0.034$; $[-0.237: -0.010]$), meaning that the interaction effects is *significant* from zero. Therefore, one can conclude that trust in the leader is a significant moderator of role conflict's association with performance. In addition to the p value lower than 0.05, the confidence intervals (CIs) also did not include zero for the interaction between role conflict and trust in the leader. Such CIs further supports the conditional effects of especially the interaction effects of role conflict *trust in the leader.

Simple slope analysis was also performed to probe the interaction effect. The results show that role conflict is related to performance only among participants “*high*” on trust in the leader ($\theta X \rightarrow Y | W = -0.210$; $se = 0.077$; $t = -2.719$; $p = 0.007$; $[CI = -0.361: -0.058]$). This effect could not be confirmed for “*low*” or “*medium*” trust in the leader. Hence, role conflict matter matters less for performance when trust in the leader was “*low*” and “*medium*”.

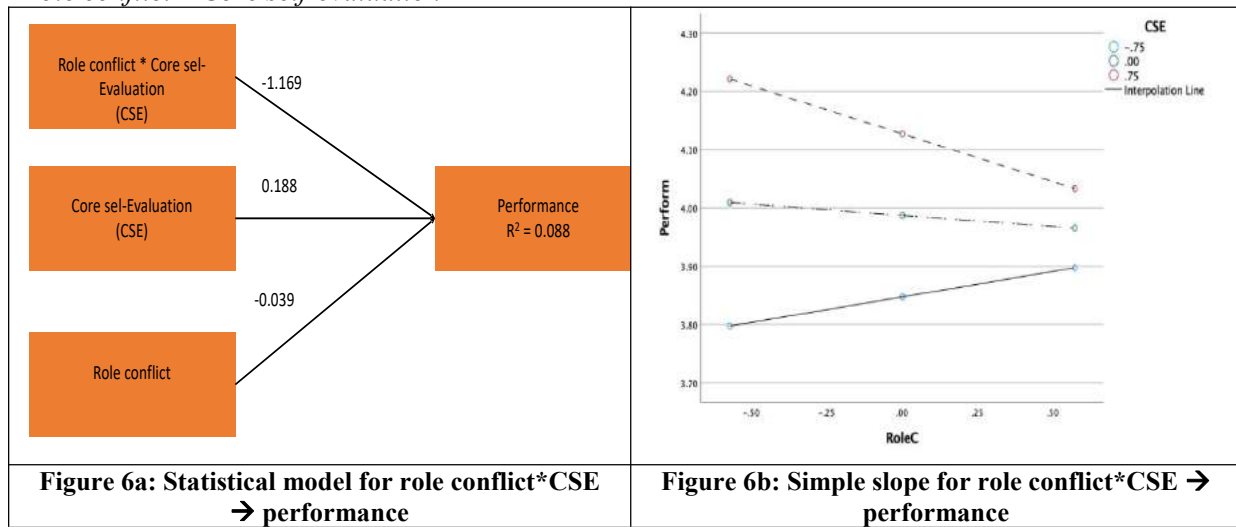


From the results it is evident that the conditional effect of role conflict on intentions to quit (i.e., the simple effect of role conflict when trust in the leader = 0) is *insignificant* ($\beta = -0.049$, $se = 0.113$; $t = 0.433$; $p = 0.666$; $[-0.173: 0.271]$). However, the conditional effect of trust in the leader on intentions to quit (i.e., the simple effect of trust in the leader when role conflict = 0) is *significant* ($\beta = -0.427$; $se = 0.073$; $t = -5.838$; $p < 0.000$; $[-0.570: -0.283]$). The interaction was also significant ($\beta = 0.369$; $se = 0.114$; $t = 3.254$; $p = 0.001$; $[0.146: 0.593]$), meaning that the interaction effects is *significant* from zero. Therefore, one can conclude that trust in the leader is a significant moderator of role conflict's association with intentions to quit. In addition to the p values lower than 0.05, the confidence intervals (CIs) also *did not include zero* for effects of trust and the interaction between role conflict and trust in the leader. Such CIs further supports the conditional effects of especially the interaction effects of role conflict *trust in the leader.

Moderation analysis with CSE as moderator in the relationship between role conflict and employee attitudes as IV

Simple slope analysis was also performed to probe the interaction effect. The results show that role conflict is related to intentions to quit only among participants “*high*” on trust in the leader ($\theta X \rightarrow Y | W = 0.375$; $se = 0.151$; $t = 2.478$; $p = 0.014$; $[CI = 0.077: 0.674]$). This effect could not be confirmed for “*low*” or “*medium*” trust in the leader. Hence, role conflict matter matters less for intentions to quit when trust in the leader was “*low*” and “*medium*”.

*Role conflict * Core self-evaluation*



From the results it is evident that the conditional effect of role conflict on performance (i.e., the simple effect of role conflict when CSE = 0) is *insignificant* ($\beta = -0.039$, $se = 0.059$; $t = -0.654$; $p = 0.514$; $[-0.154; 0.077]$). However, the conditional effect of CSE on performance (i.e., the simple effect of CSE in the leader when role conflict = 0) is *significant* ($\beta = 0.188$; $se = 0.043$; $t = 4.398$; $p < 0.000$; $[0.104; 0.272]$). The interaction was also significant ($\beta = -0.169$; $se = 0.066$; $t = -2.575$; $p = 0.011$; $[-0.298; -0.040]$), meaning that the interaction effects is *significant* from zero. Therefore, one can conclude that CSE is a significant moderator of role conflict’s association with performance. In addition to the p values lower than 0.05, the confidence intervals (CIs) also *did not include zero* for effects of trust and the interaction between role conflict and CSE. Such CIs further supports the conditional effects of especially the interaction effects of role conflict *CSE.

Simple slope analysis was also performed to probe the interaction effect. The results show that role conflict is related to job satisfaction only among participants “high” on trust in the leader ($\theta X \rightarrow Y | W = -0.165$; $se = 0.063$; $t = -2.608$; $p = 0.009$; $[CI = -0.289; -0.040]$). This effect could not be confirmed for “low” or “medium” trust in the leader. Hence, role conflict matter matters less for performance when trust in the leader was “low” and “medium”.

5. Discussion

Although the relationships between various organisational situational factors and employee work attitudes have been explored and confirmed empirically, there are limited empirical studies linking perceived role conflict, trust in the leader, core self-evaluation and employee work attitudes such as (job satisfaction, affective commitment, in-role job performance and turnover intentions have been considered in a single conceptual model. The current project was aimed at examining a conditional process (moderated mediation) model of trust in leadership and core self-evaluation in the relationship between role conflict and employee work attitudes of job satisfaction, affective commitment, in-role job performance and turnover intentions.

Therefore, *the first objective* was to examine the relationships between role conflict, trust in the leader, CSE and employee work attitudes (job satisfaction, affective commitment, in-role job performance and turnover intentions). The results denote that role conflict demonstrated noticeable relations with trust in leadership, CSE and employee work attitudes. Amazingly, role conflict was not associated, at least statistically, with any of the variables used in this study. Trust in the leader reported a positive association with organisational commitment and job satisfaction with both relationships. Additionally, trust in the leader has an inverse relationship with turnover intention. Affective commitment has a positive relationship with job satisfaction and a negative relationship with intentions to quit. In addition, job satisfaction also has an inverse negative relationship with intentions to quit.

Our findings are in line with empirical studies that have confirmed the positive relationship between trust in the leader and affective commitment. For instance, in a study among public sector nurses a positive correlation was established between trust in a line manager nurse and employees' affective commitment (Akgerman & Sönmez, 2020). Fischer, Hyder, & Walker (2020) have also established trust as a multidimensional construct with dimensions that have different strength to work outcomes such as affective commitment. Trust in supervisor or leader was reported to increase the levels of affective commitment among employees sampled from various companies in China (Xiong, Lin, Li, & Wang, 2016). In the similar vein, past studies confirmed a negative relationship between trust in the leader and turnover intentions, for example higher levels of trust were found to decrease turnover intentions among faculty members in a large US university. Similarly, turnover intentions also decreased among nurses with good trust relations with their managers (Simha & Pandey, 2021).

The *second objective* of the study was to investigate the mediating role of trust in leadership in the relationship between role conflict and employee work attitudes. The results suggest that

conditional direct and indirect effect was insignificant as suggested by CI including zero for all groups at different level for the trust in the leader (low, medium and high). These results insinuate that trust in the leader did not *mediate* the relationship between role conflict and affective commitment when controlling for the moderator in our conditional process (med mod) model. This means that trust was not salient for the relationship between role conflict and the employee attitudes considered in this study. So irrespective of the presence or absence of the level of trust in the leader, the relationship (direction and extent) between role conflict and employee attitudes defined as job satisfaction, affective commitment, in-role job performance (positive) and turnover intentions (negative) will not statistically differ in this sample.

The third objective of the study was to determine the moderating role of core self-evaluation in the relationship between role conflict and employee work attitudes through a mediator, trust in leadership. The results of the conditional process (moderated mediation) analysis also suggest that none of the anticipated moderation (conditional) effects of our hypothetical model could be confirmed except for one. The interaction effects of trust in the leader and CSE (trust*CSE) on affective commitment proofed to be significant. This means that levels of CSE was salient for the relationship between role conflict and affective commitment.

In staying with our proposed hypothetical model that seeks to determine the *mediating and moderation role of trust in the leader and CSE* in the relationship between role conflict and employee attitudes, we considered simple mediation and moderation models to probed for these roles. Due to the absence of any mediated models in our initial conditional process model we opted for only *simple mediation models with only CSE as mediators* independently (because the mediating role trust was insignificant in the previous analysis). The hypothesised models are mainly mediation models in which role conflict in an organisation influences the perceptions of CSE which, in turn, through its indirect effects would affects employee attitudes at work such as organisational commitment, job satisfaction, subjective experiences of performance and intentions to quit. The results of the independent analysis of the mediation models with CSE as mediator and employee attitudes (affective organization commitment, subjective experiences of performance, job satisfaction and intentions to quit) as IV *also did not yield any statistically significant indirect effects*. The mediation indirect effects of both trust in the leader and CSE could best be explained as the results of the poor relationships between role conflict, trust in the leader and CSE as obtained in this study with this sample.

Given the discouraging mediation results obtain when testing our conditional process model, we still had to shed light on the hypothetical *moderating role of trust and CSE* in the relationship between role conflict and employee attitudes. In order to reach this objective, we opted for simple moderation models considering both trust in the leader and CSE as moderators in this hypothesis model. The results of the significant interaction between role conflict and the moderators (trust and CSE) in the various models suggested that moderation roles could be confirmed for trust in the relationship

between role conflict and employee attitudes (job satisfaction, performance and intentions to quit) and CSE in performance respectively.

We then focus on *the conditions under which these relationships hold true*. It seems like that the level of trust matters for the relationship between role conflict and job satisfaction, performance and intentions to quit. Conspicuously, the results suggest that the effects of role conflict on *job satisfaction, performance and intentions to quit* was only significant for participants with *high levels of trust*. Therefore, low and average levels of trust matter less for the relationship between role conflict and job satisfaction, performance and intentions to quit. The results also imply that the effects of role conflict on *performance* was only significant for participants with high levels of CSE. Therefore, low and average levels of CSE matter less for the relationship between role conflict and performance.

6. Implications

Theoretical implications

The first contribution of this project was the construction and testing of a conditional process model focusing on the mediation (trust) and moderation (CSE) role in the relationship between role conflict, affective commitment, job satisfaction, performance and intentions to quit in a single model. The systematic examination of the effects of trust and CSE in employee attitudes in a single model considering various dispositional factors and employee attitudes simultaneously should be encouraged to expand our knowledge on the psychological mechanisms responsible for the direct and indirect effects of role conflict on employee attitudes. With the consideration and inclusion of other worthy dispositional (self-esteem, self-efficacy, locus of control, to mention but a few) and situational factors (involvement in decision-making, rewards, promotion, training, and the right equipment, to mention but a few), our model could become a significant instrument for explaining the *how and when* role conflict have direct and indirect employee attitudes.

It has long been acknowledged that trust in the leader has a significant effect on positive organisational outcomes (e.g., Erkutlu and Chafra, 2016). However, there is not much research on how trust will intervene in the relationship job demands such as role conflict and employee attitudes. This study is unique in explaining the connection of role conflict, trust in the leader and CSE in relation to employee attitudes. Discouraging, as expected, our study did not support the notion of a strong negatively association trust in the leader and CSE with role conflict. Nevertheless, we did introduce in this study important boundary conditions: follower trust in the leader and CSE. By showing that role conflict has a stronger direct effect on job satisfaction, performance and intentions to quit for high trust in the leader and CSE participant's, the findings of the study support the notion that followers can vary in their degree of receptivity to leadership effects and dispositional factors (Wang, et al.; 2018)

Managerial implications

Pertaining to managerial and practical implications, the study findings reveal that organisations should strive to provide a work environment that promotes trust. Public sector organisations, in particular, should avail training support for the leaders that can stimulate their cognitive realisation of the behaviours needed to portray high levels of trust in organisations. Organisations should also include metrics for core self-evaluation when designing performance evaluations to encourage the continuous development of this attribute. Further, the recruitment and selection processes should be utilised to prioritise employees with higher levels of dispositional traits. Therefore, to further advance the atmosphere and culture of trust in organisations, managers should lead by example and engage in behaviours that promote trust relationships.

7. Limitations And Future Research

There are some limitations to note in the study which indicate the path for future studies. First, measurements, based on a questionnaire for all variables, can raise questions regarding the common method variance (CMV). As stated by Podsakoff et al. (2003), CMV can be reduced by gathering research variables from different sources and with time separation, as is the case in our research design. In addition, our research is limited to a cross-sectional design and therefore we cannot make

judgement about cause and effects. In future studies, through a collection of longitudinal data, researchers may attempt to identify the situational and dispositional factors in the workplace leading individuals to role conflict over time. Although the study's recommendations would be more applicable to the contextual setting of the study (Lesotho public sector), the model of the study can be tested in other cultural and contextual settings, especially in other developing African countries.

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The Influence of Retention Factors on Nurses' Turnover Intention

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Keywords

Retention, nurses, turnover intention, retention factors, public hospitals

Abstract

The retention of nurses has become of critical importance to South Africa. This study investigated the relationship between retention factors and intention to leave. A cross-sectional quantitative research approach was used. Data were collected from a sample of nurses from public hospitals in Johannesburg, South Africa, via a self-administered questionnaire. A non-probability sampling technique was used, and through a convenience sample, 203 responses were elicited. Data were analysed using SPSS. A Pearson correlation analysis and multiple regression analysis were performed to achieve the research objectives. The following retention factors predicted intention to leave: work environment was the most significant predictor, followed by training and development, and thirdly job characteristics. This study provides more insight into factors that affect the retention of nurses within public sector hospitals in South Africa.

1. Introduction

Effective retention practices are required to mitigate the effects of turnover intention (Dhanpat, et al., 2018). The effects of high turnover rates are felt by healthcare organisations and have become a global concern due to the nursing shortage experienced (Ayalew et al., 2021; Perreira, 2018; Ferede, et al., 2021). The nursing profession is characterised as demanding and stressful and is often associated with poor well-being (Pisanti et al., 2015; Giorgi et al., 2016). Various demands may hinder nurses' engagement, and access to resources to mitigate their demands remains limited (Patience et al., 2020). Such practices within the healthcare setting expose nurses to job insecurity, resulting in turnover. Strategies are needed to ensure their commitment and retention (Dhanpat et al., 2019).

Studies have shown that hospitals that display positive work environments in terms of practice are less inclined to observe adverse work outcomes associated with nurses, namely, increased job satisfaction, burnout, and intention to leave (Coetzee et al., 2013; Klopper et al., 2012; Liu et al., 2014). However, the healthcare sector for nurses presents a scenario with high stress and anxiety levels (Amin, Oxley, Noah, & Nordin, 2018). The effects of such job-related challenges result in a decline in nurses' job satisfaction (Suni, Nirmala & Sikkandar, 2017).

1.1. The nursing context in South Africa and abroad

Nurses comprise the largest group within healthcare in the country (Rispel et al., 2014). Although work in healthcare can be gratifying, it is also taxing (Kinman & Leggetter, 2016). Public hospitals are also disparate compared to private hospitals (Maseko & Harris, 2018). Nurses experience various work demands (Patience et al., 2020) and the profession is inherently considered a stressful occupation (Gonnelli et al., 2016; Khamisa et al., 2017; Pennanen & Mikkola, 2016; Ruiller & van der Heijden, 2016). Nurses remain dissatisfied mainly with their work based on characteristics of their work resulting in increased workload, absenteeism, staff conflict and exhaustion (Munyewende et al., 2014). Notably, nurses have reported higher stress levels when compared to other health care professionals (Williams & Smith, 2013). The recent COVID-19 pandemic has altered the work environment and exposed nurses to conditions threatening their well-being (Arnetz et al., 2020).

The shortage of nurses has become a global concern (Brooke et al., 2019; De Oliveira et al., 2017; Yamaguchi, Inoue, Harada, & Oike, 2016). Various factors have alluded to this shortage which include the demanding nature of work, little reward and a lack of supervisor support, burnout (Van Bogaert et al., 2013), increased level of stress (Ball et al., 2015), and low job satisfaction (Lacheret et al., 2015). The factors influencing retention need further investigation (Kossivi et al., 2016). Hence, hospitals and human resources need to establish retention strategies to reduce nurses' intention to leave. Therefore, the current study sets out to achieve the following objectives:

- Establish the relationship between retention factors and nurses' intention to leave
- Determine which retention factors best predict intention to leave.

Studies within Africa and sub-Saharan Africa have shown significant healthcare challenges (Ganga-Limando 2018). Moreso, a scarcity of nurses in South Africa is likely to strain its health care system (Crush & Pendleton, 2010). South Africa introduced the Occupational Specific Dispensation (OSD) in 2007 following the Public Health and Social Development Sectoral Bargaining Council (PHSDSBC) to address the retention challenges of nurses such as compensation and career progression. One study of 182 nurses found that the OSD brought very little satisfaction amongst nurses (Khunou & Davhana-Maselesele, 2016). Since the work context of nurses is characterised by work-related stress and burnout, it is noted that it can lead to lower levels of job satisfaction (Khamisa, Peltzer, Ilic & Oldenburg, 2016).

In the context of the study, the turnover intention is considered the intention employees have to leave their present workplace (Dåderman & Basinska, 2016), and relates to nurses' intention to leave the nursing profession, or their current employer. It is known that globally turnover intentions. We define two turnover intentions: (a) the intention to leave the present workplace; and (b) the intention to leave the nursing profession. Turnover intentions are high in nurses worldwide (e.g., Chan et al., 2008; Binkowska-Bury et al., 2010; Sawatzky and Enns, 2012; Homburg et al., 2013). As a result, the current study is of value as the perceived factors affecting the retention of nurses could assist in mitigating nurses' intention to leave. Various studies have been conducted on nursing shortages (Hoseini-Esfidarjani & Negarandeh, 2017; Negarandeh, 2015), nursing development and improvement programmes (Rahimaghvae et al., 2015; Salehi & Emamzadeh, 2014), job satisfaction, exhaustion, and burnout (Ranjbar, et al., 2017) and nurse retention (Chamani, et al., 2012; Rivaz, et al., 2018). More studies need to be conducted on the retention of nurses. According to Boulton and Beer (2021), studies on retention factors of nurses are rare.

Theoretical framework: employee retention and intention to leave

Economists, psychologists, and organisational scholars have primarily researched turnover in organisations. Seminal research has shown that employee retention corresponds with turnover intention, and the work of March and Simon's (1958) attempted to preliminary develop a general theory explaining why people are likely to leave their jobs. The retention of employees can be noted in early research and concerns of employees leaving based on other job opportunities and an individual's self-perception of continuing to work (March & Simon, 1958; Mowday et al., 1979; Price & Mueller, 1981).

Retaining talented employees enables organisations to achieve and maintain success (Das & Baruah, 2013; Paul & Vincent, 2018). Turnover intention remains a concern in the area of retention on research and practices. Turnover intention is considered the final stage before employees explicitly exit the organisation (Dysvik & Kuvaas, 2010).

Globally, organisations struggle to retain talented employees (Hom et al., 2012; Mita et al., 2014). Therefore, research has focused on mitigating reasons for low employee retention with assistance from human resources. Therefore, there is a need to place emphasis on retention factors (Dhanpat et al., 2018). Van Dyk (2016) asserts that an employee's intention to leave is characterised by a decision to leave. In this scenario, nurses think about leaving their current employer (thoughts of leaving, planning to leave, and deciding to leave) and search for alternative job opportunities.

Research on turnover distinguishes between employee's intention to leave, namely, cognitive behavioural intentions (whereby nurses leave their workplace) (Nei et al., 2015). According to Cowden and Cummings (2012), behavioural type intentions are categorised into two concepts – intention to leave and intention to continue. Research has alluded that turnover intentions is considered a multi-step process comprising behaviours and actions to leave, decisions and attitudes (Cowden & Cummings, 2012). Organisations must take proactive measures to address and reduce employee turnover (Dysvik & Kuvaas, 2010). For this reason, there is a need for human resource managers and practitioners and line managers to consider focusing on retention factors and their contribution towards turnover intention.

2. Employee retention

Research on employee retention primarily focuses on establishing organisational practices that assist in employee retention (Coetzee & Stoltz, 2015). In a study by Döckel (2003), several retention factors were established namely identified seven critical retention factors: compensation, job characteristics, training and development opportunities, supervisor support, career advancement and work-life balance. Other studies have operationalised employee retention based on these factors (Dhanpat et al., 2018; 2019). An additional factor was considered in the work environment. These factors are characterised as essential human resource practices influencing turnover intention and employee retention.

Compensation

Compensation is considered one of the very important retention factors across various organisations (Mabaso, 2016). It is defined as “...tangible and intangible rewards that an employee receives in exchange for his or her work.” (Nel et al. 2020, p. 488). Amongst nurses, compensation is also regarded as one of the important factors that contribute towards nurses retention (Duru & Hammoud, 2021; Rana & Skakya, 2021). According to Mumbauer et al., (2021), remuneration influences employment decisions amongst healthcare workers to a large extent. In a study of South African nurses, salary was one of the reasons for higher levels of dissatisfaction (Khunou & Davhana-Maselesele, 2016). A study conducted on German nurses revealed that the nursing profession is attractive based on the “soft” characteristics associated with nursing, such as working with patients and teamwork. However, the researchers also found that increasing compensation or wages also helps to increase the attractiveness of the nursing profession within hospitals (Kroczeck & Späth, 2022).

Job characteristics

According to the Job Characteristics Model by Hackman and Oldham (1980), jobs that create meaningfulness have a combination of the following job dimensions: skill variety, task identity, task significance, autonomy and feedback. Job characteristics are shown to predict job satisfaction and generally do predict stress, and depression (Stein & Vawda, 2014) Job characteristics can also include the workload culture of an organisation, and where the organisation is based (Mumbauer et al., 2021). A study with 320 nurses in Kenya revealed that task identity and autonomy significantly predictors of nurses' performance (Maru, Biwott, & Chenuos, 2013).

Training and development

Employees seek opportunities to develop their work-related skills, learn and develop. Organisations must provide such opportunities to enable their employees to develop their knowledge, skills and attitudes (de Braine & Roodt, 2015). Training and development assist in providing employees with a positive contribution towards their career (Nienaber, Bussin, & Henn, 2011). In terms of the nursing context, there is a need for nursing managers to provide opportunities for their staff through ongoing education and training programs (Rizany, Hariyati & Handayani, 2018). As a result, employees with access to such opportunities are likely to shape their attitudes toward the organisation and decision to leave (Lesabe & Nkosi, 2007, Allen, Shore & Griffeth, 2003). Training and development initiatives provide opportunities for nurses to grow, leading to positive work behaviours (Park et al., 2010; Van Windergerden et al, 2017; Weer & Greenhaus, 2017). Positive work experiences are more likely to influence nurses to remain within their organisations.

Supervisor support

Employees are likely to view support from the organisation as supervisor support. According to De Braine and Roodt (2015), this could include an employees relationship with their supervisor and can be linked to the quality of the supervisor relationship. This can include engaging behaviours of a supervisor (Barkhuizen et al., 2014). Supervisor support positively influences work engagement (Harter & Adkins 2015) and retention (Gu & Day, 2013). Supervisor support positively influences the retention of nurses (Heidari et al., 2017). A systematic review of articles on the predictors and consequences of turnover amongst nurses showed that supervisor support was the most important predictor of retention (Halter, et al., 2017).

Career advancement

Career advancement is considered an essential contributor to employee retention within organisations. Employee career advancement could include promotion opportunities, salary increases, and training opportunities (De Braine & Roodt, 2015). Studies amongst nurses have indicated that when career development opportunities are not present, it leads to dissatisfaction, which may lead to an intention to leave (Washeya & Fürst, 2021). Advancement and promotion were shown to predict job satisfaction amongst Nigerian nurses (Akinwale & George, 2020). In several studies, opportunities to advance in one's career is shown to lead to positive work behaviours (Amiri et al., 2016, & Tharshini et al., 2016).

Work-life balance

Experiencing work-life balance is considered an important contributor to life and work satisfaction (Lee, et al., 2020). Work-life balance is experienced when a person has harmony and satisfaction between their work and personal roles (Cascio, 2000). It is sometimes associated with work-family balance. "Work-family balance is defined as "a global assessment that work and family resources are sufficient to meet work and family demands to such an extent that participation is effective in both domains" (Voydanoff, 2006, p.825). Employees may experience work-family conflict as a result of an unbalanced work-life. Work-family conflict may result in employees disengaging in the workplace (Mauno et al., 2015; & Robinson et al., 2016). In a study amongst nurses in Japan, nurses who displayed lower levels of striving to attain work-life balance experienced higher levels of intention to leave (Matsuo, Suzuki, Takayama, Shibata & Sato, 2021).

The consequence of intention to leave

High costs are associated with turnover intention (Ngqeza & Dhanpat, 2021). Nurses' intention to leave may raise organisational costs, decrease quality care to patients and cause a brain drain in nations (Ayalew, et al., 2021). Overall, once nurses leave, it creates staff shortages within hospitals. Based on the literature review presented the following research questions were developed:

- Does a relationship exists between retention factors and intention to leave?

3. Method

The study adopted a quantitative research approach and followed a cross-sectional design. Cross-sectional studies provide insights into a phenomenon at a particular time point (Saunders, 2011). Data were collected from a sample of nurses from public hospitals in Johannesburg, South Africa.

Respondents and sampling

Data were collected through the use of non-probability sampling, and a convenience sampling technique was selected. The participants of the study were collected from three public hospitals located in Johannesburg. There were 320 questionnaires distributed, which yielded 203 responses (63% response rate). The sample comprised 79.1% of nurses were female (159), and 20.9 % of the sample were men (42). Most nurses (71.6% = 144) identified themselves to the Black race group. Most participants were 25 to 34 years of age (36.6%), whilst the median age group was 35 to 44 years of age. Most nurses employed in the sample were registered nurses (42.6% = 86), whilst only 8,4% were enrolled in nursing auxiliary.

Data Collection and analysis

Data were collected through a paper and pencil questionnaire, supplied to the nursing managers of each hospital, and circulated to the nurses. Permission to conduct the study was obtained from the hospital manager. The questionnaires were completed and collected by the researcher.

Data were analysed through the Statistical Programme for Social Sciences (SPSS, version 27) through the following statistical methods; descriptive statistics and inferential statistics were calculated. Internal consistency and reliability, Cronbach's alpha coefficients were also measured. In order to assess scale validity, factor analysis was computed. Pearson's product-moment correlation was used to establish the direction and strength of the relationships between the retention factors and intention to leave. A multiple regression analysis was used to assess which retention factor could best predict nurses' intention to leave.

Ethical considerations

The researcher followed ethical protocols. An informed consent accompanied the questionnaire detailing the nature and purpose of the study. Participants were informed of their right to withdraw from the study and ensured their confidentiality and anonymity.

Measuring instruments

Retention Factor Management Scale (RFMS)

Participants completed the RFMS developed Döckel et al. (2006). The scale consists of 35 items based participants satisfaction of retention factors on a five-point Likert scale ranging from 1 strongly agree to 5 strongly disagree and intention to leave: compensation ("Consistency of my company's pay policies"); job characteristics ("My job gives me considerable opportunity for independence in how I do the work"); training and development ("I have the opportunity to be part of activities that promote my professional development"); supervisor support ("My supervisor looks for opportunities to praise positive employee performance, both privately and in front of others"); career advancement ("My chances of being promoted are good") and work-life balance ("My work schedule is often in conflict with my personal life"). A previous study by Dhanpat et al., (2018) confirmed reliability and reported the following Cronbach alpha coefficients compensation = .933; training and development = .875; supervisor support = .717; career advancement = .788; and work-life balance .814. Van dyk and Coetzee (2012) reported the Cronbach alpha coefficient of job characteristics as .67. An example of an item of intention to leave include "Do you intend to leave this hospital voluntarily in the near future"? Dhanpat et al., (2018) reported an acceptable Chronbach alpha of .875.

The work environment scale was used as a retention factor and adapted from the survey instrument developed by Chew (2004). The scale used a seven-point Likert scale, with 1 strongly disagree and 7 strongly agree. An example of a work environment item included: "For the work I do, the physical working conditions are very pleasant". Chew (2004) reported an acceptable Cronbach alpha of .70.

4. Results

Reliability and Validity

Table 1 provided insights into the reliability analysis and was assessed by analysing Cronbach's coefficient alpha. The retention factors yielded acceptable alphas compensation = .97; job characteristics = .67; training and development = .92; supervisor support = .82; career advancement = .85; work-life balance = .88 and work environment = .91. Intention to leave achieved an alpha of .75. Nunnally and Bernstein (1994) suggest that when assessing internal consistency .70 is considered acceptable. The inter-item correlation coefficient for job characteristics was also assessed as it achieved a value lower than .70. Upon inspection of the mean inter-item correlation, the value achieved was 0.16, suggesting that this value was within the cut-off point of 0.40 (Pallant, 2010).

Factor analysis was conducted using principal axis factor analysis using a varimax rotation with Kaiser Normalisation for the retention factor management scale and work environment dimension. A principal component analysis was used for the intention to leave scale. In terms of the scales, the Kaiser-Meyer-Olkin measures of sampling adequacy respectively achieved were .908, .880, and .601

exceeding the recommended value of .60 (Pallant, 2010). Upon inspection of Barlett's test of sphericity, statistical significance was achieved ($p < 0.001$) and hence, the factorability of the correlation matrix was supported (Pallant, 2010). The RFMS achieved communalities $> .30$. A six-factor solution was achieved. Eigenvalues > 1 were noted and accounted for 63.35% of the variance. Work environment achieved communalities .30, and a one-factor solution was supported. This accounted for 61.67% of the variance. A one-factor solution was supported, achieving communalities $> .30$ and accounted for 67.01% of the variance. Therefore, the normality and homoscedasticity preconditions for the study were met.

Descriptives, reliability analysis, and Pearson correlation

Table 1 presents the descriptive analysis, reliability analysis and Pearson product-moment correlation. Table 1 shows that nurses were most satisfied with their work environment (mean = 4.12). Nurses were least satisfied with compensation (mean = 2.72). Nurses intention to leave achieved a mean value of 3.15, suggesting their uncertainty to remain or leave their hospital. The relationship between the retention factors and intention to leave were assessed. A correlation index of 1.0 suggests that a perfect relationship exist, regardless of the direction yielded (Pallant, 2010). An R -value closer to one suggests nurses' satisfaction with the retention factors and the more likely to experience a decreased intention to leave. The r -value ranged from $-.149$ to $.601$, $p < 0.01$. representing a low to moderate relationship between the retention factors and intention to leave.

Table 1 : Descriptive analysis, Reliability analysis, and Pearson correlation

	Mean	SD	Comp	JC	TD	SS	CA	WLB	WE	ItoL
Comp	2.72	0.96	.97							
JC	2.96	0.94	.456**	.67						
TD	3.24	0.98	.559**	.481**	.92					
SS	3.15	1.00	.464**	.368**	.566**	.82				
CA	3.09	0.87	.503**	.344**	.593**	.601**	.85			
WLB	3.23	1.05	-.155*	-.149*	-.276**	-.239**	-.236**	.88		
WE	4.12	1.57	.510**	.375**	.514**	.578**	.558**	-.243**	.91	
ItoL	3.15	1.00	.335**	.169*	.459**	.436**	.458**	-.276**	.527**	.75

Notes: Comp = compensation; JC = job characteristics; SS = supervisor support; CA = career advancement; WLB = work-life balance; WE = work environment; ItoL = intention to leave; SD – Standard deviation ** $p < 0.01$. alphas in the diagonal

Multiple Regression analysis of retention factors and intention to leave

A multiple regression analysis was conducted to predict intention to leave based on retention factors. Upon inspection, a significant regression equation was identified ($F(7.192) = 16.014$, $p < .000$) with an R^2 value of .369. Table 2 shows that the total variance in the dependent variable (intention to leave) explained in the model is 36.9% (R^2) and presents significant results. For multiple regression to occur, no multicollinearity in the data should be present. Therefore, the tolerance and VIF scores were assessed. Tolerance values are an indicator of variance that is not explained by other independent variables and should be greater than .10. VIF is the inverse of tolerance, and values should be below 10. Higher values on tolerance and VIF suggest the presence of multicollinearity (Pallant 2010). The tolerance values yielded in the study ranged from (0.41 to 0.71) and VIF values of ≤ 2.10 . The values obtained are less than the cut-off points of ≥ 2.5 to ≥ 4.0 suggested for small samples. Therefore, multicollinearity was of concern and Beta (β) values were interpreted with confidence. From Table 2, it is evident that the work environment ($\beta = .33$) is a great predictor of intention to leave, followed by (training and development ($\beta = .21$) and, subsequently job characteristics ($\beta = -.14$).

Table 2 Multiple Regression Analysis for retention factors and intention to leave

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		R	R ²	Adjusted R ²	SE of the estimate	Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound					Tolerance	VIF
(Constant)	1.70	0.35		4.78	.000	1.00	2.40	.607	.369	.346	.806		
Comp	.00	0.08	.00	-.04	.97	-.16	.15					.57	1.75
JC	-.15	0.07	-.14	-2.11	.04	-.30	-.01					.71	1.41
TD	.21	0.08	.21	2.53	.01	.05	.38					.48	2.10
SS	.08	0.08	.08	.94	.35	-.08	.23					.51	1.95
CA	.15	0.09	.13	1.58	.12	-.04	.33					.50	1.99
WLB	-.11	0.06	-.11	-1.85	.07	-.22	.01					.90	1.11
WE	.21	0.05	.33	4.27	.00	.11	.31					.54	1.84

5. Discussion

Over the years, research on turnover often focused on why employees leave; however, it has become increasingly important to identify why employees remain in the organisation (Harman et al., 2007). Shimp et al. (2017) suggest that organisations need to focus and address factors that may influence retention. A lack of effort on this part can increase turnover intention. Hence, hospitals need to remain cognisant of the current study's findings that work environment, training and development and job characteristics play a significant role in predicting intention to leave amongst nurses. These findings are similar to previous studies regarding training and development (Park et al., 2010; Van Windergerden et al., 2017; Weer & Greenhaus, 2017); and job characteristics (Maru, Biwott, & Chenuos, 2013; Mumbauer et al., 2021). The previous dissatisfaction with the OSD (Khunou & Davhana-Maselesele, 2016), decisions to emigrate, and overall levels of dissatisfaction experienced amongst nurses in South Africa (Mathevula & Dhliwayo, 2022; Oosthuizen & Ehlers, 2007.) requires immediate addressing. According to Boulton and Beer (2018) organisations need to pay more attention and implement policies and practices that will enable greater professional development and career advancement of nurses.

Implications for theory and practice

Healthcare institutions must cultivate an environment which retains nurses within the organisation and the profession. With top management and human resources, effective retention strategies can be deployed, further reducing nurses' intention to leave. In this case, of the three public hospitals surveyed, nurses were largely dissatisfied with their compensation whilst remaining uncertain about their satisfaction with the retention factors. It is duly noted that the South African health care system is under pressure, leading to implications of employee turnover. Subsequently, hospital managers and human resources need to understand their role in ensuring nurses' retention. It is important to note that the dimensions of these retention factors are also encapsulated in the psychological contract (Dhanpat & Parumasur, 2014) as such unmatched expectations of this can lead to turnover. Based on the results of the study in the public sector hospitals, HR managers must focus on the work environment, training and development and job characteristics, as this can lead to the untimely departure of nurses.

Limitations and Recommendations for future research

The study was conducted within public hospitals. It is recommended that future researchers focus on both the private and public sectors, and a comparative analysis would assist in understanding the parity of nurses' intention to leave. More so, the current study focused on one specific geographic location and could be broadened. Findings of the study must be interpreted with caution, and the study cannot be generalised to other healthcare facilities or industries. Data were collected during a non-COVID period. It would be interesting to see how these retention factors play out during the pandemic, considering the strain nurses took at the frontline.

6. Conclusion

Employee and turnover retention remains a challenge across various organisations (Masoga, 2013), particularly amongst nurses. To decrease turnover intention would require improving nurses' current work environments, training and development opportunities and increasing job characteristics that provide meaningful and motivating work. Both public and private hospitals need to develop and implement a large range of sustainable policies and initiatives that can make the nursing profession more attractive for nurses in South Africa.

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The Relationship Between Employee Relations and Demographic Characteristics in The South African Military

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Keywords

Employee relations
Employment
relationship
South Africa
Demographic
characteristics
Military

Abstract

Management needs to properly manage employee relations as employees are an organisational asset. Previous studies on the relationship between demographic characteristics and employee relations are limited within the Military environment. A quantitative research method within a positivistic research paradigm was used to conduct research. The fighting and support staff members of all South African Military (SA Army Fmn units) participated in this study. An existing questionnaire was used to collect data. The data were analysed by using the Pearson chi-square. There was a significant relationship between employee relations and former force, length of service and education. It is important to note that management needs to develop proper institutional policies and programmes, attend to career graphs, create opportunities for employees' participation, develop effective internal communication, give recognition to employees as they are seen as organisational assets, and create a sense of bonding among the employees, maintain cordial relations with the employees, and create a sense of belonging among the employees.

1 Introduction

This article offers a broad overview of the research survey of personnel of all South African Formation (SA Army Fmn) units within the South African (SA) Army and aims to determine if there is a significant relationship between employee relations and demographic characteristics (age, gender, level of education, rank group and former force, and length of service) in the South African Military. Organisational performance and the aligning of employees' aims, objectives, and commitment to the organisational goals have been a priority for many organisations (Anwar, & Abdullah, 2021). Employees feel more motivated to work hard when they understand how their work contributes to the overall achievement of the organisation's goals motivating factors, such as work success, recognition, diversification of responsibilities and career advancement, play an important role in motivating employees at work (Pânjoleanu, 2020).

The alignment between personal and organisational goals and values leads to employee job satisfaction, which is derived from employees enjoying their work because they like it and, thus, experiencing increased identification with their organisation and the sustainability of harmonious employment relations (Mdletye, Coetzee & Ukpere, 2014; Ismail, 2022).

2 Problem Investigated

As shown in sections 5.2-5.3, previous studies on the relationship between demographic characteristics and employee relations are limited within the military environment. It is not clear if there is a significant relationship between employee relations and demographic characteristics within the South African Military. This study aims to close these research gaps.

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3 Research Objectives

The research objective of this study is to determine if there is a significant relationship between employee relations and demographic characteristics (age, gender, level of education, rank group and former force, and length of service) in the South African Military.

4 Hypotheses

The following hypotheses were derived from sections 5.2-5.7:

- H₁: There is a significant relationship between employee relations and age in the South African Military.
- H₂: There is a significant relationship between employee relations and former force in the South African Military.
- H₃: There is a significant relationship between employee relations and gender in the South African Military.
- H₄: There is a significant relationship between employee relations and length of service in the South African Military.
- H₅: There is a significant relationship between employee relations and level of education in the South African Military.
- H₆: There is a significant relationship between employee relations and ranks in the South African Military.

5 Literature Review

5.1 Employee Relations

Most organisations have a primary objective: either to produce goods or to provide services for re-sale or consumption by their clientele and could not survive as businesses without it (Aylott, 2022). For an organisation to achieve this aim, it must have all four factors of production, namely capital, personnel, land, and raw material (Odhong & Omolo, 2014). Employees constitute one of the most critical factors of production and are usually referred to as the greatest asset that the organisation can have (Sequeira & Dhriti, 2015). To achieve the set organisational goals, the employers should create and maintain a work environment that satisfies the needs of both employees as individuals and as a collective, therefore management should improve employees' morale and build company culture. An employee can be defined as a person who offers labour to the employer in exchange for remuneration, both in cash and benefits (Budd & Bhave, 2019). This is confirmed by the social exchange theory which advocates for the exchange between behaviour and rewards and proposes that the exchange relationship evolves through time and trust between people occurs to maintain a positive balance in the employment relationship between the reciprocal relationship between management, employees and trade unions (Dodd, Brewster, & Holland, 2021).

An employee relations framework should create and maintain a motivated and productive workforce (Sequeira & Dhriti, 2015). Griffin, Bryant, and Koerber (2015) assert that organisations with a strong employee relations policy framework are more likely to have an advantage over those that do not have it when it comes to competition for skilled employees. Competition for new quality employees in the tight labour market can directly affect the ability of organisations to attract, retain, or motivate those employees (Bratton & Gold, 2017). Finding, keeping and maintaining a productive workforce is according to Wrathall and Steriopoulos (2022) the key to a motivated and productive workforce.

Bratton and Gold (2017) and Hickland (2017) assert that employee relations have an impact on the continued relationship between employers and employees in the workplace. The term 'employee relations' encompasses the mixture of employer-led initiatives aimed at directly or indirectly improving workplace communication, involving employees in decision-making and securing their compliance with management rules through disciplinary actions. Employee relations also contribute to enhancing employee commitment (Bratton & Gold, 2017; Hickland, 2017). The responsibility in terms of employment relations is firstly vested in the compliance with labour legislation and then all

policies and procedures in the organisation by adhering to applicable laws and compliance in practice (Nel, Werner, Botha, Chinyamurindi, Dodd, Du Plessis, Mdingela-Majova, Mey, Poisat, & Van Hoek, 2021).

Employee relations can simply be defined as a study of the rules, regulations, and agreements by which employees are managed both as individuals and as a collective, or the priority given to the individual as opposed to the collective relationship. This may vary from organisation to organisation depending on the management values (Leat, 2014). According to Sisson (2010), employee relations is about the regulation and governance of the employment relationship, regardless of the existence of collective bargaining structures. Employee relations can be defined as a formal or informal interaction between employees themselves and their employers. This interaction encompasses all areas of management that may include labour relations, employee involvement and participation, and employee communication (Odhong & Omolo, 2014). Bendix (2022) describe employment relations as the encompassing study of relationships, the work situation and working man, the labour market problems and certain processes, structures, institutions and regulations unique to the relationship. It is also important to note that all these aspects are places or occur within a specific social, political, economic and historical context, and can or should not be studied in isolation.

Employee relations is a process of collective or individual workforce engagement that is mostly based on verbal or unwritten processes, and a general understanding that arises out of the interaction between both main parties (employers and employees) in the employment relationship in the workplace (Ram, Edwards, Gilman & Arrowsmith, 2001). Vakola and Nikolaou (2005) argue that to sustain organisational productivity, good and effective work relationships between employers and employees are to be prioritised (Bhatnagar, 2007). This is crucial for any organisation to remedy conflicts, build supportive work relationships, and communicate effectively with employees and their representatives. An engaged workforce at all levels of an organisation can trigger sustained positive employee relationships (Bhatnagar, 2007). Employee relations can also refer to the efforts by organisations to manage relationships between employers and employees as well as employees' representatives. Organisations with good employee relations programmes treat employees fairly and consistently so that, in turn, the employees are committed to their jobs while remaining loyal to the organisation (Rea, 2018).

Nel, Kirsten, Erasmus, Gobind, Holtzhausen and Jordaan (2020) define employee relations as a complex and dynamic open system of formal and informal relations with interactions between stakeholders (employers, employees, the state, employers and employee representatives, customers, and competitors) in an employment relationship can be individual and collective of nature. This employment relationship is premised on common ground as well as conflict dynamics (Holtzhausen, 2020). The ideal end state of this relationship is the practice of the notion of fairness in balancing, integrating and reconciling the interests of all parties (Nel, Kirsten, Swanepoel, Erasmus & Jordaan, 2016, Bendix, 2022). Bendix (2022:13-15) confirms this viewpoint and also emphasises that the complexity of the relationship and the uniqueness of it is multi-layered and dynamic in nature.

In the study on the relationship between various demographics and employee relations by Li, Zhang, Chen, Jiang, Wen, and Hu (2018), the results showed that the two most visible dimensions of demographic diversity – gender and race diversity can have direct positive effects on employee relations. Their study showed that employee relations can be influenced by the demographic diversity of the workforce. With an increase in demographic diversity in workforces today, demographic diversity should assist in the improvement of employee relations within the organisation.

Segbenya (2014) found in the study to examine the effect of demographic variables on employees' decision to stay or quit in a Ghanaian Commercial Bank (GCB) that the age of respondents was part of the demographic variable found to have a statistically significant effect on employees' intention to quit results of poor employee relations.

Alsaieri, Puteh, and Ali (2020) indicated that nationality, experience, and age, had a noteworthy effect

on the relationship between HRM practices and employee loyalty. They also stated that most of the literature showed that older employees are more loyal than younger employees. Gender had no impact on the relationship between HRM practices and employee loyalty, and there is no difference between males and females regarding their loyalty to the organisation. It also indicated that the higher the employees move up in the hierarchal levels in organisational structure, and the more years of work experience, the more loyal the employees are.

5.2 The Relationship between Age and Employee Relations

One of the main quantitative variables, namely age, is used by demographers since a link was first identified between mortality and age many years ago. Age is used for the analysis of all demographic phenomena as a variable of choice that indicates that chronological age is the determinant of any demographic behaviour (Séguy, Courgeau, Caussinus & Buchet, 2019). Andoh, Antwi Bosiakoh, and Afranie (2012) state that the concept of age is viewed differently by different people. Some people consider old age as a build-up of experience and knowledge that is accumulated between the time a person is born and any specific time (Khan, Khan, Khan, Nawaz & Yar, 2013). As a person grows older, his or her level of thinking matures and perceives life differently (Baradicco, 1991). As time progresses, the prospects of quitting or resigning lessen and, thus, relate differently to the employer compared to the young employees (Kundi, 2010).

From the above literature, the following hypothesis is derived:

H₁: There is a significant relationship between employee relations and age in the South African Military.

5.3 The Relationship between Former Force and Employee Relations

Former force refers to members of the seven forces amalgamated to form the SANDF in 1994, namely the Azanian People's Liberation Army, Bophuthatswana Defence Force, Ciskei Defence Force, South African Defence Force, Transkei Defence Force, Umkhonto Wesizwe and Venda Defence Force, no literature could be found on the relationship between former force and employee relations. The SANDF is one of the few if not only force which integrated forces from previous homelands and non-statutory forces as a result of apartheid. It is a South African unique situation, hence the lack of studies.

From the above literature, the following hypothesis is derived:

H₂: There is a significant relationship between employee relations and former force in the South African Military.

5.4 The Relationship between Gender and Employee Relations

The biological and physiological features that members of society classify themselves as males or females are referred to as gender or sex. Males and females are distinctly biologically different from each other in many ways and levels such as variations in cells, tissues, organ systems, and anatomy (World Health Organization, 2010). Gender is defined by Khan *et al.* (2013) as the state of an individual being male or female, with a focus on social and cultural differences rather than biological differences. Gender is one of the factors that affect the perceptions that individuals have of their employers or employee relations (Collins & Tisdell, 2002). Men and women perform tasks relatively differently from each other and, thus, alter their perception of the relationship they will have with their employer (Moriarty & Honnery, 2005; Rydstedt, Johansson & Evans, 1998).

From the above literature, the following hypothesis is derived:

H₃: There is a significant relationship between employee relations and gender in the South African Military.

5.5 The relationship between length of service and employee relations

Length of service refers to the number of years of experience an individual has in a specific organisation and has worked for a specific amount of time. Yeatts and Hyten (1998) state the background of an employee can affect the performance of an employee and that the length of service is a direct link between employer and employee relationship. Employees who are employed with a company for a long time are said to be satisfied at work and remain in employment with the company, whereas those who leave are dissatisfied and hope that better jobs can be found. Length of service is the period employees spend on a job (Butler, Brennan-Ing, Wardamasky & Ashley, 2014). According to Ng and Feldman (2013), high levels of employee relations are associated with an increased length of tenure to an employee's worth in the labour market.

From the above literature, the following hypothesis is derived:

H₄: There is a significant relationship between employee relations and length of service in the South African Military.

5.6 The Relationship between Education and Employee Relations

Education necessitates a change in one's lifestyle as well as the improvement of one's ability to choose the best option available in any given circumstance with the information available at that particular time. It refers to personal growth when taking into account the best possible approach to a problem at any given time. The ability to adapt to changing circumstances and environments is critical and education assists with becoming more resilient. Ya'acob, Mohd Awal, Idris, Hassan, Kaur, and Mohd Noor (2011) are of the opinion that education is more than a financial investment; it is a necessary input for human life, progress, and survival. According to Wehmeyer (1996), self-assertiveness is the foundation of life. Strong and steadfast individuals are capable of making choices and decisions on actions and breaking free from unfavourable outside influence or interference from the society we live and work in. Confidence and assertiveness are learned skills while self-esteem is not as strong without education, since people acquire information and experience through education. It is evident that education plays a vital role in communication and promoting values, which in turn affect the attitudes, behaviours, and responses of the people responsible for the success of organisations.

From the above literature, the following hypothesis is derived:

H₅: There is a significant relationship between employee relations and level of education in the South African Military.

5.7 The Relationship between Ranks and Employee Relations

The 1999 Walker Employee Relations Benchmark report found 33 per cent of all employees were uncommitted to their organisation and expected to leave shortly. In the same report, six factors that most influence an employee's commitment to an organisation and influence employee relations were identified as follows: fairness, care and concern for employees, satisfaction with day-to-day activities, trust in employees, the reputation of the organisation and work and job resources.

It was also discovered that the top executives ('the generals') tend to view communication with top managers ('the colonels') and those outside the organisation as more important and more challenging than communication with lower subordinates ('the sergeants'). Senior managers have traditionally been much better at managing macro-communication while leaving micro-communication to the highly variable abilities and ambitions of the supervisor, Therkelsen and Fiebich (2003:121-122). The literature relating to the relationship between military ranks and employee relations is limited and does not directly link with the military ranks.

From the above literature, the following hypothesis is derived:

H₆: There is a significant relationship between employee relations and ranks in the South African

Military.

6 Research Methodology

Bless, Higson-Smith, and Sithole (2014) and Silverman (2013) describe research design as the specification and outlining of the most suitable method to be used to test specific hypotheses under given conditions. The research design relates directly to the answering of the research question (Bless, Higson-Smith & Sithole, 2014), and research methodology guidelines state that research design is the conceptual structure within which research would be conducted (Ader & Mellenbergh, 1999). Bless, Higson-Smith and Sithole (2014) describe a design in quantitative research as a detailed outline for testing the hypotheses, put in clear and definite terms. In this study, a survey design was used, and a quantitative research approach was followed. Quantitative research is focused predominantly on collecting numerical data. It quite often relies on deductive reasoning which forms a view about the likelihood of an event occurring, and then tests whether the view is correct, partially correct or incorrect (Mncwabe, 2013). A cross-sectional survey is the form of data collection or survey that occurs on a once-off basis at a particular point in time to measure the impact of a dependent variable over the independent variable (Ader & Mellenbergh, 1999). A quantitative survey and a cross-sectional design were used amongst all SA Army Fmn units throughout South Africa and the study is correlational, and quantitative in nature. This study was conducted within a positivistic research paradigm.

This study was exploratory in nature as it is a methodological approach that explores research questions that have not previously been studied in depth. It is often used when the issue you're studying is new, or the data collection process is challenging (Bless, Higson-Smith & Sithole, 2014).

6.1 Population, Sampling and Sample

In this study, the population consists of the fighting and support staff of the SA Army Fmn units. There are approximately 13 741 personnel in all SA Army Fmn units situated in all nine provinces. Sampling is the process of selecting the people who could participate in a research project. Stangor (2011) and Bless, Higson-Smith, and Sithole (2014) define sampling as assessing a portion of the entire grouping in social and natural sciences. Brynard and Hanekom (2011) advise that in determining sample size 4.5% of a population between 10000 and 99999 should be extracted. Stratified random sampling is a process of dividing the population into small strata - e.g. age, gender, and level of education - and selecting participants for the sample in such a way that every strata percentage is proportionally represented (Stangor, 2011). A sample is a sub-group of the population from which one wants to draw a conclusion (Ang, 2014; Stangor, 2011). Seminal authors Krejcie and Morgan (1970) developed a table recommending the size of a sample compared to its population which recommends that a population between 10 000 and 15 000 should have a representative sample of 4.5% of the population.

Therefore, in this study, the sample consists of 618 fighting and support staff members of all SA Army Fmn units, which is 4.5% of the total population of 13741.

6.2 Questionnaire

For this study, primary data was utilised. Existing questionnaires were used and they are employee relations (Raghavendra, 2013:477), job satisfaction survey (Spector, 1994:693) and work engagement questionnaire (Schaufeli, Bakker & Salanova, 2006:714).

The questionnaire and Likert scale that were adapted to collect data were divided into four (4) parts. The layout of the data collection tool in this study was as follows:

- **Part A:** Biographical information of the respondents.
- **Part B:** Questions pertaining to employee relations.
- **Part C:** Questions pertaining to job satisfaction.
- **Part D:** Questions pertaining to work engagement.

Part A dealt with biographical information in a choice form question, while Parts B to C consisted of statements using a 5-point Likert scale. A 5-point Likert scale was employed with 1 representing strongly disagree, 2 representing disagree, 3 representing not sure, 4 representing agree and 5 representing strongly agree. The following themes were extrapolated from the questionnaire:

Table 1: Factor analysis of employee relations

Ser No	QN	Question	Factor
1	B1	My employer maintains healthy employee relations	Consultation
2	B3	My employer provides opportunities for employees' participation	Consultation
3	B5	My employer maintains cordial relations with the employees	Consultation
4	B7	My employer maintains the internal communication with the employees	Consultation
5	B9	My employer enhances the career graph of the employees	Consultation
6	B13	My employer maintains the grievances redressing mechanism	Consultation
7	B14	My employer creates good working relations among the employees	Consultation
10	B4	My employer recognises the employees as organisational assets	Recognition
11	B6	My employer creates better working conditions	Recognition
12	B10	My employer creates a sense of belonging among the employees	Team building
13	B11	My employer creates a healthy working atmosphere	Team building
14	B12	My employer encourages the employees to actively participate in organisational activities	Team building
15	B15	My employer brings about a sense of bonding among the employees	Team building

R represents the reversed question during the data analysis

6.3 Validity and Reliability

Factor analysis is a collection of methods that investigate how constructs influence the responses to a group of measured variables (Staines, Johnson & Bonacci, 2008; Decoster, 1998). The researcher validated the questionnaire by conducting a pilot study in the Fmn unit in Pretoria, ensuring that all demographics were represented and that the questions were understood and interpreted in the way they were meant to be. Construct/content validity of the questionnaire was tested using confirmatory factor analysis. Convergent and discriminant validity were also conducted to ascertain the accuracy of the scale instrument used in the study.

The consistency or reliability of a data collection tool is of paramount importance (Staines, Johnson & Bonacci, 2008). Reliability is defined by Bless, Higson-Smith, and Sithole (2014) as the extent to which the observable measures that represent a concept are accurate and stable when used for the concept in several studies, while Stangor (2011) adds that reliability is the degree to which the data collection tool (questionnaire) is free from random errors.

Cronbach's alpha serves to estimate the average correlation among all the items on the data collection scale and is numerically equivalent to the average of all possible split-half reliabilities, as emphasised by Stangor (2011). The acceptable p-value of Cronbach's alpha was set at 0.7, thus, indicating the strong reliability of the construct being measured. All the constructs had a Cronbach's alpha value higher than 0.6, except for recognition which had low internal reliability and consistency but was kept as all the Dillon-Goldstein's rho for all the constructs were higher than 0.7, indicating that all the constructs were reliable.

Cronbach's alpha reliability statistics were calculated to determine the reliability of the questionnaire (Tavakol & Dennick, 2011). An internal consistency method of item analysis was used in a test run to check the reliability of the questionnaire.

Cronbach's alphas for most of the constructs were below 0.7, therefore the average variance extracted (AVE) was used to measure validity of the data collection tool. The quality of a measurement model is evaluated by checking the convergent validity which indicates the degree to which the indicators under the constructs are related. It is assessed by the loading of the indicator variables onto their respective latent constructs; the loading should load higher than 0.5 which suggests that there is a correlation between the latent construct and its indicators. It is also inspected by the average variance extracted (AVE), which is an indicator of how much the construct explains the variance of its observed variables (Ravand & Baghei, 2016:8). Readings of AVE above 0.5 are indicators of convergent validity and it was the case in this study as per Table 2 below:

Table 2: Analysis of convergent validity of employee relations according to AVEs

Variable	Factor	Sub-factor	AVE
Employee relations	Consultation	Relat1	0,652
	Recognition	Relat3	0,616
	Team building	Relat4	0,735

6.4 Data Gathering

Ethical approval was obtained from Tshwane University of Technology and the ethics number is FCRE2018/FR/10/010-MS. For this study, primary data were utilised. The questionnaire was distributed to the sample group in each SA Army Fmn unit by the two research assistants. Questionnaires were hand-delivered in each unit and two research boxes were used for respondents to submit questionnaires; this was to ensure confidentiality and anonymity. One box was for consent forms and the other was for questionnaires.

6.5 Statistical Method and Data Analysis

The descriptive statistics are reported in the form of frequencies and percentages, and the results are presented in tables and graphic format.

Due to the categorical nature of the results the chi-square test was used to test the statistical significance of relationships between employee relations and the demographic characteristics of the respondents. All testing was done at $\alpha=0.05$ level of significance.

7 Results and Findings

7.1 The Demographic Profile of the Sample

The following is the overview of the demographic profile extrapolated from the information derived from the completed and returned questionnaires of the sample population. Fractional percentages are rounded off to the whole number.

Of the 618 questionnaires distributed, 342 respondents returned the forms duly completed forms. This represents a 55% response rate. The demographic profile of the respondents is depicted in Table 2 below:

Table 3: Demographic profile of the respondents

Corps group	Frequency	Percent
Fighting (Combat)	305	89%
Support (Non-combat)	37	11%
Total	N=342	100%
Gender	Frequency	Percent
Male	268	78%
Female	76	22%
Total	N=344	100%
Age	Frequency	Percent
18-30	108	32%
31-40	94	27%
41-50	106	31%
51-60	33	10%
Total	N=341	100%
Union membership	Frequency	Percent
Yes	43	12%
No	302	88%
Total	N=345	100%
Length of service	Frequency	Percent
0-10	127	37%
11-20	153	45%
21-30	60	17%
31-40	3	1%
41-42	0	0%
Total	N=343	100%
Highest Educational Qualification (HEQ)	Frequency	Percent
Grade 12/Matric	253	75%
N6/National Certificate	28	8%
National Diploma/Diploma	23	7%
Bachelor's degree/Advanced Diploma/BTech	22	7%
Honours Degree/Post Graduate Diploma	7	2%
Master's Degree	4	1%
Doctoral Degree	0	0%
Total	N=337	100%
Rank Group	Frequency	Percent
Non-commissioned officer (NCO)	250	75%
Warrant officer (WO)	57	17%
Officer	27	8%
Total	N=334	100%
Former Force	Frequency	Percent
SADF	58	17%
APLA or MK	28	8%
TVBC	32	10%
SANDF	223	65%
Total	N=341	100%

Of the 342 respondents, 89% were from the fighting corps while 11% were from the supporting corps. In the SA Army, the fighting corps consists of Infantry, Armour, Artillery, Air Defence Artillery, Intelligence, Signals, and Engineers. The supporting corps consists of Human Resources, Logistics, Catering, Technical Services, Ammunition, and Military Music. The fighting corps dominates the SA Army as the core business of the armed forces is to conduct military operations supported by the small

component that supplements the fighters. Two hundred and sixty-eight respondents (78%) were males while 76 respondents (22%) were females. Therefore, it can be concluded that the SA Army is dominated by males while females still form a minority of the respondents. The respondents with ages between 18 to 30 and 41 to 50 dominated with 108 (32%) and 106 (31%) respectively from the total pool of 341, while there were 94 (27%) respondents between the ages of 31 to 40. The respondents between the ages of 51 to 60 were a minority at 33 (10%).

Only 43 (12%) respondents were members of trade unions compared to 302 (88%) who were not unionised. This indicates unionisation is not popular amongst the members who responded and, thus, the majority of military members may remain largely un-unionised. Of the 343 valid responses, 153 (45%) respondents had been employed for 11 to 20 years, 127 (37%) had a service of between nil to 10 years, 60 (17%) respondents had been employed for 21 to 30 years and no one had served longer than 41 years. Most soldiers serve an average of 11 to 20 years before exiting the force. Fewer respondents reached the 21 to 30 years milestone and almost none serve beyond 30 years. The majority of respondents, namely 253 (75%), were matriculants, followed by N6/National Certificate holders at 28 (8%), while National and Advanced Diploma graduates share the same percentage (7%) with 22 and 23 respondents respectively. There were 11 (3%) postgraduates, with one possessing a Doctorate or PhD qualification. It can be concluded that the SA Army employs more members with a grade-12 qualification than post-grade-12 graduates if the results of this research are to be applied to the whole organisation.

Non-commissioned officers (NCOs) formed the majority with 250 (75%) responses from a total of 334 participants, followed by warrant officers (WOs) at 57 (17%) responses, while the minority were officers at 27 (8%) responses. The SA Army consists of a larger component of NCOs with the smallest grouping being officers. The SANDF is made up of a larger component of soldiers that joined after 27 April 1994 to date at 223 (66%), followed by the 58 (17%) members who served in the South African Defence Force (SADF) prior to 27 April 1994. Former members of the Transkei, Venda, Bophuthatswana, and Ciskei defence forces (TVBC) constituted 32 (9%), while former members of Umkhonto We Sizwe (MK) and the Azanian People Liberation Army (APLA) were a minority with 28 (8%) respondents combined. This indicates that the SANDF is the only former force growing while others are in the reduction phase because they cannot be rejuvenated - the integration process was terminated in 1998. The SANDF former force or members with no former force is the only grouping that is growing as the MSDS intakes have been taking place annually since January 2003. A Likert scale can be defined as a categorical variable which means the Chi-square test can be used to test for relationships. Frequency tables can be used the assumption that the Likert scale variables are categorical. A Likert scale is usually regarded as ordinal variables which cannot be presented as a mean score (Wegner, 2020).

Next, the chi-square results are discussed.

7.2 Age and Employee Relations

The Pearson chi-square comparison illustrates whether military personnel of age categories 18 to 30, 31 to 40, 41 to 50, and 51 to 60 differed in their views on how they experienced employee relations, job satisfaction, and work engagement within the SA Army Fmn.

Table 4: The comparison between age groups and responses to employee relations

Item	18-30			31-40			41-50			51-60			Pearson chi2(6)	Pr
	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure		
B1	17.59	51.85	30.56	11.70	60.64	27.66	16.98	61.32	21.70	18.18	54.55	27.27	4.1389	0.658
B3	19.44	66.67	13.89	17.02	60.64	22.34	15.09	62.26	22.64	30.30	48.48	21.21	7.3944	0.286
B4	12.96	68.52	18.52	25.53	60.64	13.83	18.87	61.32	19.81	6.06	66.67	27.27	10.5247	0.104
B5	28.97	48.60	22.43	23.40	47.87	28.72	23.58	50.00	26.42	27.27	48.48	24.24	1.7361	0.942
B6	22.64	56.60	20.75	20.21	58.51	21.28	22.64	60.38	16.98	27.27	48.48	24.24	2.0894	0.911
B7	12.96	84.26	2.78	20.21	73.40	6.38	19.81	73.58	6.60	15.15	72.73	12.12	7.3454	0.290
B8	19.44	71.30	9.26	14.89	72.34	12.77	18.87	70.75	10.38	18.18	63.64	18.18	2.9598	0.814
B9	26.85	59.26	13.89	23.40	54.26	22.34	20.75	56.60	22.64	33.33	45.45	21.21	5.5472	0.476
B10	14.95	56.07	28.97	20.21	46.81	32.98	19.81	49.06	31.13	9.09	42.42	48.48	6.9001	0.330
B11	21.30	38.89	39.81	17.02	41.49	41.49	25.47	41.51	33.02	15.15	33.33	51.52	5.2261	0.515
B12	29.63	61.11	9.26	27.17	60.87	11.96	24.76	64.76	10.48	18.18	63.64	18.18	3.4546	0.750
B13	6.48	53.70	39.81	7.45	51.06	41.49	8.49	58.49	33.02	9.09	39.39	51.52	4.6545	0.589
B14	9.26	81.48	9.26	17.02	70.21	12.77	21.70	67.92	10.38	12.12	69.70	18.18	9.3052	0.157
B15	24.07	66.67	9.26	26.60	60.64	12.77	17.92	62.26	19.81	39.39	48.48	12.12	10.9824	0.089

In conclusion, there were no significant relationships between age groups and responses related to employee relations as all the p values are larger than 0.05, which is the maximum significance level.

7.3 Former Force and Employee Relations

The Pearson chi-square comparison as to whether the views of the military personnel of former force SADF, APLA/MK, TVBC and SANDF relate to employee relations within the SA Army Fmn is presented in table 2.

Table 5: The comparison between former force groups and responses to employee relations

Item	SADF			APLA or MK			TVBC			SANDF			Pearson chi2(6)	Pr - Probability
	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure		
B3	27.59	41.38	31.03	10.71	75.00	14.29	12.50	71.88	15.63	17.49	64.13	18.39	14.3218	0.026
B4	20.69	46.55	32.76	7.14	85.71	7.14	12.50	68.75	18.75	18.39	65.47	16.14	16.6315	0.011
B7	17.24	74.14	8.62	39.29	60.71	0.00	12.50	71.88	15.63	14.80	80.72	4.48	19.0420	0.004
B9	32.76	36.21	31.03	14.29	71.43	14.29	15.63	68.75	15.63	23.77	57.85	18.39	14.7975	0.022
B15	34.48	41.38	24.14	14.29	75.00	10.71	15.63	71.88	12.50	23.77	64.13	12.11	15.1708	0.019
B1	6.90	63.79	29.31	25.00	50.00	25.00	25.00	65.63	9.38	17.04	55.61	27.35	10.8413	0.093
B5	18.97	46.55	34.48	35.71	46.43	17.86	28.13	50.00	21.88	25.23	49.10	25.68	4.8400	0.564

Item	SADF			APLA or MK			TVBC			SANDF			Pearson chi2(6)	Pr - Probability
	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure		
B6	17.24	51.72	31.03	17.86	67.86	14.29	40.63	46.88	12.50	20.81	59.28	19.91	12.3188	0.055
B8	22.41	56.90	20.69	21.43	71.43	7.14	6.25	87.50	6.25	17.04	71.75	11.21	11.4851	0.074
B10	15.52	48.28	36.21	14.29	57.14	28.57	21.88	40.63	37.50	17.57	50.00	32.43	2.0723	0.913
B11	20.69	37.93	41.38	32.14	42.86	25.00	18.75	40.63	40.63	19.73	39.46	40.81	3.6874	0.719
B12	20.69	58.62	20.69	28.57	64.29	7.14	21.88	71.88	6.25	27.73	61.36	10.91	7.1726	0.305
B13	5.17	53.45	41.38	17.86	57.14	25.00	6.25	53.13	40.63	7.17	52.02	40.81	6.2166	0.399
B14	20.69	58.62	20.69	25.00	67.86	7.14	12.50	81.25	6.25	12.56	76.23	11.21	11.6999	0.069

Table 6: Chi-square significance - former force groups and employee relations

Q No	Statement	Factor	Chi-Square Pr
B9	My employer enhances the career graph of the employees	Consultation	0.022
B3	My employer provides opportunities for employees' participation	Consultation	0.026
B7	My employer maintains internal communication with the employees	Consultation	0.004
B4	My employer recognises the employees as organisational assets	Recognition	0.011
B15	My employer brings about a sense of bonding among the employees	Team building	0.019

There are generally no significant relationships between the former force groups and responses related to employee relations as all the p values are larger than 0.05, which is the maximum significance level. This; however, excludes questions B3, B4, B7, B9, and B15, where it was discovered that there were relationship differences between employees from different previous forces. Their views on how they experienced employee relations are based on the answers to the questions reflecting the table above, where the p-value was smaller than 0.05.

7.4 Gender and Employee Relations

The Pearson chi-square comparison is presented in table 4 to show the relationship between males and females and employee relations within the SA Army Fmn.

Table7: The comparison between different gender and responses to employee relations

Item	Male			Female			Pearson chi2(6)	Pr
	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure		
B1	16.42	59.33	24.25	14.47	52.63	32.89	2.2888	0.318
B3	17.16	61.94	20.90	23.68	60.53	15.79	2.1530	0.341
B4	17.54	63.81	18.66	18.42	65.79	15.79	0.3324	0.847
B5	25.09	49.44	25.47	28.95	43.42	27.63	0.8906	0.641
B6	20.30	59.77	19.92	28.95	50.00	21.05	3.0064	0.222
B7	15.67	79.48	4.85	23.68	68.42	7.89	4.1123	0.128
B8	19.03	68.66	12.31	11.84	76.32	11.84	2.2583	0.323
B9	22.76	56.34	20.90	30.26	53.95	15.79	2.2065	0.332
B10	16.85	47.94	35.21	18.42	53.95	27.63	1.5301	0.465
B11	20.90	39.18	39.93	19.74	40.79	39.47	0.0804	0.961
B12	25.66	62.26	12.08	27.63	60.53	11.84	0.1194	0.942
B13	8.96	51.12	39.93	3.95	56.58	39.47	2.2322	0.328
B14	15.67	72.01	12.31	13.16	75.00	11.84	0.3309	0.848
B15	23.51	61.94	14.55	27.63	60.53	11.84	0.7433	0.690

There were generally no significant relationships between gender and responses related to employee relations as all the p values are larger than 0.05, which is the maximum significance level.

7.5 Length of Service and Employee Relations

The Pearson chi-square comparison as to how the military personnel between the length of service viewed employee relations within the SA Army Fmn.

Table 8: The comparison between length of service and responses to employee relations

Item	0-10			11-20			21-42			Pearson chi2(6)	Pr
	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure		
B1	13.39	55.91	30.71	18.30	59.48	22.22	17.46	57.14	25.40	3.1806	0.528
B3	18.11	56.69	25.20	18.30	67.97	13.73	19.05	57.14	23.81	6.9457	0.139
B4	25.20	56.69	18.11	14.38	67.32	18.30	9.52	71.43	19.05	9.3262	0.053
B5	20.47	45.67	33.86	26.80	50.33	22.88	35.48	48.39	16.13	9.9501	0.041
B6	22.83	55.12	22.05	22.37	56.58	21.05	19.35	64.52	16.13	1.6732	0.796
B7	18.90	74.02	7.09	15.69	79.74	4.58	15.87	79.37	4.76	1.6725	0.796
B8	20.47	68.50	11.02	13.07	75.16	11.76	23.81	60.32	15.87	6.0410	0.196
B9	22.05	52.76	25.20	27.45	58.82	13.73	22.22	53.97	23.81	6.7135	0.152
B10	18.11	51.97	29.92	17.11	47.37	35.53	14.29	49.21	36.51	1.5008	0.826
B11	22.83	42.52	34.65	18.30	39.22	42.48	23.81	33.33	42.86	3.1514	0.533
B12	23.62	65.35	11.02	27.15	60.93	11.92	27.42	58.06	14.52	1.2399	0.871
B13	7.09	58.27	34.65	7.84	49.67	42.48	9.52	47.62	42.86	2.9175	0.572
B14	12.60	76.38	11.02	13.07	75.16	11.76	25.40	58.73	15.87	8.2629	0.082
B15	27.56	56.69	15.75	20.92	67.97	11.11	25.40	57.14	17.46	4.7411	0.315

Table 9: Chi-square significance - length of service and employee relations

Q No	Statement	Factor	Chi-Square Pr
B5	My employer maintains cordial relations with the employees	Consultation	0.041

There were generally no significant relationships between length of service and responses related to employee relations as all the p values are larger than 0.05, which is the maximum significance level. This; however, excludes question B5 ('My employer maintains cordial relations with the employees'), where it was discovered that there were significant relationships between employees with the length of service in their views on how they experienced employee relations based on the answer to question B5, as the p-value was 0.041, thus, smaller than 0.05.

7.6 Education and Employee Relations

The Pearson chi-square comparison to show the relationship between education and employee relations within the SA Army Fmn is presented in table 7.

Table 10: The comparison between educational qualifications and responses to employee relations

Item	Grade 12/Matric			National Certificate			National Diploma/Diploma			Bachelor's Degree/Advanced Diploma			Masters & Doctorate Degrees			Pearson chi2(6)	Pr
	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure		
B1	16.60	58.89	24.51	17.86	46.43	35.71	17.39	65.22	17.39	4.55	45.45	50.00	18.18	63.64	18.18	10.4159	0.237
B3	20.16	60.08	19.76	14.29	64.29	21.43	17.39	69.57	13.04	13.64	72.73	13.64	0.00	63.64	36.36	6.3243	0.611
B4	17.39	63.24	19.37	21.43	64.29	14.29	13.04	78.26	8.70	22.73	59.09	18.18	9.09	72.73	18.18	3.8245	0.873
B5	27.38	45.63	26.98	17.86	57.14	25.00	17.39	65.22	17.39	27.27	45.45	27.27	27.27	63.64	9.09	6.3176	0.612
B6	21.91	55.78	22.31	17.86	71.43	10.71	34.78	56.52	8.70	31.82	45.45	22.73	18.18	81.82	0.00	11.1663	0.192
B7	14.62	79.84	5.53	10.71	78.57	10.71	39.13	56.52	4.35	18.18	77.27	4.55	27.27	63.64	9.09	12.2544	0.140
B8	18.18	69.17	12.65	17.86	78.57	3.57	4.35	82.61	13.04	18.18	72.73	9.09	36.36	54.55	9.09	7.7202	0.461
B9	25.30	54.94	19.76	21.43	57.14	21.43	26.09	60.87	13.04	22.73	63.64	13.64	9.09	54.55	36.36	4.2171	0.837
B10	15.87	52.78	31.35	35.71	46.43	17.86	26.09	17.39	56.52	4.55	63.64	31.82	27.27	36.36	36.36	21.8776	0.005
B11	23.32	38.74	37.94	17.86	53.57	28.57	4.35	34.78	60.87	9.09	50.00	40.91	27.27	36.36	36.36	11.3899	0.181
B12	25.60	62.00	12.40	39.29	57.14	3.57	26.09	60.87	13.04	27.27	63.64	9.09	27.27	63.64	9.09	3.8156	0.873
B13	7.51	54.55	37.94	7.14	64.29	28.57	4.35	34.78	60.87	13.64	45.45	40.91	9.09	54.55	36.36	7.5537	0.478
B14	15.02	72.33	12.65	14.29	82.14	3.57	8.70	78.26	13.04	22.73	68.18	9.09	18.18	72.73	9.09	4.0591	0.852
B15	26.48	60.08	13.44	17.86	64.29	17.86	26.09	69.57	4.35	13.64	72.73	13.64	0.00	63.64	36.36	11.3864	0.181

Table11: Chi-square significance - respondents with educational qualifications and employee relations

Q No	Statement	Factor	Chi-Square Pr
B10	My employer creates a sense of belonging among the employees	Team building	0.005

There were generally no significant relationships between education qualifications and the responses related to employee relations as almost all p values are larger than 0.05, which is the maximum significance level. This; however, excludes question B10 ('My employer creates a sense of belonging among the employees'), where it was discovered that there were significant relationships between employees having different educational qualifications and their views on how they experienced employee relations, as the p-value for this question was 0.005, and this p-value is smaller than 0.05.

7.7 Ranks and employee relations

The Pearson chi-square comparison as to how the military personnel of different rank groups viewed employee relations within the SA Army Fmn is presented in table 9.

Table 12: The comparison between rank groups and responses to employee relations

Item	Non-Commissioned Officers			Warrant Officers			Officers			Pearson chi2(6)	Pr
	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure	Disagree	Agree	Not Sure		
B1	15.20	58.00	26.80	17.54	56.14	26.32	25.93	51.85	22.22	2.1189	0.714
B3	18.40	60.40	21.20	21.05	61.40	17.54	14.81	77.78	7.41	4.1011	0.392
B4	16.80	63.20	20.00	21.05	64.91	14.04	14.81	77.78	7.41	4.1365	0.388
B5	26.91	47.39	25.70	28.07	43.86	28.07	18.52	66.67	14.81	4.2433	0.374
B6	21.37	59.27	19.35	28.07	45.61	26.32	22.22	66.67	11.11	5.1186	0.275
B7	17.60	76.40	6.00	17.54	77.19	5.26	7.41	88.89	3.70	2.2737	0.686
B8	18.40	69.20	12.40	12.28	73.68	14.04	25.93	74.07	0.00	5.7306	0.220
B9	23.60	55.20	21.20	29.82	52.63	17.54	18.52	74.07	7.41	5.3569	0.253
B10	17.60	50.00	32.40	12.28	52.63	35.09	25.93	48.15	25.93	2.5638	0.633
B11	22.80	39.60	37.60	19.30	36.84	43.86	18.52	44.44	37.04	1.1697	0.883
B12	25.10	62.75	12.15	26.32	59.65	14.04	40.74	59.26	0.00	5.8661	0.209
B13	7.60	54.80	37.60	8.77	47.37	43.86	7.41	55.56	37.04	1.0767	0.898
B14	18.00	69.60	12.40	8.77	77.19	14.04	7.41	92.59	0.00	9.2887	0.054
B15	24.40	60.40	15.20	28.07	61.40	10.53	18.52	77.78	3.70	4.7145	0.318

There are generally no significant relationships between rank groups and the responses related to employee relations as all p values are larger than 0.05, which is the maximum significance level.

Table 13: Outcome of the hypotheses

Hypothesis	Accept/Reject
H ₁ : There is a significant relationship between employee relations and age in the South African Military.	Reject
H ₂ : There is a significant relationship between employee relations and former force in the South African Military.	Partly accepted
H ₃ : There is a significant relationship between employee relations and gender in the South African Military.	Reject
H ₄ : There is a significant relationship between employee relations and length of service in the South African Military.	Partially accepted
H ₅ : There is a significant relationship between employee relations and education in the South African Military.	Partially accepted
H ₆ : There is a significant relationship between employee relations and ranks in the South African Military.	Rejected

There was not a significant relationship between age and employee relations. This finding deviates from the findings of Khan *et al.* (2013), Baradicco (1991) and Kundi and Nawaz (2010). They found that age and employee relations relate to each other.

There were generally no significant relationships between the former force groups and responses related to employee relations as all the p values are larger than 0.05 but there were significant relationships between former force in the South African Military and the statements that relate to institutional policies and programmes, career graph, opportunities for employees' participation, internal communication, recognition of employees as organisational assets and a sense of bonding among the employees. Previous studies could not be found on the relationship between former force and employee relations.

There was no significant relationship between employee relations and gender in the South African Military. This finding deviates from the findings of Collins and Tisdell (2002), Moriarty and Honnery (2005) as well as Rydstedt, Johansson and Evans (1998). These authors all found that gender relates to employee relations.

There was not a significant relationship between employee relations and length of service in the South African Military except for one statement, namely 'My employer maintains cordial relations with the employees'. Butler *et al.* (2014), Schmidt *et al.* (1986) and Ng and Feldman (2013) mainly found that length of service relates to employee relations.

There was not a significant relationship between employee relations and education in the South African Military except for the statement: 'My employer creates a sense of belonging among the employees'. Wehmeyer (1996) found that education relates to employee relations.

There was not a significant relationship between employee relations and ranks in the South African Military. Previous research on this relationship could not be found.

The conclusion is made that the relationship between employee relations and former force, employee relations and length of service as well as employee relations and education are significant.

8 Imitations of the Study

A limitation of this study is that it was cross-sectional in nature and cannot be generalised to all units in the South African Military as well as other the military within other countries.

9 Recommendations

It is recommended that management should be made aware of the former force, length of service and education levels within the South African Military (SA Army Fmn units) so that employee relations are managed optimally and effectively. A plan of action to engage with the former force, staff from different education levels as well as staff from different years of service, may also add value to improving employee relations in this workplace.

10 Recommendations for Future Research

For future research, this same study can be duplicated in other divisions in the South African Military as well as in the Military units in other countries. Comparisons can then be made on the relations between demographic characteristics and employee relations within different units and in different countries. It is recommended that a qualitative study be conducted to obtain rich data from the staff within the South African Military about employee relations.

11 Managerial Implications

To summarise what the results mean in terms of actions, it is essential that management must develop interventions to manage employee relations by addressing the former force, length of service and education levels within the South African Military (SA Army Fmn units). These actions should be

included in their strategic plans. If management does not take action, employee relations can be negatively influenced. It is also important that management needs to develop proper institutional policies and programmes, attend to career graphs, create opportunities for employees' participation, develop effective internal communication, give recognition to employees as they are seen as organisational assets, and create a sense of bonding among the employees, maintain cordial relations with the employees, and create a sense of belonging among the employees.

12 Theoretical Implications

The social exchange theory can also be summarised as a process of negotiated exchanges between parties in which all parties involved in the exchange take responsibility for one another and strongly depend on each other. In addition, the interactions between parties are usually seen as mutually dependent and contingent on the actions made by the other persons (Almaaitah, Harada, Sakdan & Almaaitah, 2017).

This study's theory is underpinned by the fact that the positive or negative adaptation of the level of relationship between employers and employees can lead to the improvement or reduction in employee relations and ultimately demographic groups within the South African military. The social exchange theory is intended to explain "how" and "why" things happen in the way that they do in the social content.

The discussion is premised on the theory that employees are likely to continue the relationship with their employer/supervisor when they perceive that the relationship is worthwhile for them, and terminate the relationship when the costs are more than the rewards that they gain from the relationship. The focus of this theory as applied in this study is on employee relations as influenced by both job satisfaction and work engagement among different demographic groups in the military members.

This study was also underpinned by the theories and models of employee relations, job satisfaction and work engagement. The social exchange theory was integrated with the study's findings.

13 Conclusion

The purpose of this study was to determine if there is a significant relationship between employee relations and demographic characteristics in the South African Military. It was found the hypotheses about the relationship between employee relations, former force, length of service and education were partially accepted. It is, therefore, important that the management of the South African Military needs establish positive employee relationships to ensure that the staff from the former force, different levels of years of service and ranks get the necessary attention in order to ensure healthy employee relations

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Talent Retention of Academic Staff at a Selected TVET College

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Keywords

Compensation,
Institutional
satisfaction,
Management support,
Talent retention,
Retention strategies

Abstract

Talented academic staff is vital for the sustainability and performance excellence of TVET colleges. Yet, institutions of higher learning are struggling to retain crucial and competent staff in a highly competitive work environment. The main objective of this research is to determine the talent retention of academic staff at a TVET college in the Gauteng Province. A talent retention diagnostic tool was administered among a sample of academic staff (N=116). The results showed that more than half of the participants considered quitting their jobs. The participants further showed dissatisfaction with compensation, talent management and diversity management practices. Compensation, management and satisfaction with institutional practices contributed to the voluntary turnover intentions of employees. Satisfaction with institutional practices mediated the relationship between compensation and voluntary turnover. The existence of well-developed talent retention strategies in the college may help achieve a higher employee retention level. Management should thus endeavour to develop strategies that make it attractive for employees to remain in the organisation; this would result in satisfied employees inclined to remain in the organisation for extended periods. Recommendations are made.

1. Introduction

The importance of academic staff for the performance excellence of higher education cannot be overemphasised (Mzini, 2019). Higher education institutions require top academic staff to develop employable citizens by enhancing students' knowledge, abilities and overall performance (Bingwa & Ngibe, 2021). The challenge presented to many South African higher education institutions is to retain capable academics in a competitive workplace era and a war for talent (Ngwane, Khanyase & Gumbi, 2019; Odiro, 2017). Not only do higher education institutions compete with each other for scarce talent, but also with the private sector lure young, talented academics with more lucrative salaries in the private sector (Erasmus, Grobler & van Niekerk, 2015).

This research focuses on the voluntary turnover intentions of lecturers in a South African Technical Vocational Education and Training (TVET) institution. TVET institutions were established to make a meaningful contribution to the social development needs of the country (Rasool & Mahembe, 2014). More specifically, the South African government uses TVET colleges to enhance integrated education and training that will deliver the human resources to promote personal, social, civic and economic development in their country (Unesco, 2015). Consequently, TVET colleges contribute to the country's Vision 2030 by producing well-equipped artisans (Zulu, 2018).

Unfortunately, TVET colleges have been exposed to various challenges since the abolishment of the apartheid era. The further education sector experienced mergers, new governance structures,

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curriculum reforms, and changing stakeholder relationships and funding (Terblance & Bitzer, 2018). Mushemeza (2016) highlights multiple challenges facing higher education institutions on the African continent, such as a lack of financial stability, infrastructural demands, inadequate staff remuneration, high student enrollment with low staff-student ratio, and governance/management deficits. Consequently, the reputation of the TVET sector is tarnished as the education system is fragmented, resulting in various adverse outcomes (Badenhorst & Radile, 2018). Employers, for example, note that the TVET sector does not address the employability skills needs of the industry (Mesuwini & Bomani, 2021). In addition, poor employment brands diminish the chances of higher education to attract prospective talent and retain current employees.

Against this background, the main objective of this research was to determine the factors contributing to the voluntary turnover intentions of academics in selected Gauteng TVET colleges:

- What are the current voluntary turnover levels of TVET lecturers?
- What are TVET lecturers' perceptions of compensation and management support practices?
- What is the TVET lecturer's current level of satisfaction with institutional practices?
- Does institutional satisfaction moderate/ mediate the relationship between compensation, management support and voluntary turnover intentions of TVET lecturers?

The past two decades witnessed an escalation of research on talent retention in public South African higher education institutions (see Barkhuizen, Lesenyeho & Schutte, 2020; Saurombe & Barkhuizen, 2020; Saurombe & Barkhuizen, 2022). However, research on talent management and retention within the TVET sector remains scarce. According to Mmako (2016), academic staff leave TVET colleges for a well-paid positions in the private sector or are head-hunted by other higher education institutions. Kraak, Paterson and Boka (2016) observed that investments in the TVET sector would continue to ensure student enrollment and education opportunities. This will require a need for more TVET staff in future. The Covid-19 pandemic further resulted in anxiety and consternation among TVET academics in their attempts to navigate difficult personal and work conditions while also caring for the well-being of students (Papier, 2021). As such, TVET colleges must prepare staff and students for a future uncertain work environment. Research on factors contributing to the voluntary turnover of academic staff in TVET colleges is, therefore, of strategic importance as the sustainability of these institutions depends on key and competent staff (Oosthuizen, Spencer & Chigano, 2022).

2. Theory and hypotheses

The present study adopts the talent retention diagnostic framework developed by Theron, Barkhuizen and Du Plessis (2014). According to this framework, compensation and management support are the main predictors of voluntary staff turnover in the higher education sector. In addition, employee satisfaction with institutional practices can also contribute to voluntary staff turnover intentions. In what follows next, a brief description of the model's components is presented and its relevance to the TVET sector.

Voluntary turnover

Voluntary turnover occurs when employees leave an organisation of their choice (Mensele & Coetzee, 2014). The voluntary turnover rates among talented academics are alarmingly high, especially in developing countries where there is a need for skilled and competent staff. A study by Lesenyeho, Barkhuizen and Schutte (2018) found that more than half of the early career academics in their sample voluntarily quit their jobs. Similarly, Bwowe (2020) found that higher education academic staff showed high desirability to leave their present jobs due to better opportunities elsewhere. Wei (2015) highlights the importance of retaining skilled and talented employees as they will look for employment elsewhere. Keeping skilled personnel has many advantages, such as savings on new hires, the accumulation of experienced workers, devoted and engaged workers, improved human capital, and workers who are familiar with the organisational culture are a few of these (see Abazeed, 2018). These advantages contribute to institutions' sustained and improved business performance (Al Aina & Atan, 2020).

Factors contributing to academic staff turnover

Compensation, salary and recognition/ rewards: Compensation remains one of the most problematic people management practices in the higher education sector (Aliyu, Bello & Bello, 2018; Delanoy, 2022). Academic staff's poor salaries relative to their private sector counterparts are frequently cited (Lauder & Mayhew, 2020). According to Smit, Stanz, and Bussin (2015), organisations should create and practice compensation and reward plans pertinent to talent management. As such new and contemporary compensation models advocate for a more holistic approach to attracting and rewarding talented employees. Bussin, Mohamed-Padayachee and Serumaga-Zake (2019) found seven reward categories for Generation Y employees: leadership and environment, benefits, performance incentives, individual development, safe, secure working environment, work-life balance and resources and performance recognition. A study by Jeremiah (2018) showed that intrinsic rewards, such as the job itself and extrinsic rewards (i.e. pay and bonuses) play a significant role in the job satisfaction and morale of TVET educators. Henderson and Shaheen (2013) found that salary variations among academic staff members affected their level of satisfaction, which in turn affected their performance. Mabaso and Moloi (2016) found that the poor application of total rewards in TVET colleges resulted in a high academic staff turnover. Odiro (2017) found that dissatisfaction with pay is one of the primary reasons why academic staff would leave TVET colleges.

H 1: Compensation, salary and recognition/ rewards are significant predictors of voluntary staff turnover of academic staff at a TVET college

Management support: The importance of management support for retaining academic staff is well documented (see Hoque & Tshutsha, 2022; Lesenyeho, Barkhuizen & Schutte, 2018). In particular, the management or leadership mindset is essential to recognise the value of talented employees in the workplace (Saurombe, Barkhuizen, Schutte, 2017). Higher education management is responsible for creating a workplace culture that will enable academic staff performance (Boakye, Arpoh-Baah, Odoom, Afram, Addai et al., 2022). Research findings by Robertson and Frick (2018) revealed that the leadership and management demand created conflicting priorities for TVET leaders resulting in poor outcomes for the institution. A study by Mokgojwa (2019) showed that the absence of management vision and strategies poses a significant risk to attracting and retaining academic staff. In turn, poor leadership and management skills contribute to TVET lecturers experiencing a shortage of capabilities and competencies for effective lecturing (Badenhorst & Radile, 2018).

H 2: Management support is a significant predictor of voluntary staff turnover of academic staff at a TVET college

Institutional policy and practices: Academic staff have long been envied by counterparts for their flexibility, autonomy and other perks such as travelling for conferences. Unfortunately, the higher education landscape has not been exempted from rapid changes during the past two decades, threatening the very existence of the academic profession and the subsequent deterioration of the academic profession (Akalu, 2017). Sebola (2022) mentioned that government politicking disrupts university leadership from the required academic freedom to ensure a notable impact on human capital development in required fields. According to Mampane (2020), promotion practices in HEIs are very much characterised by power play and micro-politicking. Consequently, well-intended political reforms are challenged by unfairness, biases and inequality in academic promotions (Sadiq, Barnes, Price, Gumedze & Morrell, 2018). A study by Geldenhuis (2020) revealed that the development of an individual into a mature academic should not be forced or fast-tracked as it can have potential adverse results for both the individuals and institutions involved. Moreover, academic promotions and appointments should be made based on experience, publications and knowledge (see Geldenhuis, 2020). Theron et al. (2014) and Barkhuizen et al. (2020) found that academic staff dissatisfaction with promotion practices will contribute to their voluntary turnover intentions.

Other studies show that HEIs neglect to develop the appropriate policies for a new academic dispensation (Seeletse & Thabane, 2016). A central tenet of effective talent management involves the development of an inclusive culture where all employees are allowed to participate and feel that they

contribute to the institution (Meyers, 2020). Pieters, van Zyl and Nel (2020) found, among others, that lecturers included in decision-making and working in a pleasant work environment will be more committed to and willing to contribute to their institutions and less likely to quit. A study by Bhatti, Alshagawi, Zakariya and Juhari (2019) showed that higher education management should adopt diversity management practices that will enhance the psychological diversity climate and job satisfaction among multicultural employees. Barnes, Du Plessis and Frantz (2021, p. 1) identified an exhaustive list of practices in support of academic career progression, such as *"equity and inclusion, an ethic of care and collaboration, that are integrated with performance management, a career management system, a comprehensive induction and orientation programme, a collaborative structure, remuneration, as well as resources and support."*

The competency and skill development of TVET lecturers is a recurring theme in academic literature. However, there is some evidence to suggest that insufficient training is provided to TVET lecturers despite their low teaching skills (Manyau, 2015). The latter author further found that skills development is hampered by ineffective planning, lack of policies, consultation and the absence of skills auditing. Levitt (2020) observed that TVET colleges should be seen as sites for workplace learning for lecturers. Mabindisa (2021) argues that TVET colleges should invest in organisational development programmes to ensure that employees cope with new technologies. Shandu (2016) also highlighted the importance of mentorship programmes for novice TVET lecturers to prepare them for classroom management and pedagogical skills before starting their duties.

Theron, Barkhuizen, and Du Plessis (2014) discovered that academic staff members' contentment with institutional policies influences their satisfaction and retention at work. In the latter study, three factors matter: Satisfaction with general institution practices, human resource management practices and diversity management practices matter for job satisfaction. Therefore, institutional changes are required should institutions of higher learning wish to retain key academics (Saurombe et al., 2017). These include performance-based rewards, sending academics on courses to learn new skills, providing various benefits for academics, establishing a flexible and independent work environment and instilling a culture of loyalty towards the institution. Lesenyeho et al. (2018) found that a lack of training and development contributed significantly to the voluntary turnover intentions of early career academics.

H 3: Satisfaction with institutional practices is a significant predictor of voluntary staff turnover of academic staff at a TVET college

The intervening role of job satisfaction in the voluntary turnover relationship

Job satisfaction is one of workplace literature's most frequently researched attitudinal variables. According to Pieters et al. (2020), lecturers' job satisfaction needs to be assessed regularly to ensure satisfied and committed staff who will contribute to the institution's success. Research on the intervening role of job satisfaction (i.e. moderation/ mediation) in voluntary turnover intention relationships is inconclusive. Barkhuizen and Gumede found that job satisfaction moderated the relationship between talent management practices and voluntary turnover intentions of staff in a government institution. A study by Turgut, Bekmezci and Ateş (2017) showed that job satisfaction partially moderated the relationship between servant leadership and turnover intention. Han and Jekel (2011) found that job satisfaction mediates the relationship between leader-member exchange and turnover intentions. Froese, Peltokorpi, Varma and Hitotsuyanagi-Hansel (2018) found that merit-based rewards have a direct positive effect on job satisfaction and an indirect effect on voluntary turnover.

H 4: Satisfaction with institutional practices moderate/ mediate the relationship between compensation, management support and voluntary turnover intentions of academic staff at a TVET college

3. Research design

3.1 Research approach

A quantitative research approach was followed using a cross-section design. The latter design was deemed suitable to obtain data from surveys over a shorter time (Field, 2019). In addition, the cross-sectional design is ideally suited to test cause and effect relationships between variables.

3.2 Sampling

The target population for this research as lecturers, senior lecturers and heads of departments employed at a Gauteng TVET College. A total of 152 questionnaires were distributed to a randomly selected group of respondents. The researchers received 116 questionnaires, resulting in a 76,3% response rate. The sample was balanced in terms of gender, with females numbering 58 (50%) of the sample. A large proportion (37.1%), of the sample, was aged between 41 and 50 years. There were 92 permanently employed respondents (79.3%). Most respondents (98, or 84.5%) were African. Over half (57, or 49.1%) of the respondents were married. Regarding qualifications, 46 respondents (39.7%) had an Advanced Diploma/B Tech degree/postgraduate certificate/bachelor's degree, while 40 (34%) had an honours degree. Almost half the sample (55, or 47.4%) had been employed for less than 10 years and 93 (78.4%) of the respondents were lecturers.

3.3 Measuring instruments

The talent retention diagnostic tool of Theron et al. (2014) was used in this study. The questionnaire comprised four sections: Section A: demographic information; Section B: compensation and recognition; Section C: management support; and Section D: employee retention.

- Section A consisted of eight items on compensation and recognition. Respondents were asked to rate their satisfaction with remuneration (i.e. *My basic salary is adequate*) on a six-point Likert scale where 1 = strongly disagree, and 6 = strongly agree. Theron et al. (2014) obtained an $\alpha = 0.882$.
- Section B consisted of eight items. Respondents were asked to rate their relationships with their managers regarding aspects such as trust, communication support, conduct and appraisal (i.e. *My line manager has my best interests at heart*). Theron et al. (2014) obtained an $\alpha = 0.934$.
- Section C measured 17 items relating to institutional factors that can contribute to academic satisfaction (i.e. *Sufficient access to information I need to do my job*) on a six-point Likert scale where 1 = strongly disagree, and 6 = strongly agree. Theron et al. (2014) obtained acceptable internal consistencies ranging from an $\alpha = 0.783$ to an $\alpha = 0.923$.
- Section D consisted of four sub-sections designed to assess respondents' intention to remain with or leave the organisation. First, they were required to indicate whether they had been searching for alternative employment by selecting one of the eight job search-related questions (i.e. *Yes, applied for a promotion in the same institution*). Secondly, of 18 options provided, respondents could choose five that indicated why they might leave in the future. Examples included 'unhappy about career development opportunities', 'would leave for a promotion', 'would leave to study further', 'would leave if my spouse was to be transferred and 'would leave for family responsibilities.
- The final section focused on the respondents' intention to leave the organisation and consisted of three items, with responses measured on a six-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Cohen's (1993) three-item measure was used to determine the voluntary turnover intentions of the respondents (i.e. *I think a lot about leaving the organisation*). Theron et al. (2014) obtained an acceptable internal consistency of $\alpha = 0.914$.

3.4 Research procedure

The primary researcher approached the management of the TVET college to obtain permission to do the study. The purpose of the study was clearly explained as well as the nature and rights of the study participants. Careful consideration was given to the Department of higher education and training requirements for doing research in the TVET colleges. Ethical clearance was obtained from Southern

Business School prior to the commencement of the study. The questionnaires were distributed to participants by the campus managers. Respondents were informed that their participation was voluntary and that they could withdraw at any time. The primary research data were collected using self-administered questionnaires that were placed in sealed boxes once completed to ensure confidentiality and anonymity.

3.5 Statistical analyses

The data was analysed using the Statistical Software Programme for Social Science (IBM, 2021). Descriptive statistics (i.e. frequencies, means, skewness and kurtosis) were applied. Exploratory factor analyses were used to determine the factor structure of the measuring instrument. The guideline of Hair, Black, Babin and Anderson (2010) for Measure of sampling adequacy (MSA) $\geq 0,60$ were used to determine the adequacy of the sample for factor analyses. The guidelines of Cohen (1988) were used to assess the reliability of the factors, namely $\alpha \geq 0,70$. Pearson correlation analyses were used to determine the relationship between the variables. Cohen's (1988) guidelines were also used to determine the magnitude of the relationships between the variables: $0 \geq r \leq 0,29$ = statistically significant; $0,30 \geq r \leq 0,49$ = practically significant, medium effect; $r \geq 0,50$ = practically significant, medium effect. Multiple regression analyses were applied to determine the moderation/ mediation effect between the variables in the study. The researchers followed the guidelines of Baron and Kenny (1986) to determine the mediating effect between variables. Four steps are involved in the moderation: First, the predictor variable (i.e. compensation, management support) of voluntary turnover is added. Second, the moderator variable (i.e. institutional satisfaction) is added. Third, both the predictor and moderator variables are added. The final step involves adding the interaction variable (i.e. multiplying the predictor value with the moderation variable) together with the predictor and moderator variable. The result of the interaction variable must be significant for moderation to occur. Based on the recommendations of Baron and Kenny (1986), mediation analyses are followed when moderation yields a non-significant result. Three steps are involved in mediation (Baron & Kenny, 1986): (1) Testing the predictive relationship between predictor and dependent variable; (2) Testing the predictive relationship between the moderator and dependent variable; (3) Testing the predictive relationships between the predictor, mediator and dependent variable. For complete mediation to occur, the relationships between the variables for the first three steps must be significant, and the independent variable should not affect the dependent variable after mediation.

4. Results

The results of the measuring instrument are reported in the section below. Firstly, a measure of sample adequacy (MSA) was conducted to determine whether the sample size was adequate for fact analysis. Secondly, exploratory factor analysis was used to determine the factor structure of the measuring instruments, followed by reliability analysis.

4.1 Compensation

The MSA showed an acceptable value of 0,89 for factor analysis (Hair et al., 2010). A subsequent exploratory factor analysis revealed one underlying factor for the Compensation scale with a total variance of 64,16%. This factor, labelled compensation, showed a reliability of $\alpha = 0,92$. The descriptive statistics of the measurement and the item analysis are reflected in Table 1.

Table 1. Descriptive statistics for Compensation

	Mean	Standard Deviation	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	KMO	Variance Explained	α
Compensation	3,10	1,23							0,89	64,16	0,92
Basic salary good	3,15	1,539	19	31	12	31	14	9			
Medical aid offered	3,35	1,522	12	31	18	26	17	12			
Pension fund	3,62	1,478	9	23	19	31	20	14			
Praised for my work	2,59	1,527	33	36	18	12	9	8			
I am fairly compensated for the work I do	2,92	1,544	24	31	21	19	12	9			
Bonus structure is fair	3,50	1,574	14	26	14	22	30	10			
Incentives make job worthwhile	2,62	1,443	27	39	23	13	6	8			
Bonus structure reflects my contribution	3,04	1,654	25	31	14	15	22	9			

Source: Authors' own

Table 1 reveals that respondents experienced average levels of satisfaction with compensation. However, it is evident that lecturers are not praised for their work (below the mean at 2,59), were not fairly compensated for the work they were doing (2,92) and they had few incentives to make their jobs worthwhile (2,62).

Management support

The KMO measure showed an acceptable value of 0,884 for factor analysis (Hair et al., 2010). A subsequent exploratory factor analysis revealed one underlying factor for the management support scale with a total variance of 78,478%. The factor, labelled management support, showed strong reliability of $\alpha = 0,943$. The descriptive statistics and the item analysis are reported in Table 2.

Table 2 Descriptive statistics for Management support

	Mean	Standard Deviation	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	KMO	Variance Explained	α
Management support	3,64	1,45							0,884	78,478	0,943
Trust line manager	3,81	1,571	13	16	13	28	30	16			
Communicate easily	4,12	1,594	9	18	8	20	37	24			
Line manager (LM) has my best interests at heart	3,87	1,666	13	16	17	22	23	25			
LM supports my development	3,47	1,612	17	20	20	25	19	15			
LM conducts regular appraisals	3,23	1,649	24	20	19	23	18	12			
LM conducts fair appraisals	3,32	1,692	22	23	16	20	21	14			

Source: Authors' own

Lecturing staff seemed to communicate easily with their line managers (3,81 above the mean of 3,64) and had trust in their managers (3,81). Nevertheless, the results indicated that the line managers needed to conduct regular (3,23) and fair appraisals.

Satisfaction with institutional practices

The KMO measure showed an acceptable value of 0,936 for factor analysis (Hair et al., 2010). An exploratory factor analysis indicated one underlying factor for the Satisfaction with institutional practices scale, with a total variance of 76,039%. This factor, labelled institutional satisfaction, showed excellent reliability of $\alpha = 0,976$. The descriptive statistics of the measurement and item analysis are reported in Table 3.

Table 3 Descriptive statistics of Satisfaction with Institutional Practices

	Mean	Standard Deviation	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	KMO	Variance Explained	α
Institutional satisfaction	2,69	1,09						0,936	76,039	0,976
Sufficient access to information	2,96	1,197	18	18	44	23	13			
Support from HR	2,73	1,328	26	29	25	22	14			
Changes and restructuring in institution	2,73	1,197	23	21	48	12	12			
Opportunity to engage in community service projects	2,41	1,202	29	40	27	10	10			
Affirmative action	2,57	1,246	25	38	27	14	12			
Sufficient cultural diversity in the institution	2,92	1,238	21	20	32	33	10			
Sufficient respect for my culture	3,09	1,248	16	22	29	34	15			
Institutional leadership	2,67	1,337	33	19	27	27	10			
Institutional values	2,84	1,292	27	16	32	31	10			
Institutional strategy	2,76	1,276	29	14	39	24	10			
Communication from leadership	2,67	1,221	27	21	40	19	9			
Talent management policies in the institution	2,57	1,273	31	25	34	15	11			
Mentorship for academic staff	2,35	1,218	33	39	23	12	9			
Funding to attend conferences	2,33	1,263	37	35	24	9	11			

Source: Authors' own

The results in Table 3 indicate that satisfaction with institutional practices was low. This is evident from outliers such as staff funding to attend conferences (2,33), mentorship (2,55), talent management policies (2,57), opportunities to engage in community service (2,41) and affirmative action (2,57). All these are below the mean value for satisfaction of 2,69.

Voluntary turnover

The KMO measure reflected an acceptable value of 0,757 for factor analysis (Hair et al., 2010). Exploratory factor analysis revealed one underlying factor for the Voluntary turnover scale with a total variance of 87,166%. This factor, voluntary turnover, had reliability level of $\alpha = 0,926$. The descriptive statistics of the measurement and item analysis results are reported in the table below.

Table 4 Descriptive statistics for Voluntary Turnover Intentions

	Mean	Standard Deviation	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	KMO	Variance Explained	α
Voluntary turnover	3,49	1,73							0,757	87,166	0,926
I think a lot about leaving the institution	3,53	1,79	19	23	16	20	12	26			
I am currently seeking employment outside the institution	3,29	1,85	25	27	14	11	17	22			
When possible, I will leave the institution	3,66	1,91	22	20	12	14	17	31			

Source: Authors' own

Respondents who indicated that they would leave the college if there were a possibility (mean of 3,66) outnumbered those who were content to remain. This suggests that voluntary turnover would be higher if lecturers were allowed to go elsewhere. The results of voluntary turnover intentions were further explored by focusing on factors influencing employees to leave the institution. The table below shows the extent to which employees were seeking other employment.

Table 5 Extent to which employees are seeking another job

Items	Frequency	Percentage	Cumulative Percentage
Yes, in the same institution in a different section	15	12,9	13,0
Yes, applied for a promotion in the same institution	21	18,1	31,3
Yes, at another academic institution	28	24,1	55,7
Yes, in another organisation(not in academia)	9	7,8	63,5
Yes, but only placed my CV on the web	4	3,4	67,0
No, but I have been headhunted by another organisation	2	1,7	68,7
No	36	31,0	100,0
Total	115	99,1	

Source: Authors' own

Table 5 indicates that more than half of the respondents (67,0%) actively sought employment elsewhere, while others sought promotion within the institution (31.3%).

The results from the analysis of reasons for employees seeking alternative employment are reported in Table 6 below.

Table 6 Main reasons why employees want to leave the institution

Items	Frequency	Percentage
Unhappy with financial compensation	26	22,2
Unhappy with company policies	18	15,5
Unhappy with career development opportunities	25	21,6
Unhappy with training opportunities	4	3,4
Unhappy with the job itself	3	2,6
Unhappy with the people I have to work with	2	1,7
Would leave for a promotion	19	16,4
Would leave for better pay in another company	3	2,6
Would leave for a job closer to home	2	1,7
Would leave for a career change	2	1,7
Would leave to start my own business	6	5,2
Retirement	6	5,2
Total	116	100,0

Source: Authors' own

This table indicates that lecturers would leave because they were unhappy with their financial compensation (22,2%), with the institution's policies (15.5%) and with career development opportunities (21,6%) and if they could get a promotion elsewhere (16,4%).

Testing the Hypotheses

This section reports on the results of the hypotheses. A combination of Pearson correlation analysis and multiple regression analysis was applied. The results of the Pearson correlation analysis are presented in Table 7.

Table 7 Pearson correlation analysis

	Compensation	Management Support	Institutional Satisfaction
Compensation	1		
Management Support	.653** 0,000	1	
Institutional Satisfaction	.678** 0,000	.706** 0,000	
Voluntary Turnover	-.266** 0,004	-0,126 0,178	-.344** 0,000

Source: Authors' own

These results show that compensation and management were significantly related to institutional satisfaction. In addition, compensation and institutional satisfaction (medium effect) were significantly related to voluntary turnover. No significant relationship existed between management support and voluntary turnover. The above results confirm Hypotheses 1 and 3 that Compensation and Institutional satisfaction is significantly related to voluntary turnover intentions. The results reject Hypothesis 2 that management support is a significant predictor of voluntary turnover intentions.

The results of the mediation analysis are provided in Table 8. Initial multiple regression analyses revealed a non-significant results for the moderation analyses between compensation, management support and voluntary turnover intentions. In line with the guidelines of Baron and Kenny (1986), the researchers opted for mediation analyses.

Table 8 Mediation analysis of compensation, institutional satisfaction and voluntary turnover

	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	R	R ²	ΔR ²
	B	Std. Error	Beta					
Step 1: Compensation and voluntary turnover								
						.266 ^a	0,071	0,063
(Constant)	4,655	0,423		11,010	0,000			
Compensation	-0,375	0,127	-0,266	-2,952	0,004			
Step 2: Institutional Satisfaction and voluntary turnover intentions								
						.344 ^a	0,118	0,111
(Constant)	4,956	0,403		12,298	0,000			
Institutional satisfaction	-0,544	0,139	-0,344	-3,913	0,000			
Step 3: Compensation, institutional satisfaction and voluntary turnover								
						.347 ^a	0,120	0,105
(Constant)	5,047	0,441		11,432	0,000			
Compensation	-0,086	0,169	-0,061	-0,512	0,610			
Institutional Satisfaction	-0,478	0,190	-0,302	-2,521	0,013			

Source: Authors' own

The final step (3) in the mediation analysis showed that compensation and institutional satisfaction together explained 12% of the variance in voluntary turnover. A slight difference was observed between the effect on voluntary turnover in Step 3 and in Step 2. The effect was non-significant for the predictor variable, indicating that institutional satisfaction mediated the relationship between compensation and voluntary turnover.

Mediation: Management support, Institutional Satisfaction and Voluntary turnover

The results of the mediation analysis of compensation, institutional satisfaction and voluntary turnover are reflected in Table 9 below

Table 9: Mediation analysis of management support, institutional satisfaction and voluntary turnover

	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	R	R ²	ΔR ²
	B	Std. Error	Beta					
Step 1: Management support and voluntary turnover								
						.126 ^a	0,016	0,007
(Constant)	4,040	0,433		9,329	0,000			
Management support	-0,150	0,111	-0,126	-1,356	0,178			
Step 2: Institutional satisfaction and voluntary turnover intentions								
						.344 ^a	0,118	0,111
(Constant)	4,956	0,403		12,298	0,000			
Institutional satisfaction	-0,544	0,139	-0,344	-3,913	0,000			
Step 3: Management support, institutional satisfaction and voluntary turnover								
						.382 ^a	0,146	0,131
(Constant)	4,645	0,431		10,784	0,000			
Compensation	0,278	0,146	0,234	1,902	0,060			
Institutional Satisfaction	-0,805	0,194	-0,509	-4,146	0,000			

Source: Authors' own

The final step (3) in the mediation analysis showed that management support and institutional satisfaction together explained 14,6% of the variance in voluntary turnover. A slight difference was observed between the effect on voluntary turnover in Step 3 and Step 2. However, the effect was non-significant for the predictor variable, indicating that institutional satisfaction mediated the relationship between management support and voluntary turnover.

Based on the above results, Hypothesis 4 is partially accepted that institutional satisfaction mediated the relationship between compensation, management support and voluntary turnover intentions.

5. Discussion

The main objective of this research was to determine the factors contributing to the voluntary turnover intentions of academic staff at a TVET college in the Gauteng Province. The results showed that the participants were dissatisfied with their compensation and rewards. The participants felt they are not praised for their work and do not receive incentives that make their job worthwhile. In addition, the participants also felt that they were not fairly compensated for the work that they were doing. The results emphasise the problematic nature of adequately rewarding academic staff and their perceived poor salaries relative to counterparts in the private sector (Aliyu et al., 2022; Delanoy, 2022 & Lauder & Mayhew, 2020). As with previous studies, the results of this study also showed that dissatisfaction with financial compensation enhances academic staff's inclination to quit their jobs voluntarily at TVET colleges (see Mabaso & Moloji, 2016; Odiro, 2017).

In this study, academic staff indicated they could communicate easily with their managers. This is an important finding as management-employee dialogue creates inclusive workplace cultures and pleasant work environments (see Pieters et al., 2020). The participants, however, felt that management neglected to conduct regular and fair performance appraisals. These results are concerning as employees perform best when management recognises their value and recognise them as such (see

Boakye et al., 2022; Saurombe et al., 2017). As with previous research, poor management skills contribute to the risk of retaining key academic staff for TVET colleges (Mokgojwa, 2019).

The participants appeared to be dissatisfied with most of the institutional practices. This is evident from outliers such as staff funding to attend conferences, mentorship, talent management policies, opportunities to engage in community service and affirmative action. Opportunities to attend conferences are essential for the career development of academic staff. Much has been written about poor career development opportunities for TVET staff (Manyau, 2015). The lack of career development and promotion opportunities were some of the main reasons academic staff contemplated leaving their jobs in this study. TVET colleges can benefit from adopting a learning organisation style supported by mentorship programmes where academic staff are given opportunities to enhance their skills and progress in their careers (see Levitt, 2020; Mabindisa, 2021; Shandu, 2016). The study results also highlight the need to create healthy diversity management and inclusivity practices that foster fair, unbiased and equality in academic promotions (see Bhatti et al., 2019; Geldenhuys, 2020; Sadiq et al., 2018). In support to previous studies, dissatisfaction with institutional practices and policies contributed significantly to higher voluntary academic staff turnover intentions (Barkhuizen, 2020; Theron et al., 2014).

Considering the above results, it is not surprising that satisfaction with institutional practices mediated the relationship between compensation, management support and voluntary turnover intentions of academic staff. The results of this study, in general, showed that participants perceived poor compensation and a low level of management support. In addition, the voluntary turnover intention of academic staff in this study was high. About 60% of the staff considered quitting their jobs voluntarily, confirming the results of Lesenyeho et al. (2018), who found high levels of voluntary turnover intentions among academic staff. Therefore, it is plausible that poor compensation and management support resulted in low satisfaction of academic staff with institution practices, which enhanced voluntary staff turnover intentions. The results are in line with Froese et al. (2018) and Han and Jekel (2011), who found job satisfaction as a mediator perceived effectiveness of leader-member exchange, rewards and voluntary turnover intentions.

6. Management implications

The study's results highlight the importance of having sound compensation and rewards practices to retain key employees. Employees need to be recognised for their efforts and performance. Compensation in this study was the main reason employees would consider leaving their jobs at the TVET college. The study results also highlight the need for management to apply more fair and transparent performance management practices. Performance management is an essential enabler for employee promotion. The participants in this study highlighted a lack of promotion opportunities as the second most important reason they would quit the institution. Managers also play an essential role in establishing workplace culture. In this study, the participants were particularly dissatisfied with talent and diversity management practices. Higher education management, therefore, needs to prioritise key individuals' talent management to prevent unnecessary turnover.

7. Limitations and recommendations

As with any research, this study also had some limitations. First, the study was cross-sectional, with data collected at one point. The study is therefore limited in making cause and effect inferences over the longer term. The participants in this study were limited to one TVET college in the Gauteng province. Consequently, the results cannot be generalised to other TVET colleges. The sample size should be expanded for future research, and more TVET colleges should be used to generalise findings. Future research can benefit from including TVET management, human resources and students to obtain a more holistic understanding of talent retention in TVET colleges. Finally, future research can benefit from following a mixed-method approach to explaining the results in more detail.

8. Conclusion

TVET colleges play an essential role in educating South African citizens, contributing to the sustainable goals the country has set itself to achieve. Yet, it appears that talent management of TVET

lecturers is still in the infancy stage, putting these institutions at significant risk of losing scarce skills. Therefore, the management of TVET colleges is encouraged to take note of the findings and take proactive action to prevent unnecessary lecturer turnover, poor compensation and institutional practices.

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The Great Resignation and Talent Management: The Case of the UK and South Africa

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Keywords

Great Resignation;
Talent Management;
labour turnover;
retention; South Africa,
United Kingdom

Abstract

This paper examines the impact of a current global organisational crisis – the Great Resignation – and its implications for the Talent Management (TM) strategies of firms. Recognising the criticality of TM and its contextual idiosyncrasies, we draw on institutional theory to explain the different contextual factors that are at play. Next, through utilising a scoping review, we describe the global Great Resignation phenomenon before exploring how it is manifesting within the UK and South African contexts. We then enter into a discussion that brings TM theory to bear on contextual challenges arising through the Great Resignation and argue that TM practices should be authentically integrated into organisations in South Africa and the UK. In closing, we suggest practical recommendations for management to mitigate or resolve the adverse effects of the Great Resignation, followed by a future research agenda. The contribution of this paper is two-fold in that we (i) describe TM and its practices within two socioeconomic contexts, and (ii) offer practical, contextual recommendations for firms to resolve a current global challenge through inclusive TM practices.

1. Introduction

This paper examines the impact of a current global organisational crisis. Employment crises are not unusual for organisations. The financial crises of the late 2000s, for example, and its subsequent effects caused untold harm to a multitude of organisations with a loss of jobs for many employees. The current global state, however, is an unprecedented one for most people born after the two world wars. The ‘Great Resignation’ – a term coined by US professor Anthony Klotz (Cohen, 2021) – is presenting a supply-side crisis for organisations. Although voluntary turnover is always an organisational reality and it is doubtful that the departure of a few employees will cause severe damage to an organisation, the Great Resignation – also known as the Big Quit (Curtis, 2021) and the Great Attrition (De Smet et al., 2021) – describes the large numbers of employees that have been leaving their organisations voluntarily since early 2021.

Talent Management (TM) typically encompasses the key organisational strategies and practices to attract, retain, develop, and motivate critical or high-potential employees (or those in strategic roles), with a focus on sustaining competitive advantage in a turbulent marketplace (Meyers & van Woerkom, 2014). As a component of human resource management (HRM), TM focuses primarily on the segmentation of the workforce, identifying and developing those who add differential value to the organisation (Huselid & Becker, 2011). Thus, TM practices focus on the development and ‘future-proofing’ of an organisation's human capital pool (Tatoglu et al., 2016). Any failure to do so is levied towards an organisation's focus on shareholder return (Collings, 2014).

Yet, institutional environments and their structures pose problems for the organisations to implement of TM and experience of TM practices. Institutional theory suggests that pressures are exerted on firms, not only by market forces, but also by a range of stakeholders, structures, and contexts that

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This work was supported by the National Research Foundation (Grant Number 132278).

shape subsequent approaches to human capital development (Larsson, 2018; Thunnissen, 2016; Thunnissen et al., 2013; Bell, 2011). Structural contexts include political, economic, and social environments that shape the choice of organisational agents through the provision of incentives and disincentives, thus constraining or encouraging certain practices and courses of action within organisations (Bell, 2011). These are then interpreted through the lens of the values and culture of the organisation.

The ‘Great Resignation’ is currently presenting a new institutional context for organisations in the form of a supply-side crisis for organisations. Although voluntary turnover is always an organisational reality and it is doubtful that the departure of a few employees will cause severe damage to an organisation, the Great Resignation describes the large numbers of employees that have been leaving their organisations voluntarily since early 2021. Thus, viewed through an institutional lens, a global phenomenon like the Great Resignation, reflects how large, external political and economic forces shape the employment decisions of individuals within firms.

This paper is concerned with the institution of employment, understanding the forces causing so many to leave their organisations, and using TM to mitigate the impact of the Great Resignation on organisations. The objectives of this paper are therefore to analyse the challenges and impacts of the Great Resignation in two different contexts (South Africa and the UK), to examine the Great Resignation through the lens of TM, and to present an argument for integrated and authentic TM practices in response to those challenges.

1.1. Institutional theory and contextual idiosyncrasies

Institutional theory has been a vital tool for analysing the employment relationship for more than 30 years. Morgan and Hauptmeier (2014) examine four key variants of institutionalism, all of which are applicable to the institution of employment: rational choice, historical institutionalism, sociological institutionalism, and constructivist institutionalism.

Rational choice suggests that institutions consist of rational agents that seek to “maximize utility” under the conditions of bounded rationality, complexity, and uncertainty (Morgan & Hauptmeier, 2014, p. 191). Historical institutionalism (HI) places rational choice within an historical context and suggests that agents’ preferences are shaped by institutions (i.e. their choices are path dependent and may prevail even in the face of institutional breakdown). In sociological institutionalism, historical processes of change are not considered; instead, actors seek legitimacy and learn and develop norms and cognitive schema. These schemata subsequently shape discourses that become embedded in organisational routines, rules, and scripts. Constructivist institutionalism eschews the notion of an external institutional reality and instead seeks a more actor-centric approach that emphasises the role of ideas and how they change and become institutionalised. This approach suggests that an institutional ‘reality’ is that perceived by the observer.

Bell (2011) suggests that while more actor-centric constructivist approaches may have increasing appeal, the approach focusses too much on the notion that institutions are what the actor perceives them to be, rendering the institutions themselves as insignificant. But that is not to say that agency does not have a role to play in the historical development of an institution and its legacy. Actors are restrained and empowered by their institutional environments in that they are products of an institution and they have been socialised within these through a process of navigation and negotiation (Larsson, 2018). Institutions are not ahistorical, nor are they based on rational choices; they are prone to both endogenous and exogenous pressures, but any change cannot be solely attributed to actors and their beliefs and perceptions (Morgan & Hauptmeier, 2014; Bell, 2011). Thus, with regard to employment in organisations, institutional context is consequential for the decisions employees and organisations make around TM (Gallardo-Gallardo et al., 2019).

1.2. Employment in South Africa

A consideration of HI is particularly pertinent to the discussion of TM in South Africa. While South Africa now represents one of two countries in Sub-Saharan Africa (the other is Ghana) that has a

comprehensive democratic regime (Maree, 2014), between 1948 and the early 1990s the apartheid regime affected people of different races differently. Prior to the 1970s, Blacks were excluded from any employment relations systems, and it was through the advent of a powerful Black Trade Union movement that workplace rights were eventually extended to all (Maree, 2014). Yet during apartheid, Black access to skilled work was prohibited by law and such jobs were reserved for Whites. During this time, Whites were paid retention focused salaries – increasing wage distortions that continued post-apartheid.

Thus, diverse generational outlooks persist between Black and White South Africans and these impact the workplace. The Apartheid Generation (1938-1960) has no national memory prior to the institutionalisation of apartheid with its legal machinery enforcing racial segregation. While all races in this generation were exposed to protest action and its ramifications, Black South Africans were more aware of the situation (Deal et al., 2010). The material conditions under which the various racial groups existed shaped their outlook on life and consequently racialised relationships in the workplace. The Struggle Generation (1961-1980), a period characterised by countrywide protests included the oppressed, who participated in some form of resistance, and many of the white population who were silent and often complicit in actions against the Black majority. The Transition Generation (1981-1993) entered adolescence in the post-democratic period retaining memory of the apartheid regime and experienced high levels of unemployment and similar levels of economic and physical insecurity as prior generations (Deal et al., 2010). The ‘Born Free’ generation (1994 and 2000) have no memory of restrictive apartheid structures and live and work without any official limitations (Mattes, 2011). While this generation is defined largely as Black, it is believed that this generation has more in common with each other than previous generations and are more culturally integrated (Malila, 2015).

Despite the repeal of prohibitive apartheid-era laws and the introduction of the Employment Equality Act (1998), the implementation of legislation must be supported by positive, progressive employment practices that introduce real change in organisations (Booyesen & Nkomo, 2010). The work of Nkomo et al. (2016) suggests that, despite the wide-ranging legislation research, public debate, and statistics, progress towards employment equity has been incremental and slow.

Gender equality also remains a key concern as women make up 50.5% of the workforce and only constitute 32.4% of top management in South African organisations with most of these roles held in the public sector (StatsSA, 2022). Gender discrimination within certain professions is rife (Bowen et al., 2013). Barkhuizen et al.’s (2012) research in the manufacturing sector showed limited career progression for South African women, including a lack of equity in promotion, training, and pay. As Thusi (2014) argued, despite the active commitment of many South African organisations to encourage the career advancement of women, these strategies lack clear measurement and monitoring frameworks and render their impact unknown.

Although the country has one of the highest rates of education spend at around 6.2% of GDP (World Bank, 2022), South Africa continues to experience an oversupply of unskilled labour and a shortage of specialist skills, with current unemployment reaching 34.5% (StatsSA, 2022). The education system itself is at the root of many problems as it struggles to overcome years of apartheid neglect and dysfunction due to under-funding and poorly trained teachers, particularly in the racially marginalised sections of the community (Mattes, 2011). The ineffectiveness of national training facilities and Sector Education and Training Authorities (SETAs) has exacerbated the national skills shortage (McKechnie & Bridgens, 2008).

Horwitz (2013) suggests that impoverished human resource (HR) practices and limited firm spending on training have led to the misapplication of equity legislation, leading to a series of unintended consequences. This suggests that the range of post-apartheid equality and training measures have a long way to go in redressing the problems caused by apartheid. Thus, HR policies are not enacted in a value-free arena and the historical legacies of apartheid support the ‘stickiness’ that is at the core of historical institutionalism posing fundamental questions for TM, how it is conceptualised, and, more importantly, how it is experienced.

1.3. Employment in the UK

The UK is classified as a liberal market economy (LME) (Fleckenstein & Lee, 2018) – a market-based regime in which organisations are able to act unfettered by state regulation. Employment protections are low, wage inequality is high, job tenure is low, and, as a consequence, employers focus on induction training and seek recruits via an external labour market (Jackson & Kirsch, 2014). Government policy in the UK over the past 40 years has favoured de-regulation, flexibility and privatisation and has bolstered competition in high-tech industries and in low value-added areas of service sector activity (Payne & Keep, 2011). The weak regulation has impacted the nature of HRM practice, including the provision of training and development. Payne and Keep (2011) suggest that the UK skills policy over the last 30 years has been to develop the supply of skills in order to boost productivity, competitive edge, and living standards. Yet, policy has focused on accredited training and done little to improve the promotion prospects of lower-skilled workers (Corradini et al., 2022). Goergen et al. (2009) found that the LME paradigm is indeed consistent with practice: the UK has the lowest training durations, placing a basic emphasis on generic and basic administration skills, weak vocational training provision, and low job tenure.

UK productivity has fallen behind that of other developed economies and it consistently has the lowest rate of total investment by businesses and government of any major economy (Morris et al., 2020; Coutts & Gudgin, 2016). The UK's break from the European Union heralds more fears of a low-skill and low-value economy (Burt, 2017) and, through a growing reliance on a migrant workforce, a pending exodus of skilled labour and a growing mismatch between the skill of the workforce and those required by employers (CIPD, 2017). Further, the Chartered Institute of Personnel and Development (CIPD) (2016) reports that one-third of UK employees believe they are over-qualified for their jobs and only 44% are satisfied with the career progression and training opportunities. Those with university degrees are more likely to be dissatisfied with their career progression. Thus, the emphasis of governments has been to focus on the supply of skills rather than taking a more systemic approach that considers the demand for skill and the creation of 'good' jobs (Corradini et al., 2022; Keep, 2016; Payne & Keep, 2011).

Employer issues are further complicated by the generational differences in the workplace, with older employees having much better skills and skill retention than the younger generation, even though more of the current generation have been educated to graduate level (CIPD, 2017). This increases fear of greater skill deficits once older employees retire – a fear which has been allayed in part by the removal of the Default Retirement Age in October 2011, offering security of employment to older workers for the first time. Prior to this, there was substantial evidence of age discrimination (Wood et al., 2008) and governments followed a voluntarist approach, relying on business leaders to make a business case against age discrimination (Taylor, 2004). The EU Equal Treatment Directive 2000 forced the government to legislate against the use of age discrimination in 2006, but in line with LME characteristics, this was again a light touch (Miuller-Camen et al., 2011). Until October 2011, employers could force their employees to retire at the age of 65, whereas the decision to retire an employee must now be justified on a case-by-case basis. Thus, a key challenge for UK organisations is to create new support mechanisms to support an ageing workforce profile.

As with age discrimination, TM and gender remain a concern in the UK and while there has been much greater representation of women on boards – rising from 12.5% in 2010 to 26% in 2015, the government is aware that using a voluntarist approach might lead to the UK lagging behind other EU countries that have introduced quota systems (Davies Review, 2015). Indeed, only 60% of organisations in the UK have a diversity strategy (CIPD, 2015b). However, chairmen of the FTSE 350 companies understand the pressure to conform to other organisations and create strong employer brands (CIPD, 2015b; Miuller-Camen et al., 2011). This highlights the tendency of companies to respond to institutional pressures by increasing search activities to widen the female talent pool and instituting standard voluntary codes of conduct focused on female talent development (Davies Review, 2015). Elsewhere, however, in 67% of cases, the proportion of women in the workforce tends to decline with seniority (CIPD, 2015a).

2. Problem Investigated

The paper aims to provide insight into how TM practices may address some of the consequences and impact of the Great Resignation in the UK and South Africa while acknowledging contextual realities between a developed and developing country. Such insights are important as skills shortages have become more critical in both contexts. The contribution of this paper is two-fold in that we (i) describe TM and its practices within two socioeconomic contexts, and (ii) offer practical, contextual recommendations for firms to resolve a current global challenge through inclusive TM practices.

3. Research Objectives

Our research objectives are three-fold:

- to analyse the impact of the Great Resignation in two different contexts: South Africa and the UK;
- to examine the impacts of the Great Resignation through a Talent Management lens, and;
- to present our argument for inclusive Talent Management practices.

4. Research Methodology

The study utilised a scoping review, a relatively new approach to synthesise evidence. A scoping review, although similar to, differs from a systematic review in that it provides a ‘snapshot’ of a specific area (Munn et al., 2018) and usually avoids any assessment of the quality of the research (Arksey & O’Malley, 2005). Instead, scoping reviews typically aim to investigate the extent, nature, and range of research on a particular topic or theme – in this instant, the Great Resignation – to provide an overview or map of the evidence (Arksey & O’Malley, 2005). These kinds of reviews do not intend to produce a critically appraised and synthesised result or answer to a particular question.

To answer the question of the impact of the Great Resignation, we conducted an online search using PRIMO and Google Scholar databases in June 2022 to find pertinent literature from 2019 to 2022. This search uncovered 3,108 sources using the search term ‘Great Resignation’. We then excluded literature that did not address the geographic contexts of this article, namely the UK and South Africa. This sifting process yielded 19 total references. Due to the limited number of empirical articles, we then included survey information from professional firms to provide additional data and used 13 sources from the initial literature search to provide the overall context of the phenomenon – see Figure 1 as per recommended guidelines (Page et al., 2021). Relevant documents were also downloaded from the Office for National Statistics in the UK. Unfortunately, no comparable statistical information was available for the South African context.

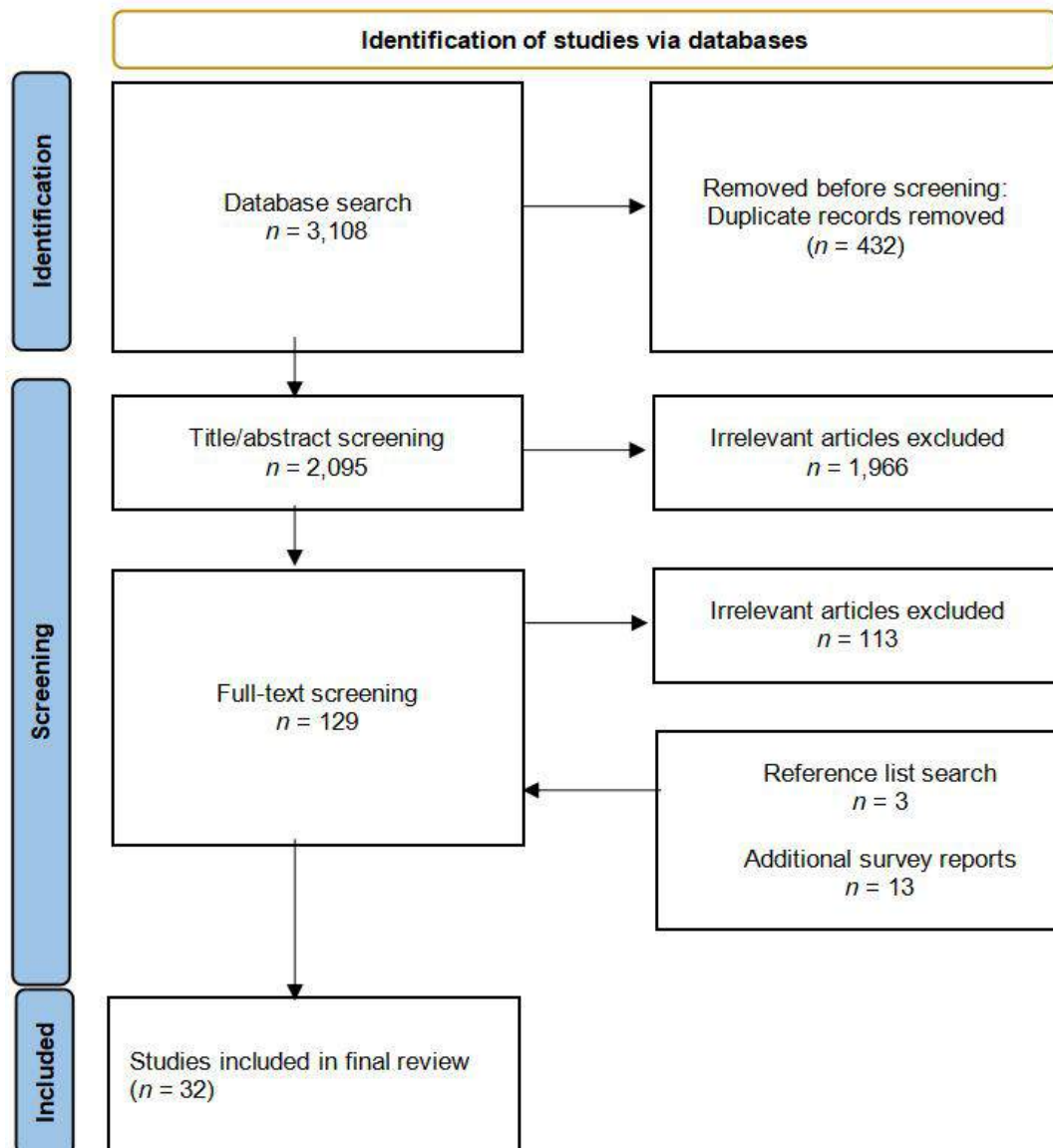


Figure 1. Scoping review process

The paper is organised as follows: First, we describe the phenomenon of the Great Resignation globally before exploring how it is manifesting within the UK and South Africa. We then enter into a discussion that brings TM theory to bear on the contextual challenges arising through the Great Resignation and argue that TM practices should be authentically integrated into organisations in South Africa and the UK. In closing, we suggest practical recommendations for management to mitigate or resolve the adverse effects of the Great Resignation in their organisations.

5. The Great Resignation

In the wake of the COVID-19 pandemic, organisations worldwide are experiencing an organisational exodus with a large number of employees exiting of their own accord. A few authors argue that it is less the Great Resignation as much as the ‘Great Reshuffle’, where individuals are searching for the best available employment (Birinci & Amburgey, 2022). Either way, this trend needs to be understood through employees’ motivations to exit, which may vary by geographic, political, and economic context.

5.1. The global picture

‘Push and pull’ theory proposes that voluntary turnover happens due to either a) a desire to exit, typically as a result of job dissatisfaction (the ‘push’ factor/s), or b) being drawn to other

organisations, characteristically because of potential employment alternatives with attractive benefits and opportunities (the ‘pull’ factor/s) (MacGregor & Wood, 2009). Push factors typically drive employees away from the organisation while the pull factors draw employees towards other organisations.

Much of the research on the Great Resignation has been conducted in the medical field and highlights trends such as stress, burnout, depression, and anxiety as major psychological factors (Ksinan, 2022; Linzer et al., 2022). Across job categories, other reasons for employee exit include ‘pull’ factors such as workplace flexibility (Curtis, 2021), increased remuneration, job security, and options for remote work (Foster, 2021). Across countries, a McKinsey study (De Smet et al., 2021) found that many employees felt a series of ‘push’ factors, including a lack of being valued by their organisations or by their managers and did not experience a sense of belonging at work. Alarming, the same study noted that more than one-third of employees were intending to leave their jobs despite having no alternative employment. Recent research highlights that the Great Resignation is part of a wider phenomenon – which the authors ascribe to the modern alienation of work – resulting in employees leaving their jobs for ethical, cultural, relational, and personal factors (Kuzior et al., 2022).

5.2. The Great Resignation in the UK

A 2021 survey in the UK found that nearly 25% of employees were actively pursuing a change in employer in the next three to six months as part of the Great Resignation, with a staggering 69% feeling confident about a move in the next few months, triggered by both burnout caused by the COVID-19 pandemic and a large availability of vacancies (Randstad UK, 2021). Other sources confirm that the numbers of people moving jobs in 2021 totalled 3.2% of the UK’s working population (CIPD, 2022) and a PwC (2022) survey found that almost one in five UK employees (18%) say they are very or extremely likely to switch to a new employer within the next 12 months, a further 32% say they are moderately or slightly likely to switch, and 16% are planning to leave the workforce temporarily or permanently. With lockdown measures imposing greater remote and flexible working, many employees chose to leave positions that were normally office-based.

What should be kept in mind is that employees did not decide to abandon work and leave the labour force, but that they resigned primarily to start new jobs for other employers. Many are leveraging the current recruitment crisis to transfer into better positions. Others have decided to move into self-employment with an increase to just over 4.2 million self-employed workers in the UK (ONS, 2022). Significantly, the over-50s have been the only age group showing an increase in terms of exiting the labour force, retiring in larger numbers than usual (Carrillo-Tudela et al., 2022). The hybrid work model has also gained favour with 24% saying they desire more flexibility in their permanent working arrangements, including flexible working hours (Weston, 2021). In the UK and Ireland, toxic culture was cited as a significant push factor with 18% of employees stating this was a reason for seeking new opportunities (Personio & Opinium, 2021). These surveys highlight the way the COVID-19 pandemic – combined with the impact of Brexit – have altered how individuals think about work and life, and what they want to get out of both. This moment of reflection has caused ties between employees and their organisations to weaken.

5.3. The Great Resignation in South Africa

Due to the COVID-19 pandemic, the subsequent lockdown conditions, and the resultant recession and economic uncertainty, working South Africans also find themselves considering whether to remain with their companies or seek opportunities elsewhere. With the reality of just over 35% of unemployment, it appeared unlikely that South Africa would experience the Great Resignation, yet the country is confronting some variant of the phenomenon.

The 2022 Salary and Wage Survey from RemChannel found that resignations in South African organisations are at the highest level of all the termination categories seen over the past 10 years (Richter, 2022). Among the main reasons provided by the respondents, 53% cited a better working environment to improve career opportunities or to avoid a toxic environment (citing bullying or harassment); 20% left for a greater work-life balance or to avoid burnout and/or stress; 19% left for

better pay; and 8% were emigrating. The most affected professions were people management personnel, sales and marketing, along with information technology, the academic sector, and financial services. Results from a follow-up survey showed that respondents expressed an explicit wish for work-life balance, including work from home arrangements (Richter, 2022). The majority of respondents were functioning under a hybrid working model (70%) and those who were physically back at their workplaces were unhappy to be there (35%) with 28% actively resisting such a move. Employee prerequisites for remaining with their employer included an enabling organisational culture, trust, better communication, and empowerment.

It appears, therefore, that South African employees – certainly those in the professional and senior management categories – are no longer concerned about the consequences of their organisational exit, especially if their skills are highly sought after. If organisations fail to address the root causes of this level of turnover, institutional knowledge may be lost. Coupled with an impact on succession planning, a reduction in business process efficiency, a depletion of relational capital, difficulty with attraction of suitable staff, and a potential loss of national human capital (Serenko, 2022), these outcomes could damage companies and have further negative impacts on the South African economy. How organisations and their employees address the underlying causes of the Great Resignation and its consequences is therefore critical.

6. Discussion

6.1. Talent Management in context

The characteristics of a country's institutional environment will shape the HR 'models' companies adopt and inform their TM architecture (Gallardo-Gallardo et al., 2019). While in the UK the government seeks to develop high performance workplaces that focus on skill development, the 'bundles' of HR practices used to achieve this are contested and the definition and implementation of each practice varies (Keep, 2016). UK organisations continue to rely on the external labour market rather than deploying a 'grow your own' strategy. This is despite 75% of employers experiencing recruitment difficulties and 50% of private sector firms increasing their spend on TM initiatives in the pre-pandemic phase (CIPD, 2015b). While TM practice varies, it appears to be focused on the development of new hires rather than longer serving employees.

Organisations in the UK public sector question the effects of TM on equality of opportunity and transparent processes (Harris & Foster, 2010). Perceptions of job quality in the UK are higher where HR formality is lower; formality increases in larger organisations and employees become less satisfied (Storey et al., 2010). As a result, TM practices may be perceived as overly controlling and adding a further bureaucratic layer. Thus, a voluntarist/LME regime implies a highly diverse and somewhat fragmented approach to HRM, casting doubt on the ability of TM practices/systems to cope with external pressures.

In the case of South Africa, the development of broader Human Resources (HR) practice remains contentious as there is no established indigenous African HR model. The cultural heterogeneity that is characteristic of South Africa suggests that HRM practices and particular forms of conflict resolution will be mediated by ethnicity, and the extent to which organisations and individuals are tolerant of diversity (Horwitz, 2017; Gomes et al., 2014). Horwitz (2017) suggests that HRM practice in Africa is converging on an East Asian model that is consultative, participative, and focused on internal stakeholders. However, more recent research suggests organisations might be drawn to the practices of ubuntu (Horwitz & Ronnie, 2021). Yet firms investing in South Africa have tended to implement practices characteristic of their home countries, thus undermining the development of an indigenous African HR model (Jackson et al., 2008; Nwankwo, 2012). This perhaps explains the inability of TM practices to address the deeply ingrained issues of skill development, career progression, retention, and equality. TM is therefore a particularly problematic concept within the context of South Africa – especially if used to assess the contextual value and differential contributions of key actors within the organisation (Glaister et al., 2014; Linden & Teece, 2014).

As a practice, exclusive TM may appeal to highly competitive organisations and to those South Africans seeking a more committed, growth emphasis from their employer (Horwitz, 2017), but TM programmes have the capacity to disaffect those excluded from them (Swahilis & Blackburn, 2016). Exclusivity creates a range of problems relating to perceived inequalities (Swales & Blackburn, 2016; Gelens et al., 2014; Thunnissen et al., 2013), organisational justice, ethics, internal competition, and workplace diversity (Kwon & Jang, 2021). While informing talented individuals of their special status as ‘talent’ has a motivational effect (Björkman et al., 2013), exclusive TM widens pay differentials and overemphasises individual performance (Kwon & Jang, 2021) highlighting issues of internal equity and dependable performance management systems (Minbaeva & Collings, 2013). Such dynamics have led to disastrous consequences for organisations in the past, with the investment banks at the heart of the 2008 global financial crisis being one example (Kwon & Jang, 2021).

TM suffers from problems of consistency – the internal consistency of HR practices, and the absence of consistent processes and infrastructures, which force employees to rely on their individual perceptions of HR-type practice (Wright & Nishii, 2013). According to Khoreva et al. (2017), those included in TM programmes not only need to perceive TM practices to be effective, but they also have to buy in to the logic and values behind them, thus historical legacy may create sensitivities to differentiation. A more inclusive TM approach would enable the opening up of TM systems to all employees so that they can be developed. This would ensure their useful and meaningful contribution to the organisation whilst boosting dignified employment and employee wellbeing (Anlesinya & Amponsah-Tawiah, 2020).

6.2. Talent Management and the Great Resignation

The Great Resignation has highlighted two overarching organisational challenges in both South Africa and the UK that impact TM: recruitment and retention. Table 1 shows the various factors that gave rise to these challenges.

Table 1. Overarching challenges in TM due to the Great Resignation

Recruitment	Retention
Specific skillset	Toxic workplace culture
Organisational culture	Pay
Flexible work arrangements	Work-life balance (WLB)

Current recruitment challenges stem from three key employee sources: a dissatisfaction with the culture of the organisation, a desire for flexible work arrangements, and the reality that, due to sought-after and specialised skills, employees with specific skillsets are the most likely to exit. Presently, retention challenges across both countries result from a poor work environment – most notably a toxic workplace culture, inadequate remuneration in terms of sought-after skills, and poor or unsatisfactory work-life balance (WLB).

There is a caveat to the discussion and that is that many of these factors were already present pre-COVID-19. For example, prior to the pandemic, a significant concern in the workplace was WLB. Work demands had placed considerable constraints on employees’ family and social lives Lunau et al., 2014; Bianchi & Milkie, 2010), resulting in harmful effects such as deterioration of physical health, overall life dissatisfaction, and psychological distress (Rahim et al., 2019). With large numbers of workers naming WLB as their main reason to exit, and equal numbers citing it as the top reason they would remain at an organisation (Personio & Opinium, 2021), WLB has proven to be meaningful to employees. Another pre-existing factor was the skills and labour shortage in the UK (Corradini et al., 2022; Davies, 2021), with skills shortage also a challenge facing South Africa.

The consequences of both of the overarching TM challenges cannot be underestimated. The first and most crucial threat is to the long-term sustainability of the organisation. This may manifest in a myriad of ways, one of which is loss of institutional knowledge as people leave the organisation (Serenko, 2022) with a second aspect being the cost of replacement. A recent UK survey calculated

the average cost of potential talent exodus per organisation at £10,076 (Personio & Opinium, 2021), with Richter (2022) estimating recruitment costs at just under R300,000 per South African organisation. Therefore, it is critical that remedial TM measures are put in place to address these adverse and damaging outcomes.

7. Practical Implications and Recommendations

Our findings have implications for organisations in both South Africa and the UK that are dealing with the challenges of the Great Resignation. In particular, we suggest various practical strategies to address gaps in organisational TM strategy. In this way, organisations might consider the shifts that are needed in both the short-term and long-term to ensure their sustainability. These strategies are framed by the Responsible Talent Management (RTM) model, which contends that TM – consisting of attraction, development, and retention practices – be supported through the principles of organisational responsibility, inclusivity, equity, and equal employment opportunity (Anlesinya & Amponsah-Tawiah, 2020).

Tailor the employee value proposition

It has become increasingly clear that the ‘one size fits all’ approach does not work, especially in the case of employees with sought after skills. Idiosyncratic deals, or i-deals, usher in a nuanced understanding of the employer-employee relationship as they are negotiated between individual employees and their management to consider and satisfy the needs of both parties (Liao et al., 2016). Therefore, the outcome of a well negotiated i-deal is that organisations attract and retain valued employees who, in exchange, have their employment and wellbeing needs met (Rousseau et al., 2006).

Improve work-life balance

The period of reflection brought about due to the pandemic has caused individuals to re-evaluate what is important to them in a holistic manner. While organisations have gone some way to address WLB in pre-pandemic times, it has been argued that these approaches have been built on bureaucratic models that inadvertently bolster the very phenomenon they are trying to resolve. As work-life merge is anticipated to carry on as a result of remote working conditions (Fetherston et al., 2020), organisations need to be aware of the potential for adverse impacts on employee wellbeing, with severe implications for employees’ work outputs, colleagues, and their own personal lives.

Address toxic culture in the workplace

Organisational psychopathy, in the form of toxic leadership, is becoming more apparent in organisations today and has been cited as a significant reason for exit in the Great Resignation. Toxic leaders are those who indulge in unethical and irresponsible practices (Thoroughgood et al., 2018). Research has shown its impact on the psychological safety of employees, reducing proactive work behaviour (Khan, 2021), increased psychological distress i.e., loss of self-worth, withdrawal, and agitation (Bhandarker & Rai, 2018), and a reduction in job satisfaction (Labrague et al., 2020). ‘The Toxic Five’ is a term coined by Sull et al. (2022) to describe the elements of toxic culture that have contributed most to employee turnover throughout the Great Resignation: disrespectful, non-inclusive, unethical, cutthroat, and abusive. The authors suggest that these elements require attention by senior management to create a more conducive, enabling workplace culture.

Build flexibility into the workplace model

Remote or flexible working arrangements are now expected by employees. The creation of more flexible working arrangements is also likely to be particularly important to older workers, parents and caregivers, people with disabilities, and those with recurrent or long-term health conditions (Davies, 2021). Recent studies have found that not only are remote workers happier and more engaged (Rahman, 2021), experiencing significantly reduced commuting time and travel costs (Aczel et al., 2021), and appreciative of how the lack of commuting reduces stress and allows them to enjoy more leisure time (ILO, 2020), but the organisational benefits that accrue from flexible work arrangements include increased productivity and more access to scarce talent (Newman & Ford, 2021; Matli, 2020).

Invest in and develop all employees

Organisations retain employees through ensuring a feeling of value and belonging, and that all have a sense of progression within the organisation. Typically, this development is only channelled to those with scarce or highly sought-after skills, with the effect of alienating those excluded from this group (Swales, 2020). As Anlesinya and Amponsah-Tawiah (2020) argue, principles of RTM should be combined into a hybrid set of practices that enable the leveraging of both TM approaches: an inclusive form of TM where all employees are developed and their talent strengthened, and an exclusive form of TM, whereby increased attention is given to employees who differentially added value. In this manner, no one will be excluded, no employee contribution will be wasted, and personal and organisational wellbeing will be enhanced.

Implement workable succession plans

The aim of succession planning is to assist organisations in managing and retaining their talent pipeline (Bolander et al., 2017). Succession planning mitigates the risk of employee turnover because of its proactive nature through the transfer of knowledge to the incoming generation who are likely to assume leadership positions in the future (Appelbaum et al., 2012). Yet, as Serenko (2022) notes, prior to the pandemic, succession planning was not a commonly accepted organisational practice. Typically, succession planning has focused largely on senior executives (Harrell, 2016) or those talented or skilled with excellent career progression potential (Collins et al., 2016). However, employees at all levels of the organisation possess vital organisational knowledge and, as the Great Resignation trends have shown, a substantial knowledge exodus may be completely unanticipated (Serenko, 2022). For organisations and their managers, a starting point would be to examine best practice in the literature (e.g. Groves, 2007).

Address and re-examine remuneration levels and financial wellbeing

Employers are encouraged to combat the mass exodus of their skilled staff by re-considering their salary packages. Importantly, benchmarking is critical in this regard (Remstad, 2022) as well as designing remuneration packages in keeping with employee requirements and including financial and non-financial benefits (Korsakiene et al., 2015; Tymon et al., 2010). This strategy will also assist with attracting suitable staff to the organisation and retaining them (Misra et al., 2013). Given the global economic climate, financial wellbeing has become a key factor to alleviate high turnover.

8. Limitations and future research directions

The focus of this study was to explore the Great Resignation in the UK and South Africa through a TM lens. The research did not focus on a specific sector or extend to other countries. This lends itself to opportunities for future research. Future studies could be conducted on a larger sample across more sectors. As this research is restricted to two countries, the recommendations for TM improvement may lack the nuances and contextual idiosyncrasies to be broadly applicable to other geographical settings. Future research could be valuable to determine if similar challenges are experienced in other comparative contexts and what measures to address the challenges might be found to be effective.

The findings of this study suggest that a more inclusive and responsible approach to TM is required. Empirical research is needed to explore current organisational approaches in terms of exclusive and inclusive TM approaches to establish which adds to organisational sustainability and enhances employee wellbeing.

9. Conclusion

In 2022, the Great Resignation has raised many challenges for organisations especially in terms of their TM practices. These challenges, though not new, are extremely apparent and serve as a wake-up call to employers. They point to the importance of including employees in the decision-making process and encouraging them to help shape the TM plan and solutions. While high turnover and record number of vacancies experienced in recent times are likely to recede, skills shortages are expected to remain over the medium to longer term. Here, organisations in both countries should re-examine their TM practices, in particular the skills pipeline. In the UK, it has been suggested that employers reverse the decline in investment in training and development and that the apprentice levy needs reshaping to provide organisations with more flexibility to accredit other forms of training and

skills development that suit them. South African organisations would do well to fully utilise the skills development fund for existing employees and build closer relationships with the post-school education and training sector to ensure equitable and inclusive TM measures come to fruition and enhance organisational sustainability.

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How Compliance With Performance Management and Development Systems (Pmds) is Assessed in South African

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Disclaimer: *This article is an extract from an MBA Mini dissertation submitted at the North West University Business School, South Africa*

Keywords

Performance Management System; Compliance; Factor analysis; Social Security; South Africa.

Abstract

This paper seeks to assess the South African Social Security Agency's (SASSA) Free State Province compliance with the current Performance Management and Development Systems (PMDS). The aim of the study was to the level of compliance by a provincial department to PMDS. A quantitative research approach was adopted, and surveys questionnaire was used to collect cross-sectional data. Descriptive and Factor Analysis (FA) was performed. Findings from this study suggest that managers, employees, supervisors, union representatives and human resource management staffs are the key stakeholders involved in the implementation of PMDS policies. The study also found that employees are submitting their performance agreements and assessments within the specified timeframe. Although most employees are submitting their agreement and assessment on time, it was established that there is non-compliance to PMDS guidelines within SASSA in Free State province. Understanding the perceptions of key stakeholders may assist SASSA in the Free State to realise their organizational objectives. The study reveals barrier to compliance to PMDS in SASSA Free State does exists. The paper have provided valuable information that could assist SASSA in the development of PMDS regulations and policies by the Department of Social Development to foster employee productivity through effective and efficient PMS processes.

1. Introduction

This paper reviews literature extensively about Performance Management and Development System (PMDS) of South Africa. Islam (2015:141) wrote that the current public service management approach emerged as a replacement to a pre-democratic public service management approach that was in existence before 1994. The pre-democratic public service management approach caters for a minority segment of the population to the neglect of the majority in the country. The study is situated within the discipline of public administration as developments in literature regarding performance management system is gaining renewed attention in public institutions such as municipalities and government departments (Ogolla and Oluoch 2019:20). The reason being the increasing ineffectiveness of the South African public service sector to deliver services to citizens that have led public discontent. As a result, researchers need to carryout studies for the that may lead to the development of a more inclusive assessment and practical approaches towards PMDS, especially in public organisations such SASSA. This South African Social Security Agency (SASSA) is a government agency reporting to the Department of Social Development of South African with the objective improving efficiencies in the provision of social services to the citizens.

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Price, Schwartz, Cohen, Scott and Manson (2016:245) have stated that, concerns exist about transformation of the South Africa public sector post-1994 due to weaknesses inherited from the past. The current public service approach in South Africa emphasizes public accountability through the performance management, performance measurement and performance improvement system. As a result, the current public service management approach brought a change at costs to and viewed as a vision and an ideological perspective within the general management principles. Hence, the re-configured public service in South Africa post-1994 introduced a new performance management system as a tool to the optimization of costs and efficiency in the management of performance of employees to improved service delivery (DPSA 2000:51). Sachane et al., (2018:03) posit that, talent management in any organisation is paramount for the prosperity of an individual and the organization. The argument is that the type of talent an organisation attracts determines the effectiveness in the implementation of policies. In the South Africa Social Security Agency (SASSA), performance management function is part of the human resource management unit, and the unit is responsible for the training and the development of staff about compliance with Performance Management and Development System (PMDS).

1.1. Problem Statement

The perception of employees in South Africa public service sector that they are denied an opportunity for career development, recognition and incentives have results in organizational challenges towards the achievement of organizational goals. Masenya et al., (2018:107) also opined that, several government departments in South Africa now focus on performance management as a solution to a low-performance culture and change management in public service. But at the same time, these government departments are tolerating non-compliance to performance management system processes; inadequate feedbacks from employer to an employee for developmental purposes; inadequate Performance Management and Development System (PMDS) training as well as poor communication in the public service is persistent. This study focuses on assessing the compliance of a provincial department to the South African Social Security Agency's (SASSA) Performance Management and Development System (PMDS).

1.2. Methodology Based on the conceptual and theoretical review of literature, it was clear that low-performance culture exists in the implementation of PMDS, and as such, an assessment was sought to fill the gap in the existing body of knowledge on how SASSA is implementing a performance management system in the Free State province of South Africa. This study is guided by ontological philosophy and adopts a positivist research paradigm. Ontology is specifically associated with the question of whether reality can be perceived as objective or as subjective (Polit and Beck, 2014:794). This paradigm helps the researchers to reflect their primary assumptions concerning the world and the foundation of knowledge (Bryman, 2012:27) of PMDS. A positivist research paradigm usually is associated with a quantitative research approach that assumes there is one true reality that can be discovered through rigorous empirical study (Creswell 2013:81). This is consistent with the objective of this study, which is to assess Free State SASSA's compliance with the South Africa Social Security Agency (SASSA) performance management and development system.

1.3. Research designs

Researchers such as Zikmund and Babin (2016:116) and Bloomberg and Volpe (2016:42), categorise research designs in quantitative studies into four categories – correlation, descriptive, causal-comparative and experiments. As a result, across sectional survey design was used to gather information from respondents using a scalar questionnaire to achieve the objectives of the study. Mouton (2001:95) posit that a descriptive approach is most suitable for studies of this nature because it assesses a situation without any modification. This study follows an exploratory and descriptive research designs to assess Free State's SASSA compliance with PMDS (Wiid & Diggines, 2010:196). As Chawla and Sondhi (2014:48) puts it, the research design informs the specification of methods and procedures for acquiring the information needed for a specific study. The descriptive design consists of the collection of data to answer questions about the current status of the subject inquiry (Malhotra,2010:182). Causal-comparative research attempts to determine the cause or reason for

existing differences in behaviour or status of groups of individuals (Zikmund & Babin,2016:116). Quantitative research approach, therefore, involves data collection that is typically numerical and analysed using mathematical models (Creswell 2013:32). A quantitative research method was used to assess the compliance of the Free State province with SASSA PMDS. This approach was descriptive and exploratory in nature.

1.4. Study population and sample

Informed by the objective of this study, the target population include all the employees of the Free State province working for SASSA. The total population of SASSA community is estimated at 450 employees in the Free State Province distributed across five districts with one provincial office. In each district, there are several local offices consisting of (elements) officials responsible for performance management. Therefore, the researcher intends to zoom on all employees of SASSA Free State responsible for the PMDS and employees who have participated in the performance management processes at least once.

1.5. Sampling process

There are two distinct categories of sampling that can be applied in research, namely, probability and non-probability sampling methods (Zikmund and Babin 2009:128). A probability sampling process was followed to ensure every member of the population has an equal chance of being selected. This study applied a stratified random probability sampling process and respondents were divided into homogeneous subgroups (in context such as age values, socioeconomic background, work experience and educational status) before random sampling, and each stratum was defined as a partition of the population (Malhotra 2010:459). The total population of Free State province SASSA employees was 450 personnel according to information from SASSA Free State HR database. The population was stratified into two major categories: managers and supervisors on one and general workers on the other hand. A total of 200 respondents were sample and 120 with a responses rate of 33.33%.

In this study, a questionnaire was deemed suitable since a large, predetermined sample size of n=200 was required to adhere to sound quantitative analysis principles. This sample size was determined using an evidence approach, which focuses on past studies of this nature. Toppo and Prusty (2012) used 194 employees in their study focusing on employee performance management while Owili and Isaac (2018) sampled 218 employees of a public institution and Sachane, Bezuidenhout and Botha (2018) used 209 employees at Statistics South Africa. Before collection of data process, permission to conduct the study in all district offices, local offices and provincial office units was sort from the Regional Executive Manager of SASSA in Free State province. Due to COVID-19, selected respondents were requested to attach a signature on the consent form and returned forms to the researcher agreeing to participate in the study voluntarily. The researcher then administered questionnaires to the selected participants who consented to participate in the study using electronics means.

Before the primary survey was administered to respondents through face-to-face interaction, a pilot study was performed with a small sub-sample of respondents. The aim was to advance, adapt, familiarise, and check the feasibility of methods and to control the reliability of measures, and to approximate the size of the sample. These respondents were purposefully sampled and did not participate in the final study. The techniques and methods applied to answer the research questions were thoroughly assessed, and challenges experienced identified and fix before the final administration of questionnaires. The pilot study was conducted to ensure that the planned data collection method was proper. Questionnaire was divided into six sections with section one focussing on biographical information, and the rest of the sections were aligned to the objective of this articles.

1.6. Data analysis

Data analysis was performed using Statistical Package for the Social Sciences (SPSS version 26.0). Descriptive statistics measurements of central tendencies and ranking such as correlations and exploratory factors analysis was performed. Results from the analysis was presented in the form of graphs and tables using frequencies and percentages. Factor analysis serves the primary objective of

this exploratory study was used to discover the basic factor structure of a set of witnessed variables without commanding a pre-set structure on the outcome (Brown et. al., 2018:3). This form of inferential analysis aims to uncover the unknown about the studied the management of PMDS in the Free State Province of South Africa. The researcher validated the analysed data by identifying new factors using Principal Component Analysis (PCA).

1.7. Reliability and Validity

Reliability is the degree to which a test or measure can produce the same results if it is repeated under identical conditions. In this study, Cronbach alpha's coefficient was used to test the reliability and internal consistency of the items in the questionnaire. The results show that all 29 items are reliable and internally stable. They all have alpha coefficients of 0.734 or higher. A Cronbach's alpha coefficient of above 0.70 is generally considered acceptable (Malhotra 2010:731), but a value of above 0.6 may also be considered acceptable in the case of exploratory research (Field 2013).

The validity of measure points to the level which an exact measure of a tool is important and assists in making inferences from the target population (Hair et al. 2017:142). It is also the degree to which the instrument measures the construct it purports to measure. The content validity of the research tool for this study was done through verification with similar studies from extensive literature review. Some of the statements were modified based on the suitability to the local context and the objective of the study. Table 1 summarises the reliability measurement using Cronbach's Alpha coefficient.

Table 1: Summary of reliability test results

Measures	Construct	Cronbach's Alpha coefficient	Factor loadings	Communalities	Corrected item-to total correlations
Q2.1, Q 2.2, Q 2.3 and Q 2.4	Key stakeholders	0.841	0.585 to 0.957	0.557 to 0.725	0.469 to 0.677
Q3.1, Q3.2, Q3.3, Q3.4, Q3.6, Q3.7, Q3.8, Q3.9 and Q3.10	Views of employees	0.788	0.652 to 0.824	0.60 to 0.817	0.487 to 0.555
Q4.1, Q4.2, Q4.3 and Q4.4	Submission of performance agreements and assessments	0.734	0.847 to 0.891	0.717 to 0.809	0.462 to 0.503
Q5.1, Q5.2, Q5.3, Q5.4 and Q5.5	Barriers to compliance with PMDS	0.804	0.622 to 0.841	0.439 to 0.707	0.501 to 0.578
Recommended threshold suggested by Malhotra (2018)		Above 0.700	Above 0.500	Between 0.200 and 0.500	Above 0.300
Minimum score= 1; Maximum score = 5; N=120					

Source: Researcher's own data

The Cronbach's alpha coefficients for this study ranged between 0.734 and 0.841 and were all above the threshold of 0.70 for acceptable internal-consistency and reliability (Field 2013:668). As an indicator of both construct and convergent validity, the factor analysis has significant loadings (0.585 to 0.957) and strong communalities (0.439 to 0.817), while the item-to-total correlations (0.462 to 0.677) inferred a large variance.

1.8. Ethical consideration

In this study, six ethical research principles were considered, such as informed consent, protection from harm, confidentiality, research integrity, beneficence, and permission to conduct the research

study. As suggested by Hammersley and Traianou (2012:56), these are the main ethical concerns relevant to a quantitative study such as this present research. In the context this research, ethics also refer to moral standards of behaviour that govern or guide the researcher's conduct. These are accepted norms of behavioural conduct that differentiate between acceptable and unacceptable behaviour (Saunders et al. 2016:239). Ethics are fundamental to the research process, and researchers are obliged to observe ethical issues throughout the research process. The acceptable approach to research study is to ensure that the research process is conducted with morality and sensitive findings are treated and reported with a soft approach to avoid breaking the relationship between parties involved (Akaranga & Makau 2016:102).

2. Literature Review

The introduction of Performance Management and Development System (PMDS) in the public service of South Africa in 2002 led to a renewed hope of reforms in the South Africa public service. Sachane et al., (2018:2) have argued that the thinking behind the new performance management system approach in the public service was the expectation that it will bring about a radical paradigm shift to performance management culture in many government departments. Since the introduction of the new Performance Management and Development System (PMDS) as regulated by the Public Service Regulation Part VIIIA of 2001(DPSA 2000:27). The South Africa Social Security Agency (SASSA) of the Free State provinces' employees are submitting their performance agreement and performance reviews post agreed time in contravention of the PMDS regulation part VIIIA of 2001.

The contravention to a system that is expected to drive organizational performance coupled with non-compliance have led to undesirable outcomes whose impact on the performance of employees has not been thoroughly researched. The non-compliance to the performance management system and persistence of post dateline submissions in contravention with the PMDS regulations is concerning (DPSA 2000:30) and Ndou et al., (2013:30) undertook a study to investigate these concerns. These studies found that the current performance management and development system framework supports a standardized and uniform approach to performance management in the public service. The study also found that PMDS set norms and standards for effectiveness in public service to avoid confusion and disparities of implementation of performance management and development in the public service. However, SASSA Free State Provinces' compliance to the performance management system as perceived by its employees is that of noncompliance to PMDS regulations by management, and this study intends to assess the reason of non-compliance by SASSA in this province of South Africa.

SASSA's Performance Management and Development System reports (PMDS Report 2017/18) reveals that submission of performance agreements and performance reviews by Free State SASSA employees happen after the agreed deadlines as per policy. The happens because of management unable to enforces PMDS policies guidelines. Compliance with performance management agreement forms the basis for the promotion of sound governance principles in the organisation. Furthermore, PMDS compliance ensures that employer and employee realised the benefit of an efficient public service (PMDS Report 2017/18). However, transgression (non-compliance) with performance management system occurs when the implementation diverges from established norms and standard as outlined by the PMDS policies and regulations.

Since the introduction of the PMDS regulations and policy in 2002, SASSA employees in the Free State have persistently submitted their performance agreements and performance reviews post datelines due to the noncompliance to policy guidelines. According to SASSA Free state annual report on PMDS, the persistent submission of performance agreements and reviews after datelines makes it challenging to evaluate, identify and separate performing employees from under-performing employees. Furthermore, noncompliance with PMDS regulations and policies makes it difficult to identify skill areas where employees are lacking for future development and training.

A random check across the five SASSA districts and provincial officials in the Free State reveals a significant number of employees do not even submit their performance agreements and reviews in time. The non-compliance has resulted to increases in the number of grievances about the performance of individual employees and the basis for promotion in SASSA Free State. The non-

compliance has also led to many SASSA employees exhibiting unsubstantiated views about performance management system. Hence, the reasons to assess the non-compliance by SASSA Free State employees to the performance management and development system.

2.1. Conceptual framework on PMDS

Chauke (2010:5) have argued that the dynamics and commitment of the South African public service to service delivery lies with managers in government departments to enhance and improve subordinates' performance. Acas (2014:8) opined that, the management of performance in any organization is an endless process and not an occurrence. Therefore, the challenges that exist with regard to PMDS have a direct impact on actualisation of a performance management system of an organisation.

Joubert and Noah (2000:18) refer to performance management as the practice through which management of an institution ensured employees have daily planned activities at work to realise inputs, outputs, and outcomes. Van der Walt (2004:39) defines performance management from strategic management and integrated perspectives and stated that "performance management is about the effectiveness of organizations by improving the performance of employees and this system involves employees to ensure the organizational mission is accomplished". On the other hand, Fernandez (2005:261) defined performance management as a method of engaging all human, financial, and physical resources inside an institution to maximise and achieve the desired results or outcomes for the benefit of the institution. While Rakhoale (2011:52) opined that, there are several different definitions from different perspectives on performance management. However, this article suggests that there exist key elements that are common in all the definitions of performance management indicating the complexity around the concept. In this study, performance management is explained as a process that comprises organisational processes, organisational systems, and organizational culture that strive to achieve the organisational objectives. Therefore, the preferred definition of performance management and development system as used in this article is align to that of Van der Walt (2004:39). This will include managers and subordinates working together in anticipation of desired results/outcomes that are linked to individual organisational goals and objectives. Hence, managers in the public service must understand that planning, leading, coordinating, motivating, and controlling is how performance management relates to other processes and practices in an institution.

Bhattacharjee and Sengupta (2011:497) affirms that, goal setting is the utmost important approaches for starting improved performance amongst employees. Goal setting is continuously established and that effective goal setting allows the following; permits employees to prioritise the tasks, alliance of individual goals with objectives of business, elevates employees' individual performance and support to point the main result areas. A goal setting is a fundamental requirement of a well-organized performance management system. Proper goal setting is intended to be beneficial to performance of an employee and performance of business. Several researchers (Bhattacharjee & Sengupta 2011:496 and Jain & Gautam 2014:18) have researched on the intention of understanding performance management with the intention of objectives being modified and narrowed down to fit organisations of all types and sizes affirming the complexity associated with PMDS. However, Oakland (2020:11) explained that the organisational objectives must be practical, specific, and achievable (output should be clear and eliminate doubts with regard to achievement); measureable (performance activities must be measured in line with time, costs, quantity and quality); achievable (reasonable to be achieved); realistic (objectives must be real and concrete, not abstract) and time bound (objectives must be achievable within a specified time and dates).

Qureshi et al., (2010:856) affirms that, managers are expected to place manageable expectations from their employees as one of the crucial aspects of managing human resource. Toppo and Prusty (2012:8) explained that an effective performance management system must attempts to set clear prospects from both managers and employees' sides, and it is not advisable to anticipate a poor performing employee to start providing good star results or a good performing employee to remain consistently performing forever. Similarly, managers must set expectations in a way that will convey in some results and setting the right goals by outlining the prospects of your employees in clear terms, implementation to

aid employees in achieving objectives of business and to establish a deliverables document with straightforward tasks, roles, and responsibilities to ensure productivity is crucial argues Jain and Gautam (2014:18). Such a clear and unambiguous goal setting will facilitate better business performance and encourages the personal development of the employee.

Qureshi et al., (2010:856) opined that, fluctuating workplace dynamic forces are bringing a cultural change to today's place of work and as such communication should play an important part in the performance management of employees. Jain and Gautam (2014:18) affirms that, an organisation with a good communication culture may result in employees who are engaged and aligned with individual objectives that are also aligned to business objectives. Hence, team members must be acquainted with what their other team members objectives are, succession planning, and notions to fulfil the project (Jain and Gautam 2014:18). Paile (2012:37) support the notion with a view that any team where there are lacks proper communication amongst its team players loose unity bond which is very crucial for high performance team.

The most import objectives of performance management are to set performance standards. An organisation must set performance standards and performance plans for assessing employee performance (City of Polokwane 2017:8). Every occupation has a specific performance standard to be achieved, and failure to achieve performance standards could result in the following, firstly, absence of effort from employees, secondly, setting more impractical standards for work, thirdly, not enough means to complete the task, and lastly, failure of cooperation from team or supervisor. Paile (2012:37) affirms that, an effective performance management system should be able to high point the performance gap and accomplishments. The strengths, weaknesses, opportunities, and threats of your organization may become more evident, hence, more comfortable to advance or correct. Furthermore, a good performance management system must recognized the training and development needs of employees and encourages personal growth as well as expansion in the career of the employees through preferred knowledge and skills development. Employees must be consulted to determine their skills gap to accomplish their tasks perfectly, secondly, the training plan and budget be available to support identified needs, thirdly, an implementation plan is developed for newly acquired skills for key result areas and to align organisational objectives with newly acquired skills.

2.2. Theories underpinning PMDS

Mullins (2011:426) have argued that motivation which is defined as the drive that gives an individual the appetite to persist or persuade something with the positivity of achievement is fundamental in the development of any Performance Management and Development System (PMDS). Therefore, motivation whether extrinsic or intrinsic is the driving effort to take performance to new levels and that, there is no separation between motivation and incentives, needs, tensions and other forces. Hence there exists different forms of motivation theories such the content and process theories which are suitable for this type of study.

This study focusses on content theories of motivation and combines aspects of Fiedler's contingency theory, Path-goal theory, Goal-setting theory, reinforcement theory, expectancy theory and equity theory (Britt and Jex, 2008:316). The justification is that content theories explain the recognition of people's needs, relative strengths and goals which are supposed to be pursued to satisfy needs. Content theories are also about nature and what stimulates the needs of people. In this study, Fiedler's contingency theory argues that the success of a leader depends on the interaction between a situation and a leader. In performance management, employees are expected to meet, discuss their performance with their manager and areas of concern for improvement of tasks are identified with steps taken to ensure achievement. While the Path-goal theory explains "a way in which a leader takes a role to direct a subordinate to a goal". In performance management, a manager is expected to be a task-oriented leader to ensure the focus of an employee is always on the tasks to be achieved.

Furthermore, the Goal-setting theory which focusses on the action plan designed to motivate or guide an individual to achieve a particular goal was very relevant in this study. In performance management, there are specific goals set for performance with a view or intention to achieve certain specific goals

of an organization as well as personal development goals for the benefit of the organization. But the reinforcement theory was used as a basis to motivate an individual to perform in a positive or negative way. In this light, it was argued that performance management process is a positive reinforced approach of rewarding employees for outstanding work. However, this positive reinforcement may result in negative challenges which may be considered as a negative reinforcement. Such an approach is not uncommon in many public institutions in South Africa which has resulted in consequence management of poor performance.

Finally, the expectancy theory which focusses on individuals' behaviour and actions was also relevant to this study. The basis was that individuals' behaviour and actions are influenced by expectations of benefits for such behaviour or actions. In performance management, the employees of an organisation (SASSA) are expecting rewards for good performance and therefore work harder in expectation of rewards thereby creating a specific type of culture (SASSA reward policy). But the equity theory was used to explain fairness of social exchange in the work context and argues that, in performance management, the employee of an organisation is expected to give the optimal performance to the organisation in return, for a rewarded for their optimal performance. Although, Maslow's hierarchy of needs model according to Mondy and Premeaux (1995:315) is of the view that, the achievement of one level by an employee in the need's hierarchy necessitates the development of the need for the next level of needs. Hence, the motivation for performance according to Maslow is developed in five levels.

2.3. Linking PMDS to factors driving PMDS in SASSA

Performance Management and Development System is a system which lays down policy, procedures, processes, and systems of managing and developing performance for the public service environment, specific institutions, branches, teams and individuals (DPSA 2000:54) in South Africa. The public service environment in South Africa is a complexity of different sectors with different forms of organizational structures. These different organizational structures make it difficult to harmonise a uniform standard for performance management in the public sector. The Department of Public Service and Administration (DPSA) permitted each department to use the PMDS guidelines to tailor their own performance management and development system policy. Hence, different approaches PMDS policy exists within the South African public service sector and implementation thereof (DPSA 2000:19) is very challenging.

Powell (2019:26) stated that, corporate governance in South Africa was established by the introduction and publication of the King I report in 1994 and subsequent II, III and King IV report. Corporate governance is embodied with processes and systems, and these processes and systems are used to control, direct, and hold the organization into account. Besides, good governance is controlled and maintained by law and therefore, government departments must comply with legislation, policies, processes, and systems of corporate governance to achieve good governance. Compliance is a broad concept which refers to prescribed requirements in relations to section 159 (7) of the South African Companies Act. Hence, compliance can be interpreted in many ways such as compliance with process, compliance with standards, compliance with norms, compliance with systems and compliance with procedures.

Compliance in the public sector of South Africa has become an understandable concept based on obligations and responsibilities related to compliance. The South African government has several legislations, policies and practices which are developed and introduced in striving to put layers of compliance. The most important strive in public sector compliance is risk assessment. The public sector compliance programme can only be effective and efficient when obligations and responsibilities are performed by top management with commitment, proper operational policies and procedures, communication and training, and periodic reviews. In the South African public sector, the overall purpose of PMDS to transform public service and improve performance, safeguard continuous enhancement of the human capacity of public service and to provide mechanisms for assessing, reviewing, and accounting for achievements/results (DPSA 2000:11). PMDS is controlled by public service regulation (2001) part VIIIA, which is consistent with performance management principles such as consultation process, accountability, staff development, departmental planned goals, human

capital development, recognition of outstanding individual performances and maintain transparency as well as administrative justice (DPSA 2000:27).

To achieve this purpose of compliance, there exists daily factors driving PMDS in SASSA as observed by the researcher. These factors include SASSA strategic plan, operational plan, and annual performance plan as well as employee's performance agreement. There exist three main drivers of SASSA's performance management and development system implementation. These include, individual performance agreement (contract), individual performance assessment (review) and individual performance recognition (rewards). In a performance agreement of any employee, there are three sections that forms the performance agreement, namely, the Work plan (part A), Generic Assessment Factors (part B) and personal development plan (part C). In Performance Assessment, there is only Work plan (Part A) and Generic Assessment factors (Part B) (SASSA PMDS Policy 2016:3).

The development of performance agreements is underpinned by principles of performance management and development system (PMDS) policy and PMDS procedure manual. In a performance agreement (contract), there are performance objectives (the Key Responsibility areas (KRA)), performance standards and performance indicators, all these factors such as performance objective, performance standards and performance indicators are developed within "SMART" principle (DPSA 2000:116) and within Pareto principle (DPSA 2000:133). While in the work plan (Part A), key responsibility area, performance standards and performance indicators of each employee is outlined. These indicated elements are the elements which are subjected to be measured during performance review (SASSA PMDS Policy, 2016:10). The Generic Assessment Factor (GAF) outlines the different skills which are used/needed by employees and aimed at assisting each employee in executing the key performance areas (objectives) for achieving the key performance indicators (SASSA PMDS Policy 2016:10). While the Performance development plan (part C) outlines occupational, developmental courses which must be undertaken by the employees and supported by the employer to enhance skills of the employee to improve an employee performance for the benefit of the organization (PMDS Policy 2016:8).

The main purpose of performance assessment is to review the periodic progress report on the performance of all employees contracted to an employer. Every employee performance evaluation in SASSA has performed twice annually, the performance evaluation period and performance review period are the most critical time for employee and employer to communicate effectively about expectations and barriers to the expectations of the employer to the employee (DPSA 2000:105). According to Van der Waldt (2004:62), the performance standard is a certain level of performance measure agreed upon during signing of performance agreement by employer and employee. This is level which is used as a benchmark of performance expected by the employer from the employee. The performance standard is an indicator and measure of performance quality expected and to be delivered by an employee to the employer.

According to Grobler (2002:260), performance measurement has several tools which could be used, such as total quality management (TQM), just-in-time (JIT) and key performance indicators (KPI). In accordance with the implementation of PMDS and procedure manual, the model which is preferred in SASSA is a key performance indicator (KPI) to measure performance. The employee is considered to have performed work efficiently and effectively when the key performance indicator could be confirmed on the report as a portfolio of evidence (DPSA 2000:105). The key performance indicators are taking the central stage and focus because the presence of achieved key performance indicators means performance attained. As a result, the goals and objectives of an organization are achieved. The only challenge remained is improved performance of an employee; the measurement of performance in SASSA does not mean an analysis of performance for feedback. The feedback of the individual employee must be provided from the employer (supervisor) for improved performance purposes (SASSA PMDS Policy 2016:10). The purpose of performance evaluation is to identify employees who contributed immensely to the achievement of organizational objectives for that performance cycle; therefore, identified employees are rewarded accordingly. In SASSA, a performance reward

policy is in place to ensure that employees who performed excellently than others are monetarily rewarded accordingly (SASSA reward policy 2016:8).

2.4. Linking employees training and development with PMDS

The South Africa Social Security System (SASSA) of South Africa is expected to comply with the need to uplift the skills of individual employees and teams for the benefit of organizational performance. Since the Department of Public Service and Administration (DPSA) has developed the policy guidelines for the benefit of performance improvement. The training needs or training solution of SASSA should be in line with challenges identified during the performance review process between an employee and supervisor. There exist many training methods which can be used to enhance employee performance. However, it is the responsibility of the supervisor to confirm and select the method that best suits an employee for the benefit for both employee and supervisor. The SMART principle was developed as an imperative for supervisor and employee to ensure that goals and the purpose of training are realised. The effective management of the training and development factor assists the SASSA in reaching organizational performance peak. All employees are trained and developed to face new challenges with acquired skills and knowledge during the training.

However, barriers to PMDS implementation persists in SASSA and according to Klein 2019:20), these are barriers that are common for an effective performance management system implementation in many organisations. But these barriers response to organisations differ and organisations must ensure that, barriers are removed before consequence management could be implemented as a last resort to deal with ineffective performance management as shown in Figure 1.

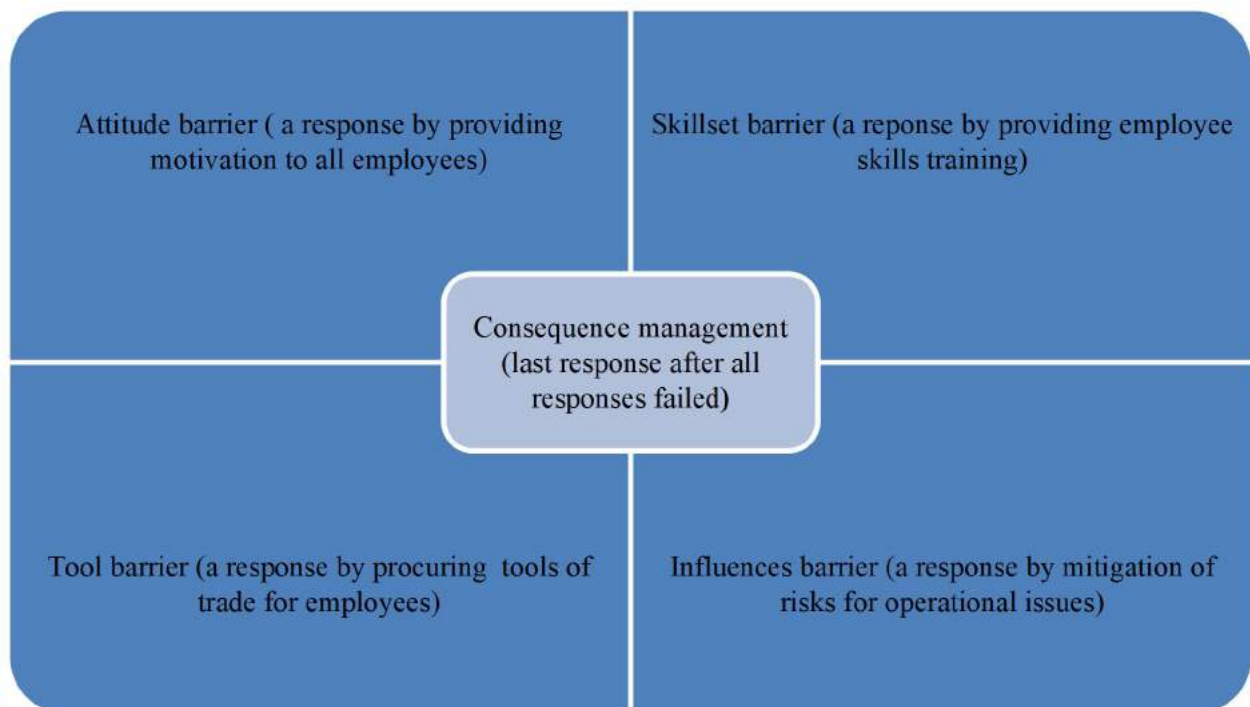


Figure 1: Barriers to effective performance
Source: Adapted from Klein (2019:20)

Klein (2019:20) as illustrates in Figure1 have identify barriers in the implementation of effective performance in an organisation by its employees. these barriers are grouped into attitude barrier which requires human resource personnel to attend to an employee for counselling and referrals for emotional support. Skillset barrier which requires the training for employees by employer to capacitate employees through the personal development plan. Tool barrier on the other hand needs the employer to provide stationery, computers, and the conducive environment from employer to employees to enable employees to perform their activities. Influences barrier which demands for a proper risk assessment plan and risk mitigation plan of the possible risks. There is a need for research

focus on performance management in South Africa but existing research have mostly focussed on poor performance culture and poor change management in public service, non-compliance to performance management system processes, poor feedback from the employer to the employee for developmental purposes and inadequate PMDS training and communication in the public service rather than a harmonisation of PMDS guidelines and policies to avoid confusion and enhance implementation Rakhoale (2011:9).

3. Results and Findings

3.1. Presentation of results

Prior to conducting the exploratory factor analysis, sample size requirements, as well as common methods bias, were checked. In general, it is recommended that a minimum of 300 cases should be maintained to have a good factor analysis. Hair et al. (2017:89) recommend a minimum of five observations for each variable (5:1 cases) under study, which was evident in this study. Initially, a Harman one-factor score test was conducted by running the preliminary EFA on the sample data, whereas the unrotated factor solution was examined to determine the number of factors that are necessary to account for the variance in the variables. The single factor that emerged yielded one general factor accounting for approximately 26.64% of the covariance among the measures leading to the conclusion that, common method variance is not a problem. Principal Component Analysis (PCA) was performed for four scales (section 2, 3, 4 and 5) respectively to reduce the components of the item that address the constructs. Section 6 only had two items, which makes it disqualified for factor analysis and Table 2 presents the findings from EFA.

An EFA was then performed using principal axis factoring by applying an orthogonal method of rotation termed, Varimax, which helped to evaluate the construct validity. A maximum iteration value of two for convergence was used to search for the optimal factor solution. The suitability of data for factorability was ascertained after examining the large Kaiser-Meyer Olkin test statistic (KMO = 0.652) as well as the Bartlett spherical test, which showed a significant result with a large chi-square value ($\chi^2=265.298$; $p<0.000$) for section 2 (Key stakeholders in PMDS implementation). The two-factor solution was identified with two items each. The two-factor solution explained 62.21% of the variance.

Table 2 reveals that the KMO for all the constructs of the questionnaire were above the acknowledge threshold of 0.6, and Bartlett's test of sphericity was statistically significant ($p < .000$) indicating the suitability of the factor analysis method about the constructs. The Cronbach's alpha coefficient value for all constructs was at the acceptable threshold of 0.7 and 0.6 in the event of an exploratory study. Hence the reliability was considered satisfactory and therefore deemed acceptable. However, the item of the questionnaire that does not encounter the lowest standard of having a primary factor of 0.400 or above was eliminated from analysis.

Table 2: Summary of exploratory factor analysis for the four scales

Construct and items	KMO (Sig of Bartlett's test)	% Variance explained	Factor loading	
			1	2
Key stakeholders	.652 (p<0.000)	62.210		
The key stakeholders are employees, supervisors, managers, unions and HR				0.798
The most effective stakeholder are employees			0.750	
The most effective stakeholder are Union reps				0.865
The most effective stakeholder is HR			0.763	
Views of employees	.857 (p<0.000)	59.740		
SASSA PMDS policy regulation			.706	
SASSA PMDS policy promotion			.933	
SASSA PMDS policy consultative			.957	
SASSA performance contracts			.710	
Six months performance assessments			.672	
Poor performance of employees				.814
SASSA moderating committee				.809
SASSA HR attendance of grievances				.585
SASSA performance rewards			.622	
Submission of performance agreements and assessments	.747 (p<0.000)	76.718		
Employees submit their agreements on time			.899	
Senior management ensure submissions are signed and submitted on time			.865	
Employees submit their agreements to HR on time			.891	
Senior management ensure performance assessments are conducted on time			.847	
Barriers to compliance with PMDS	.795 (p<0.000)	56.993		
SASSA allows employees to perform PMDS processes			.662	
Managers & supervisors perform their PMDS processes			.841	
Employees perform their PMDS processes			.727	
HR performs PMDS processes			.766	
SMART performance standards			.767	

Source: Researchers own data

Note: *item 3.5 was eliminated for further analysis as primary factor of .400 or above have a minimum criteria to be met, and that minimum criteria were not met. The items were summarised to fit into the table and complete questionnaire is attached.

The interpretability of variables was enhanced by rotating factors to load into factors as observed by Malhotra (2010:283). In obtaining an orthogonal rotation of factors, the most proved successful method in analytic approach and frequently used and reported option is Varimax method (Zikmund&Babin2013:347). Factor clarification depends on factor rotation, showing the relationship of items to factors by maximising the loadings on one factor and minimising loadings on all the others. The formula which was applied is the principal components method of extraction with Varimax orthogonal factor rotation. The factor loadings of 0.400 and above were regarded significant with

factor loading matrix presenting loadings beyond 0.5 excluding for item 3.5. The criterion of Hair et al. (2017:239) was exceeded, and this criterion indicates that factor loadings that are regarded to achieve lowest standard are greater than ± 0.300 loadings that are regarded significant are of ± 0.400 , and loadings that are regarded more significant are of ± 0.500 and greater.

An exploratory factor analysis was then performed using principal axis factoring by applying an orthogonal method of rotation termed, Varimax, which helped to evaluate the construct validity. A maximum iteration value of eight for convergence was used to search for the optimal factor solution. The suitability of data for factorability was ascertained after examining the large Kaiser-Meyer Olkin test statistic (KMO = 0.652, 0.857, 0.747 and 0.795) as well as the Bartlett spherical test, which showed a significant result at a significant level of $p < 0.000$. All the retained factors were above the recommended 'greater' of 0.500, suggesting that the retained items are the important factors to be considered in the implementation of PMDS, especially at SASSA in Free State. It was one of the objectives to identify the factors contributing to the implementation of PMDS within the demarcated area. Therefore, this study findings provide SASSA Free State with important drivers of PMDS implementation to consider and improve.

3.2. Discussion and interpretation of findings

Findings from the respondents' biographical information reveal that most (48.30%) of the employees at SASSA Free State province are Clerks or Grant administrators. These findings could also reflect the importance of administrative work within public institutions. Furthermore, the findings reveal that the majority (46.22%), which, have been working at SASSA for more than 13 years and that 66% of them are from a grant administration branch or unit. To support the above findings, research managed by Qureshi et al. (2010) revealed most stakeholders inside public organizations are non-managers. The literature also suggests that the majority have working experience of over ten years (Cameron 2015; Masenya et al. 2018).

Research question

What is the level of compliance by a provincial department of the South African Social Security Agency's (SASSA) Performance Management and Development System (PMDS)?

The factor analysis results with 0.652 ($p < 0.000$) significant value of Bartlett's test and 62.10% of variance suggest that employees, supervisors, managers, Union representatives and Human resources as the key stakeholders in the implementation of PMDS at SASSA in the Free State province. These findings are supported by many researchers, including Jain and Gautam (2016). They maintain that in any industry, the role of human resource has expanded from the traditional role to expand its dimensions to assess its employees' performance, and this expanded role is managed by the performance management system. Ogolla and Oluoch's (2019) study in Kenya also found that both lower and middle management level employees are the key contributors of PMS.

4. Conclusion

The study concludes that, barrier to compliance to PMDS in SASSA Free State exists and implies most employees are either overloaded with work or the institution is short-staffed. That senior management ensures that performance assessments are conducted, and all employees signed and submitted performance assessments in each performance cycle. That the non-compliance to the PMDS regulations and policies may be due to work overload and Staffs shortage in SASSA and managers finds it difficult to improve the poor performance of employees in the face of such challenges.

5. Managerial Implications

The study purpose was an assessment of level of compliance of the Free State Province South African Social Security Agency's (SASSA) employees and management to Performance Management and Development System (PMDS). Exploring and understanding the key stakeholders involved in PMDS implementation as well as the perceptions of employees regarding PMS compliance might assist SASSA in Free State to realise their objectives through the most efficient usage of the performance

management systems. From the perspective of the SASSA, this study has provided valuable information to assist in the development of PMDS regulations and policies by the department of social development toward fostering employee's productivity through effective and efficient PMDS processes. There was valuable and positive information for improvements of managing performance in SASSA and negative information which needs serious attention to manage performance and avoid risks related to this negativity on PMDS.

6. What was this paper all about?

The empirical objective as set out was to:

- Assessing the compliance of a provincial department to the South African Social Security Agency's (SASSA) Performance Management and Development System (PMDS)

Using EFA, the key stakeholders in the implementation of PMDS at SASSA in Free State are employees, supervisors, managers, unions members and human resource staffs. This objective was achieved where the KMO test was used to determine the number of factors extracted as well as percentage of variance explained. Furthermore, using frequency analysis to determine the views of employees at SASSA regarding the current PMDS implemented. SASSA employees suggest that PMDS policy regulates and promotes alignment of individual performance with SASSA strategic objectives through performance management. Using the EFA to identify the barriers in the implementation of PMDS at SASSA in Free State, the factor loading was all above 0.400 suggesting that employees agreed of the barriers. These challenges are perceived as barriers to compliance with PMDS submission deadlines and employees are not complying with the PMS regulations and policies.

In the assessment of compliance to Performance Management and Development System (PMDS), this study was by no means without limitations. In fact, one of its limitations was that the study was confined to only SASSA employees in Free State province. Further studies can consider the South African SASSA employees. The study was exploratory, employed a quantitative research approach and utilises cross-sectional data. Future research may consider both a qualitative and quantitative research design using triangulation methodology where a qualitative design could be used in generating rich ideas and explanations. In addition, collecting data from the same population more than once may yield different results since PMDS is a continuous process and requires follow up. Despite these limitations, the study advances knowledge regarding PMDS at a governmental institution, considering that there is a noticeable absence of prior research within the SASSA context.

Acknowledgments

The Authors want to thank the academic staffs of the North -West University Business School who participated in the Scientific Committee (SC) and assisted in reviewing the proposal. Furthermore, members of the Faculty of Economics and Management Science (FEMS) ethics committee for further reviewing the proposal, data collection tool, informed concern form, etc. to ensure ethical compliance, quality assurance and strengthening of the content.

- **Competing interests:**

The author(s) declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

- **Author contributions:**

Author¹ conceived the idea and topic since this was a requirement for the completion of an MBA qualification. Author² guided that study since he was the principal researcher and supervisors for the study. Author¹ and Author² contributed to the identification and development of the theory while Author¹ performed the computations. Author² verified the analytical methods. Author² supervised the findings of this work. All authors discussed the results and contributed to the final manuscript.

- **Funding:**

The author(s) received no financial support for the research, authorship, and/or publication of this article

- **Data availability**

The data that support the findings of this study are available on request from the Author¹. The data are not publicly available due to personal and biographic information of respondents and confidentiality agreement with respondents.

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Using Regression Analysis to Evaluate the Impact of Training and Development on Organisational Performance: A Study of Selected Automotive Industries

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Keywords

training and development, organisational performance, case study automotive

Abstract

For organisations to be successful, they rely not only on the tangible assets of the organisation, such as machinery equipment but also on the knowledge and expertise of the employees. This study aims to understand the impact of training and development on organisational performance, of selected automotive companies in the Eastern Cape. Motivation for the study resulted from automotive companies spending millions on training and development initiatives without receiving maximum return on the investment made. The quantitative research approach used a descriptive method with online questionnaires designed to evaluate the aspects of management support on training and development initiatives as well as the training design approach used. The findings revealed that there is a positive relationship between training and development with organisational performance. Management's support was found to be an area of weakness when it comes to training and development of the employees. This study contributes to improved performance in an automotive industry through the utilisation of human capital skills and knowledge acquired through training and development initiatives.

1. Introduction

Since the advent of democracy in South Africa in 1994, the South African government has initiated different constitutional and legislative frameworks to make it possible for public-sector organisations to enhance their delivery of public goods and services (Mafini & Pooe, 2013). Regardless of these initiatives and solutions government takes, poor performance is still a challenge to deal with in the public-sector as government departments continue to fail to provide effective service (Paarlberg & Zuhlke, 2019). An employee will get a promotion until he/she reaches his/her highest levels of incompetence. However, training can still be a part of any attempts at succession planning, and for such reason's employee attitude is critical.

Training is significant and an imperative tool for the organization to restore the performance of all the personnel for organizational growth and success (Paarlberg & Zuhlke, 2019). It is useful to both employers and employees of an organization. An employee will turn out to be more efficient and productive if he/she is trained well. Firms can create and enhance the quality of the present employees by providing widespread training and development. Training is important not only to expand productivity but also to motivate and inspire workers by allowing them to know how essential their jobs are and providing them all the information, they require in carrying out those jobs (Chhetri, Gekara, Manzoni & Montague, 2018). The general advantages received from employee training are increased job satisfaction and motivation and morale, resulting in financial gain, increased efficiencies in processes, increased capacity to adopt new technologies and methods, increased innovation in strategies and products and reduced employee turnover.

1.1 Research problem

Training is a systematic process to enhance employee's skill, knowledge, and competency, necessary to perform effectively on job. Overall, training affects organizational competitiveness, revenue, and performance. Unfortunately, most of the governmental, private organization and international

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organizations are not recognizing the importance of training to increase their employee's productivity, and when the economy slows or when profits decline, many organizations first seek cuts in their training budgets. This will lead to high job turnover then increase the cost to hire new employees, which slows down the organizational profitability. According to (Patgar & Vijayakumar, 2014), most employees are ready to remain with their current organization when they are aware of an opportunity and realise the experiences they have with the current organization will lead them to expand their careers and growth and ultimately performance increases. Furthermore, in the past, employee retention strategies such as compensation, environment, growth, relationship and support have been empirically proven to attract, retain and nourish good people in organization, which also led to increased organisational performance.

The insights of employees on training have a great importance on the success of any organization. If the employees are pleased with the organisation's training policies, this will positively impact the organization's productivity. The insights or attitude of employees is changed into positive or negative behaviour. It is important to ascertain how the employees view employee-training policies of the organization. It is also important to investigate how management view the Training Policy of the organization. Some view training and development as a waste of time and capital that would have been used in the production of goods and services that will increase profit to the organization. Sometimes, the concern that an employee could leave the organization after training affects the employees training and sometimes makes it unforeseen and unsystematic. To fill this gap, the researcher is compelled to conduct a study on the effects of training on employee and organizational performance with focus on processes and procedures of identifying skill gaps, training design and delivery style and employee perception towards training in the automotive industries in Eastern Cape.

This research study will therefore be focused on the following problem statement:

To evaluate the impact of training and development on organisational performance in the selected automotive industries.

The study will also aim to answer the following research questions:

- What are the factors that influence training design on employee performance?
- What impact does training design have on employee performance?
- What recommendations can be offered to organizations to help in training design?

2. Literature Review

2.1 Theories underpinning this study

Motivational theories, including Maslow's Hierarchy of Needs Theory and Vroom's Expectancy Theories were developed to guide the organisation in understanding motivation and how motivation influence employee performance (Kuranchie-Mensah & Amponsah-Tawiah, 2015).

2.1.1 Vroom's expectancy theory model

The Expectancy Theory was developed in 1964 by Victor Vroom and pronounced that an employee will be motivated if he believes that good performance will lead to financial rewards such as bonuses, promotions, or a salary increases that will in return lead to the achievement of own personal goals. Vroom's expectancy theory assumes that if an employee believes that his effort will lead to a specific performance level, and that it would lead to various reward outcomes such as promotion and increases, this perception is reflected as expectancy.

2.1.2 Maslow's Hierarchy of needs

Managers, in determining the motivational factors and rewards that influence an employee's performance (Kuranchie-Mensah & Amponsah-Tawiah, 2015), regard Maslow's theory on motivation and needs as a powerful management tool for the utilisation. The physiological needs in the Maslow theory, is the need that focus on sustaining an individual's life such as food, water, and oxygen as the basic needs that must be satisfied before the next level can be satisfied (Kuranchie-Mensah &

Amponsah-Tawiah, 2015). Secondly, an employee’s safety needs in terms of job security and emotional development. The third level of the hierarchy is the employee’s social needs that deal with the social aspects of the individual, such as their need to be loved, to belong, and to be accepted by others within the organisation (Kuranchie-Mensah & Amponsah-Tawiah, 2015). In the hierarchy, Maslow refers to an individual’s esteem needs as being satisfied when employees are motivated through power, status, and self-confidence resulting from their own achievements. Self-actualisation is on top of the hierarchy that symbolises the employee's drive to become “someone” and this need at the apex of the hierarch is achieved by maximising one’s own full potential and self-fulfilment.

2.2 Conceptual Framework

An organisation’s ability to perform and obtain and retain a competitive advantage in the industry, and achieving the overall strategic objectives depends on the performance of the employees (Amoatema & Kyeremeh, 2016). This then creates the need for managers and leaders to build strong relations with the employees to encourage performance; therefore, it is important for leadership to understand what motivates the employees to maintain high-performance. Organisations strive to understand and meet employees' different needs and what motivates them to perform and exceed. Some employees are motivated by money and other financial rewards; however, Amoatema and Kyeremeh (2016) indicate that employees who are motivated and committed to the organisation are more appreciative of recognition by management. Motivated employees are loyal and produce high quality work and improved teamwork by creating a supportive working relationship (Hussein & Simba, 2017).

According to Noe (2017), training is a planned effort to “facilitate learning of job-related competencies, knowledge, skills, and behaviours by employees”. The goal of training the organisation’s employees is for them to master the knowledge, skills, and behaviours highlighted in training and apply it to the daily activities. Figure 1 will be used as the conceptual framework for the study.

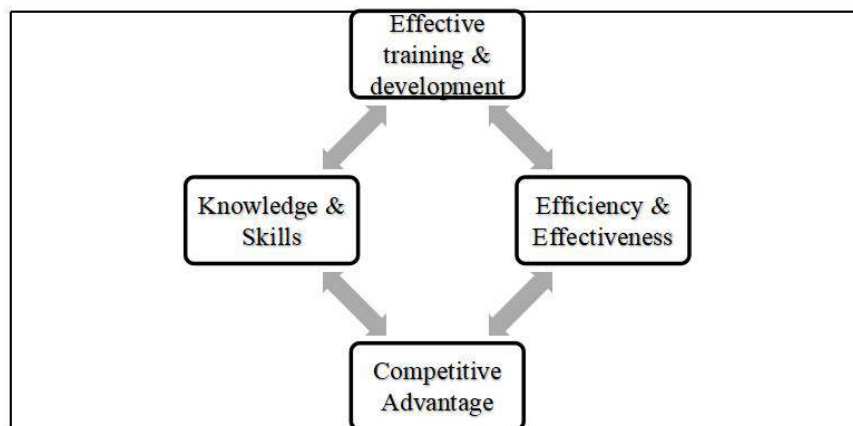


Figure 1: Conceptual framework for the study

2.3 Training and Development

From the human resources perspective, training and development is a process of transferring knowledge, skills and abilities needed to carry out a specific activity or task (Ross, 2019). According to Berkley’s 2019 training and development strategy is defined as the plan by which an organization ensures its employees have the knowledge, skills, and abilities to meet the organizations objectives, in meeting the organizations objectives training strategy must consider the following:

- The internal organizational environment
- The company strategy
- The external environment

The organisation will conduct a needs analysis to identify the gaps after which a specific training or development plan will be developed. The training strategy must be in alignment with the cooperate

strategy integrated within the larger HR infrastructure. Internal organizational dimensions and developed needs assessment are to ensure a plan is a success. (Ullah, 2019) indicates that all organizations have limited resources it is incumbent upon them to always have better decision makers on board. Businesses and organizations spend a good amount of money and time to educate and train employees. Based on the literature above, it is evident that training and development is about transferring skills and knowledge to employees to meet the organizational strategic objectives and sustainability in the market.

2.4 Organisational performance

According to (Maduenyi & Oluremi, 2015) the existence of an organisation is to achieve the business's goals and objectives. Organizational performance is the ability to accomplish its aims using resources in a properly structured manner. According to (Abbas, 2019) performance is an individual output, which is influenced by the requirements of the organization, therefore effective, and efficient leadership becomes critical towards the success and sustainability of the organisation.

2.5 Effect of Training on a Learning Organisation

Research by (Mpofu & Hlatywayo, 2015) revealed that quality training and development programmes are imperative for better employee performance within the organisation. The same study established that the standard of employee training and development programmes within the municipality was high (confirmed by 53.33% of the employees). The findings of the study also disclosed that quality programmes and highly qualified facilitators result in quality employee that enhances employee performance and improves service delivery. Mpofu and Hlatywayo, (2015) tend to agree that training does have a positive impact on the performance of employees, In addition, the preceding researchers have seldom linked their studies to training initiatives costs.

2.6 Globalisation in the automotive industry

Vladimir (2020) indicates that the global economic system is experiencing difficult times nowadays, especially because of negative consequences of COVID-19 pandemic situation. A similar statement can be applied to the economies of European countries. Among the most affected sectors, it can be ranked automotive industry, which is one of the most dominant contributors to European GDP. (Humphrey & Memedovic, 2020) state that the automotive sector has global character and represents a capital-intensive industry characterized by vertical integration. Automotive industry also contributed to innovation development and fundamental industrial production changes The ecosystem of automotive industry creates a workplace for 14,6 million Europeans, what represents 6,7 percent of total European Union employment, (Nieuwenhuis, 2015)

2.7 South African view on automotive industry

According to (Barnes, 2017), the South African on the automotive industry is faced with numerous challenges; these have been widely documented in previous literature reviews. The industry consequently remains a marginal player globally contributing only 0.65 % of global vehicle output. South African industry performance therefore resembles that of a developed economy, as opposed to a developing economy with low levels of vehicle ownership, and a growing population. It is a strategic position that has ensured the national's government's target support for the industry over the last couple of decades. South Africa's automotive industry has steadily established itself as a global engine for manufacturing and exporting vehicles and components. Many major multinational firms to source components and assemble vehicles for the local and international markets use SA. Indications are that although the industry had a slow start in 2016 with lower-than-expected domestic sales and export recorded thus far, a substantial increase in new vehicle exports was expected to materialize from March 2016 onwards. At this stage, industry projections for exports during 2016 showed an improvement of around 12% on the previous year. According to (Van Rensburg, 2020) the South African Vehicle Industry is the largest manufacturing sector in South Africa's economy. According to the National Association of Automobile Manufacturers of South Africa (Naamsa), the motor industry contributes 6, 8% to the country's gross domestic product (GDP).

2.8 Methods of training and development

(Daniels, 2021) For any company, its employees have utmost importance as they play a primary role in the growth of the business. The organization needs to ensure its employees are equipped with the necessary knowledge and skills. Just to increase their productivity and for this purpose, there is no other way safer and better as compared to training. There are many techniques and methods of training and development that helps business in equipping its employees to improve their work quality and speed. Interactive training methods are one of the best ways to keep your employees engaged, which helps them in perceiving a lot more information. Moreover, then when they are not interested in the training material. This includes a friendly environment, humour, and the usage of attractive and eye-catching learning materials.

2.9 Relationship between Employees' Performance and Organizational Performance

According to (Mayhew, 2020) companies that make investments expect something in return – a return on investment for the money they spend on training their employees and supporting professional development for their staff. In its September 2018 article, HR Technologist suggests four unique ways to measure an organization's ROI for investing in employee training. Pre- and post-training assessments measure the effect that training has on their skill sets or capabilities. Data mining is another useful method for measuring the relationship between training and employee performance. Employees who spend more time in training or devote time and energy to employer-provided training are likely to improve performance. Post-training evaluations such as surveys that ask employees how valuable

Finally, assessing the level of engagement in the training program may be effective in determining how receptive employees are to the employer-sponsored training. High engagement levels may suggest the employee is acquiring skills and best practices that he will use in performing his job duties.

3. Methodology

This section presents an overview of the research methodology utilised in this study, which included an extensive explanation of the population of the participants, description of data collection instruments, the procedures utilized to answer each research question, data collection, and the measurements in the study. Figure 2 the research onion was used to explain the research approach.

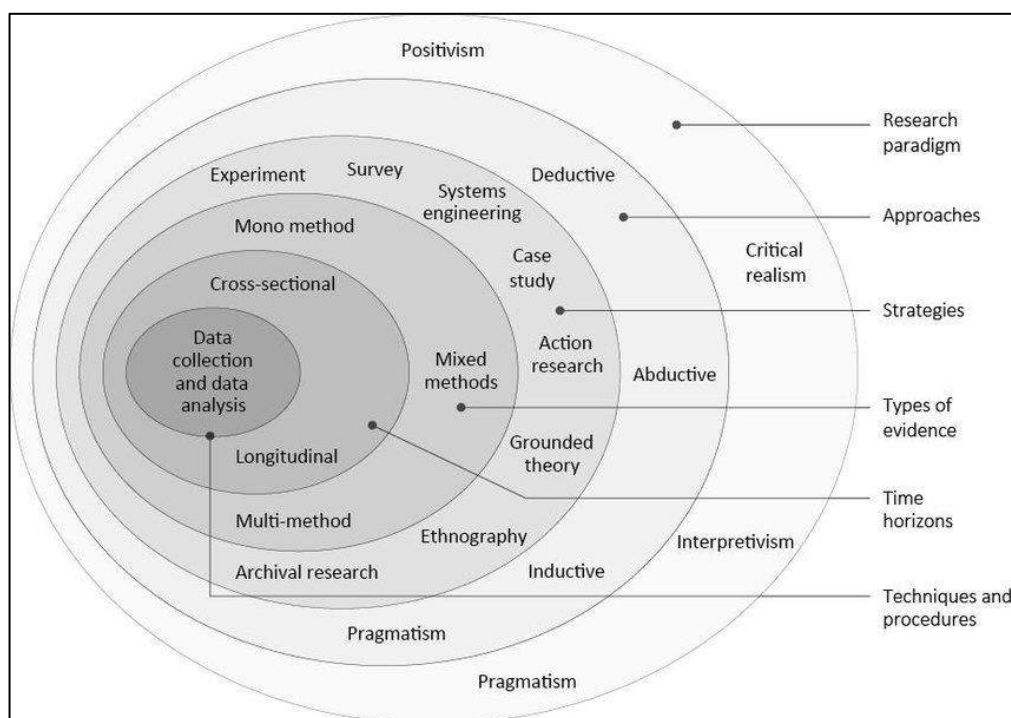


Figure 2: Research onion
Source: Saunders & Lewis and Thornhill (2014)

3.1 Research paradigm

The dominant research paradigm for the study was positivist, which according to (Oates, 2014), facilitates the researchers' ability to comprehend how various variables within a particular system influence one another or influence a particular dependent variable.

3.2 Research approach

A quantitative research methodology approach was adopted for this research study. According to (Bryman & Bell, 2015), quantitative research usually emphasises quantification in the collection and analysis of data and as a research strategy it is deductivist and objectivist, it incorporates a natural science model of the research process, in a particular one influenced by positivism.

3.3 Research strategy

The main strategy employed for this study was an analytical survey, which utilised the self-administered questionnaires to gather data. The study employed an empirical style of research as the study is mainly based on observing the effect of training and development on organizational and employee performance for the Automotive Industries in Eastern Cape.

3.3.1 Survey research strategy

The survey questionnaire was hand distributed or emailed online to respondents with the link to answer the questionnaires.

3.3.2 Population and sample framework

A population is the full group of potential participants to whom the researcher wants to generalize the study's findings and or the portion of the universe that the researcher has access to (Cavus & Kapusuz, 2015). A total of 300 respondents were identified as possible respondents (table 1).

Table 1: Target population and sample size

Occupation	Population	Sample	Percentage of the sample
Skilled Technical -Artisans	100	30	30%
Semi- Skilled Operators	100	30	30%
Senior Management & Professionally qualified Admin staff	100	30	30%
Total	300	90	90%

The target population is the total company workforce that is comprised of 300 employees. The sample of respondents was selected based on a predetermined criterion of active participation in the production of car parts within the organizations. The criteria were that the participants had knowledge of the automotive industry and had an opportunity to attend trainings in their respective places of employment. The sample consisted of at least 100 employees from various occupational levels in the selected companies. From the sample batch 10 respondents were selected for an in depth questioner for the pilot study.. The selection of these respondents formed a suitable sample size to provide adequate data relevant to the research problem. The artisans which are skilled labour used as respondents in this research paper are employees who are inclusive of electrical engineers and the professionally qualified employees comprises of employees on middle and managers who are decision makers.

3.3.3 Central limit theorem (CLT)

The CLT is a statistical theory that states that given a sufficient large sample size from a population with finite level of variance, the mean of all samples from the same population will be approximately equal the mean of the population (Leedy and Omrod, 2014). In this study, the sample size was large enough to satisfy this theorem, thus attaining a normal distribution.

3.4 Pilot study

A pilot study can be defined as a small study, which serves as a preliminary test on a sample population to test the research techniques, the data collection instruments, and the strategies selected to conduct a research study-using questionnaire in preparation for a larger study on a target population. The questionnaire generated was pilot tested by the researcher on five participants who provided feedback on the completeness and data validation of the input fields of the questionnaire. Amendments were made, and the researcher before final distribution finalized the questionnaire.

3.5 Data collection

Data collection, according to Creswell (2015), is a set of interconnected tasks intended to gather rich data that will be utilised to answer the study's research objectives. In this study, primary research data was collected via probability, simple random sampling, by the use of an online self-administered questionnaire.

3.6 Questionnaire design

The format of the questionnaire and structure has an impact on data collection. A questionnaire must be constructed in such a way that the researcher can obtain useful data from respondents (Zikmund, 2017). For this study, the questions were grouped into different sections. The questions were designed using the Likert scale which measures variables from strong agreement to strong disagreements or vice versa.

3.7.2 Questionnaire distribution

A link to the Survey Monkey website was emailed to the sample population, and they were requested to click on the link to access the online questionnaire.

3.8 Pilot study

Once ethical clearance was confirmed with UNISA SBL, the questionnaires were handed to eight employees in the procurement department of the study organisation. The pilot study results were analysed using SPSS 25 results showed a Cronbach Alpha of 0.90. This high Cronbach Alpha indicates that the research instrument was quite dependable. To avoid data contamination, the results of the pilot study were not included in the main study.

3.9 Administration of questionnaire

Before the survey was released, each participant received a letter of consent and participation.

3.9.1 Collection of questionnaires

All responses were collated within the survey monkey platform in the form of spreadsheets, graphs and diagrams. This information was further downloaded and uploaded into SPSS version 25 for further analysis.

3.9.2 Storage of questionnaire data

A copy of the data was downloaded onto the researcher's computer. The data on the computer was kept secure because the computer is password protected and only the researcher has access to it.

3.10 Data analysis

Data was analysed via SPSS a statistical software for quantitative research.

3.11 Validity and Reliability

The Cronbach's alpha test was used to support the outcomes of this study's internal consistency reliability test. With an average of 0.90, the Cronbach's Alpha reliability test revealed very high and hence reliable (Creswell, 2015) .

4. Findings

The findings in this paper are also aimed at meeting the study's research questions. The study is based on the primary data collected from employees working in the automotive firms in the Eastern Cape

with the help of a self-administered questionnaire. The study includes sample selected using purposive sampling.

To provide reliable and compelling results, the main survey results were evaluated using statistical techniques and software (SPSS). A statistician was engaged to assure authoritative and accurate results. The internal reliability of the research instrument's constructs was determined using the Cronbach alpha coefficient. Table 2 shows the reliability statistics for the study.

Table 2: Training and Development Factor

Questionnaire Statements	Factor Loading
Training programs are designed based on the requirements of either the task or the employee deficiency of their ability on task.	0.863
I have regularly participated in training and development programs within the organisation.	0.802
My organisation has a training and development strategy, that is aligned with the organisation business strategy.	0.799
The organisation conducts extensive training programs.	0.740
Employees who have regularly participated in training and development within the organisation perform better.	0.523
My manager and/or Human resources unit, shows full willingness to help me to apply what I have learned in training.	0.508
Cronbach Alpha	0.799
Mean & Std. deviation	4.013 ± 0.606

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

4.2.2 Organisational Performance Factor

The results of organizational performance factor analysis are presented in Table 3. The KMO was 0.877 and the associated Bartlett's Test of Sphericity was statistically significant as $p \leq .001$. The extracted factor accounted for 66.2% of total variance. The mean of the scale for the respondents was 4.002 and Cronbach's alpha for this scale was 0.896. Based on mean of the training and development factor (mean= 4.002, sd = 0.725), the respondents mostly agree with the performance taking place in the workplace after implementing training and development initiatives.

Table 3: Organisational Performance Factor

Questionnaire Statements	Factor Loading
The training I have received has helped me to enhance quality of product service.	0.871
Training and development has an impact on the overall performance of staff in the organisation.	0.863
Training enables me to improve my capability.	0.832
There are many opportunities for career development after completing training.	0.820
Training enables me to improve my knowledge and skills.	0.750
My performance has increased after completing training.	0.734
Cronbach Alpha	0.896
Mean & Std. deviation	4.002 ± 0.725

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

4.3 Correlation of the factors

The correlation between training and development factor and organizational performance factor is presented in Table 4. The Spearman rank correlation coefficient was used to describe the strength of the relationship between the factors. Cohen (1998) suggest the following values as guidelines of

strength of relationship: $r = 0.100$, small; $r = 0.300$, medium; $r = 0.500$, large. Thus, there is medium strength of relationship between training and development factor and organizational performance factor ($r = 0.471$).

Table 4: Correlations

	Training & Development Factor	Organisational Performance Factor
Training & Development Factor	1	0.471**
Organisational Performance Factor	0.471**	1

** . Correlation is significant at the 0.01 level (2-tailed).

4.4 Results of the Regression Analysis

Results of regression analysis, which sought to explore the influence of training and development on performance of employees in the organization, are presented in Table 5. The regression model accounts for about 22% of organizational performance. A significant and positive relationship was found between training, development, and performance of employees in the organization.

TABLE 5: Regression Results

Predictors	Organisational Performance
Constant	1.739
Training and Development	0.564
R	0.471
R ²	0.222

The regression equation is represented as:

$$\text{Organisational Performance} = 1.739 + 0.564 (\text{Training \& Development})$$

The regression equation provides the expected change in the dependent variable (organizational performance) for a one-unit increase in the independent variable. So, a unit change in training and development initiatives, results in 0.564 unit increase in performance by the employees in the organization.

5. Discussion

The aim of this study was to evaluate training and development to organizational performance.

5.1 Research question one

Research question one was to determine where the strengths and weaknesses of the training design. It was concluded that training programs based on distributed surveys reveal both weaknesses and strengths related to this objective. The first weakness was that both departmental managers and HR unit are not willing to support employees in their professional development, in a competitive environment, that is critical for management and employers to allow employees to implement what that they have learned during training. The second weakness was the need for training tailored to employee skill gaps. Training programs must be tailored to the demands of the job or the lack of skills or responsibilities of employees.

5.2 Research question two

Research question two was to determine the influence of training design on employee performance, one must determine whether planned meteorological training sessions and those presented to the workforce actively improve service quality and employee performance. Based on the survey results, an identified strength was that scheduled training improved product service quality and that the training had an impact on the overall performance of the organization's employees. The first weakness of this goal was that the planned training did not improve personal development and the second weakness was that the training did not increase employee performance. These weaknesses indicate that it is critical that training be based on current employee needs.

5.3 Research question three

Research question three was to make recommendations on how organizations can improve their training design, it is important to assess employee training needs as well as training objectives. When training current employees to learn a new skill, employers must first understand what the employee already knows and how they can improve. The need may come from a global organizational and strategic vision, from departments or teams, or from an individual assessment. Assessing the organization's needs can determine training objectives. These objectives become the basic components of the organization's training concept. Finding weaknesses in previous training or in employee knowledge is critical to the success of the organization once training objectives are established, the type of training become critical. All training design should fit within an existing budget or be proposed with a budget. Action plans need action. Adults also learn through action and interactive learning through workshops, hands-on exercises, activities, role-plays, and group discussions are hands-on training that involve staff. It is also important to understand that some learners are visual and others are auditory, so employers must be diverse in their training process. Effective training helps learners engage in lessons that flow logically for better learning, with resources well spent and an outcome consistent with learning and training objectives. Reviewing and adapting plans can lead to new assessments and training goals. Training design is a means of continuous improvement.

5.4 Relationship between employee performance and organizational performance?

This study found that most respondents agreed that there is a positive link between the organisations is training programs and the organization's strategies. The results confirmed more training and development programs are stabilizing the organization. This study also found that, the organization has implemented detailed development programs aimed at improving employee performance. This study found that employee training acquired during training sessions improved employee performance. As a result, T&D has improved the performance of the automotive industry.

6. Research Limitations

The study was limited to a sample of 90 employees from three automotive companies in the Eastern Cape. Due to the limited number of study participants, the investigator could not make broader generalizations as there were also challenging time constraints. One of the major limitations of the study was the use of a single organisation and general implications where made, which is not entirely representative of the pathology industry within South Africa.

7. Recommendations

Based on the results of the study, the following suggestions are recommended: alignment of the organization's training and development strategy with the organization's business strategy, training and development of employees based on the lack of required skills. Guarantee a sufficient budget to execute training initiatives. Inclusion of all relevant stakeholders in training analysis sessions. This study suggests that other studies could use a qualitative method, or both qualitative and quantitative methods, to determine the impact of training and development on business performance. Using a qualitative method, the researcher will be able to collect data through in-depth interviews, which provide more data than questionnaires. A comparative study can examine the impact of training and development on business performance. A study can determine the impact of training and development on executive performance. Management support should improve within the organisations by also allowing employees to make their own decisions.

8. Managerial Implications

HR staff to clearly communicate training and development guidelines to all employees, as well as the training opportunities available within the organization. Identifying training needs and establishing training objectives. Training committees such as skills development forums that oversee training design and implementation of training programs. Mostly according to the three theories of motivation discussed above, motivation of employees is critical. This study found that employee training acquired during training sessions improved employee performance. As a result, T&D has improved the performance of the automotive industry.

9. Conclusion

This study found that employee performance increases after completing a training program. Training enables employees to improve their skills, knowledge, and abilities to better perform their tasks. The study also suggests that investing in employee training would not only lead to employee motivation and excellent customer service but would also make a major contribution to improving organizational performance. The study found that participating in a training program exposes employees to great career development and has a positive impact on the overall performance of the workforce. This confirms that there is a significant correlation between employee performance and organizational performance.

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INFORMATION AND TECHNOLOGY



SMEs' Perceptions of the Use of AI and Cobots

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Keywords

Perceptions;
AI;
Cobots;
SMEs;
New technology.

Abstract

The twenty-first century economic development agenda places emphasis on the critical role that SMEs play in economic growth, job stimulation and poverty alleviation. Digital innovation, which is enabled through modern IT technologies, is an important resource to scale SMEs. Artificial Intelligence (AI) and robotics are new technologies used to improve business practices and productivity. AI is incorporated in technologies, such as Robotic Process Automation (RPA) to automate and improve business processes. Physical human-robot interaction, through the use of collaborative robots (Cobots) is increasingly being used in modern production environments.

The aim of this study was to determine the perceptions of the use of AI and Cobot technologies by SMEs. An on-line questionnaire was developed and distributed to SMEs in South Africa. The results from 295 respondents indicated that only 17% had a positive perception of the use of AI and Cobot related technologies. The results indicate that only 25% the respondents see the potential for SME benefits stimulated by the new technologies. This paper offers new insights on the perceptions and adoption of modern technologies, such as AI and Cobots by SMEs. The value derived from this study is its accent on the significance that modern technologies could have on improving productivity, innovation and global competitiveness, specifically amongst SMEs, if they were adopted.

1. Introduction

Small to medium-sized enterprises (SMEs) are challenged to remain competitive and innovative in various aspects of their business (Bélanger-Barrette, 2015). Small and mid-size enterprises are businesses that maintain assets and revenues or a number of employees below a certain threshold. Every country has a different definition of what constitutes a SME (Liberto, Berry-Johnson & Kvilhaug, 2021). SMEs in South Africa are defined as an enterprise with one or more of the following characteristics, namely less than 200 employees, an annual turnover of less than R64 million, capital assets of less than R10 million and direct managerial involvement by the owners (Du Toit, Erasmus & Strydom, 2009).

Digital innovation is defined as products, processes or business models that are perceived as new and require changes on the part of the adopters and are enabled by IT (Ramdani, Raja & Kayamova, 2021). Globally, organisations are undergoing digital transformation and automating business processes and functions. The use of software, instead of people, to perform particular tasks has become common practice. Artificial Intelligence (AI) and Robotic Process Automation (RPA) are two technologies that are changing and improving business processes and functions (Calitz, Poisat & Cullen, 2017).

Cobot technologies have been introduced as one of these drivers of process innovation (Harbour & Schmidt, 2018) as they characterise consistency, reliability and prove to achieve a sustainable competitive advantage. Cobots are smaller in size than traditional caged robots, which allows workers to work side-by-side with Cobots. Introducing Cobot technologies into production environments,

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redirects human workers to more stimulating tasks, increasing employee engagement (Harbour & Schmidt, 2018). This creates an engaging environment, which supports learning and development of the workers (Bélanger-Barrette, 2015; Strohkorb & Scassellati, 2016) and dictates the supposition of developing native skills (Harbour & Schmidt, 2018). The adoption of Cobots by SMEs however, has been slow, due to many challenges SME management face (Schnell & Holm, 2022).

South Africa's workforce consists of mainly semi-skilled workers and one of the purposes of new technologies incorporating AI and Cobots is to reduce repetitive tasks and promote skill development (Harbour & Schmidt, 2018; Calitz et al., 2017). Approximately 1 332 000 jobs located in the manufacturing sector would be at risk with the introduction of Cobot technologies (Calitz et al., 2017; Skhosana, 2017; Statistics South Africa, 2017). However, research indicates that automation does not lead to job substitution but re-allocation (Acemoglu & Restrepo, 2018) of tasks by accompanying and enhancing human labour (International Federation of Robotics, 2017). A study amongst 94 participants, Schneiders and Papachristos (2022) found that worker perceptions regarding the benefits of robots were positive and their possibility of creating new jobs. At the backdrop of this supposition are the imperfections of introducing automation due to the slow adjustment of the economy and labour market (Acemoglu & Restrepo, 2018). Arguably, the slow adjustment may weaken the productivity gains.

Industry 4.0 is changing the manufacturing industry and business processes (Rodriguez-Bustelo, Batista-Foguet & Servalos, 2020). South Africa is a prime market for the implementation of automated robotic systems as the manufacturing sector contributes 13% of the GDP (Brand South Africa, 2018). Automated robotic systems can increase the efficiency, productivity and profitability of this sector and other sectors, boosting the country's GDP (Li, 2017). Cobots and automation could yield improvements in sustainability and cost performance for SMEs, including SMEs in emerging economies (Schnell & Holm, 2022).

Despite the advantages of deploying Cobots, the integration of these technologies among small enterprises remains limited (Schnell & Holm, 2022; Schröder, 2016). This paper attempts to determine SMEs management's perceptions of the use of AI and Cobots in South Africa. Research on AI, RPA and Cobots is typically focused on large enterprises within the manufacturing sector. Arguably, the integration of AI and Cobot technologies in SMEs offers socio-economic gains.

This paper begins by discussing SMEs, the latest trends in AI and Cobot technologies. Second, the growth and impact of Cobots is explored. Thirdly, the theoretical value is explained. The remainder of the paper offers the research design, approach and method followed by a discussion of the empirical results. Thereafter, the limitations and future research for the future use of Cobot technologies and AI are provided. The conclusion and implications of AI and Cobot technologies to support economic development are addressed. A discussion of SMEs' willingness to invest in AI and robotic technologies follows Calitz et al., (2017) to reveal the impact of a so-called disinvestment mind-set on global competitiveness and globalisation extremities.

2. Problem Investigated

Digitalisation, Industry 4.0 and sustainability are some of the most dominant megatrends in the latest decades for SMEs (Reka, Tick & Kárpáti-Daróczi, 2022). Digital transformation is the adoption of digital technologies by an organisation. Digitisation and automating business processes, specifically the use of software, instead of people to perform particular tasks, have become common practice.

Artificial Intelligence (AI), Robotic Process Automation (RPA) and the use of Cobots are three rapidly advancing technological domains altering business processes and how the workforce operates. However, the adoption of modern technologies, such as AI and Cobots has been relatively slow amongst SMEs (Schnell & Horm, 2022) and specifically in South Africa (Poisat, Calitz & Cullen, 2021; Calitz, et al., 2017). This results in the research problem investigated in this study, namely that *SMEs' owner and management perceptions of the use of AI and Cobots has not been assessed in South Africa.*

3. Research Objectives

The main research objective of this study was to determine the use of modern technologies, specifically the use of AI and Cobots by South African SME owners and managers. The authors included an additional factor, *Modern Technologies* in a national study that was conducted amongst SMEs to determine the factors influencing the scalability of SMEs in South Africa. The national survey was conducted by means of an online questionnaire and through the use of fieldworkers. The online questionnaire was distributed using various SME databases and organisations, such as The Business Place and The Nelson Mandela Bay Business Chamber.

4. Hypotheses

AI, RPA and the use of Cobots are increasingly being implemented in businesses (Poisat, et al., 2021). The adoption of modern digital technologies, including the use of AI, RPA and specifically Cobots by SMEs has been slow. The challenges SMEs face when adopting technologies, such as Cobots are safety, workforce involvement and training and the lack of long-term strategies (Schnell & Holm, 2022). This study hypothesises that the understanding of the perceptions of the use of AI and Cobots by SMEs' owner and management in South Africa, could help with persuading them to adopt modern technologies, which would improve SME performance and productivity.

5. Literature review

5.1 SMEs

SMEs are defined as independent businesses and categorised by size class, which is based on two thresholds: number of employees and turnover. In South Africa, small enterprises have 11-50 employees and medium enterprises have 51-250 employees. The total annual turnover varies by size and sector (European Commission, 2016).). SMEs in South Africa are defined as an enterprise with an annual turnover of less than R64 million and must have direct managerial involvement by the owners (Du Toit, et al., 2009).

SMEs that scale up create opportunities to access markets or new sectors, which leads to an expansion of the workforce. However, the OECD (2020) states that 70% to 80% of small businesses fail in the first year and approximately half of the balance succeed over the next five years. SMEs that are innovative and competitive contribute to a country's GDP per capita growth and employment (Mason & Brown, 2014; Stam, 2015). Therefore, SMEs need to adopt innovative practices to compete and survive in the long run. This suggests that SMEs should shift focus to the exploitation of resources, such as IT technologies to benefit from economies of scale.

Modern IT technologies can create value for SMEs by improving business productivity, which can lead to the transition in their lifecycles and new business models (Goldfarb & Tucker, 2017). Gaynor (2002) contends that SMEs' scalability relies on their adoption of modern technology as it supports expansion, growth and sustainability. Technology adoption improves forecasting, reduces transaction costs and increases turnover and market access notwithstanding access to knowledge and skills (OECD, 2018; Kumar & Ayedee, 2020). Therefore, SMEs can draw benefits, such as integration into corporate value chains and the international market. In this line, the scalability of SMEs relies on their ability to integrate technology into their business models.

5.2 Artificial Intelligence (AI)

The last two decades have witnessed major advances in AI and robotics (Acemoglu & Restrepo, 2018). AI is increasingly being incorporated into business applications. It is intelligence designed by humans and demonstrated by machines (Cheng-Tek-Tai, 2020). AI is a wide-ranging tool that enables people to rethink how to integrate information, analyse data and use the resulting insights to improve decision making (West & Allen, 2018). AI, a major technology driving the fourth industrial revolution (4IR), is going to change not only the way things are done, how people relate to others, but also our knowledge of self (Cheng-Tek-Tai, 2020). The 4IR and its accompanying technologies can provide solutions to the challenges facing the African continent (Foresight Africa, 2020). One of the

key enabling technologies identified in the Foresight Africa 2020 Report that will drive Africa's digital economy is AI (Travaly & Muvunyi, 2020). AI has the following benefits:

- AI reduces the time taken to perform a task;
- It enables multi-tasking and eases the workload for existing resources;
- AI enables the execution of complex tasks without significant cost outlays;
- AI operates 24x7 without interruption or breaks and has no downtime;
- AI augments the capabilities of differently abled individuals;
- Reduces human error;
- Enhanced customer experience;
- AI has mass market potential; it can be deployed across industries; and
- AI facilitates decision-making by making the process faster and smarter (Saidyutivaishnavi, 2021).

AI could benefit SMEs in developing countries and the above-mentioned benefits would enhance SME performance if understood and adopted.

5.3 Cobot technologies

Collaborative robots (Cobots) follow a design that can be easily programmed and work safely with humans, which complements the flexibility required in complex production environments. Modern manufacturing production processes are increasingly implementing the use of Cobots, thus responding to challenges faced by industrial automation that could not deal with uncertainties in the past (El Zaatari et al., 2019). Their introduction is seen as a process innovation to meet mass customised production, while supporting the operator's well-being in Industry 4.0 (Matheson et al., 2019; Michaelis et al., 2020; Liu & Wang, 2021; Rossato et al., 2021). Well-being in this context refers to improved ergonomics in response to physical and cognitive fatigue experienced by human operators. Human-robot collaboration (HRC) allows humans and Cobots to coexist to carry out tasks and actions providing the balance between automation and flexibility (Calitz et al., 2017; Mautua et al., 2017; Michaelis et al., 2020). The HRC collaboration shows that humans and Cobots interact in close physical proximity, which requires strict safety measures, but reaps benefits in terms of floor space, quality and production efficiency (El Zaatari et al., 2019; Malik et al., 2019). Additionally, research conducted by Oracle revealed that workers showed more trust in robots than managers (Redwood Shores, 2019).

The introduction of Cobots allows organisations to diversify their labour by enhancing native abilities and supports the increasing role of customisation and complexity in the market environment (Harbour & Schmidt, 2018). Diversification of the workforce presents opportunities to acquire competencies, such as programming, which align with Industry 4.0 requirements (Michaelis et al., 2020).

Against this background, Cobots are an industrial development of value-adding and an alternative to traditional robots. This leads to factories, production and cities becoming smart (Varghese & Tandur, 2014), which creates benefits for modern industry, automation and the future of work.

5.4 The growth and impact of Modern Technologies for SMEs

As the market environment becomes more competitive, SMEs are challenged in many aspects of their business and product/process innovation is central as a growth driver. Cobots are integral to the supposition of innovation (Bélanger-Barrette, 2015) and anchored in continuous improvement. SMEs are hesitant to invest in Cobots and automation technologies (Schnell & Holm, 2022). However, the declining costs of Cobots, including the manual labour challenges and trade union pressure, may change the cost of investment in the future (UR, 2022; MCISA, 2017). Notably, a goal of Universal Robots, an international Cobot manufacturer and automation organisation is to make robots accessible to SMEs (UR, 2022).

Process innovation ties into the three aspects of digitisation that are central to Industry 4.0 (Calitz et al., 2017; Geissbauer, 2016). Calitz et al. (2017) and Geissbauer (2016) describe digitisation through a company's operations, its products and services and proximity to clients. Schröder (2016) asserts

that a strong association exists between the company size and the integration and execution of Industry 4.0. The results presented by Schröder (2016) are based on a survey conducted on SMEs in the manufacturing sector and explicitly indicate that large and medium-sized companies are advanced in the integration of automation process innovation compared to small companies.

The benefit of this integration is charged by the assertion that Cobots support human workers by reducing repetitive tasks (Calitz *et al.*, 2017) and interchangeably reducing the presence of defects and entrenching robust safety measures (Tobe, 2015). Equally, companies that leverage Cobots have reported cost savings (Acemoglu & Restrepo, 2018; Hollinger, 2016; Calitz *et al.*, 2017) and this may indicate a sustainable competitive advantage, specifically for SMEs (UR, 2022; Schröder, 2016).

The report by Bélanger-Barrette (2015) discusses an Illinois-based machine shop whose integration of Cobots doubled its production. Similarly, MIT researchers at a BMW factory investigated the effect of Cobots and found that the cooperative process reduced the idle time by 85 percent (Tobe, 2015). This process innovation proves to entrench economies of scale through high-efficiency gains (Schröder, 2016).

Safety and health have surfaced as key challenges in manufacturing environments. Heavy industrial robots are caged to keep humans safe and out of harm (Harbour & Schmidt, 2018). Cobots have changed the traditional work environment as they have integrated sensors, as well as soft and rounded surfaces to minimise the risk of impact, pinching and crushing (UR, 2022). Trust is a vital component in any workplace. Workers must be able to trust their colleagues and their capabilities, top management and the overall organisation to remain productive. In a study conducted by Sadrfaridpour, Saeidi, Wang and Burke (2014), it was concluded that when the robot's performance matches human expectations, the human worker's trust in the robot increases.

Organisations are placing greater focus on their long-term sustainability by developing strategic investments to ensure their endurance and sustainability (Shaw, 2015). Cobots and automation are good examples of an investment that can yield improvements in both sustainability, cost performance and improve competitiveness, however the adoption by SMEs has been slow (Schnell & Holm, 2022). One of the biggest areas that organisations need to address to improve their sustainability performance is product and process innovation. Cobots offer a solution to these organisations due to their high level of flexibility and ability to be programmed to handle many product variations and sizes (International Federation of Robotics, 2017; Harbour & Schmidt, 2018).

Rapid advances in AI will open up new opportunities in various sectors such as healthcare, logistics and services, which need productivity improvements to manage the rapidly growing population (Saidyutivaishnavi, 2021; Skhosana, 2017). Technology will continuously shape the way people work in the future as it has great potential to make improvements in productivity, innovation, global competitiveness and the potential to improve the quality of products and services.

5.5 Theoretical perspective

This paper is guided by the diffusion of innovation theory. The diffusion of innovation theory describes process improvement through innovation and its diffusion within social networks. This theory explains how innovation is accepted by a population. According to Calitz *et al.* (2017) the diffusion of innovation theory is influenced by the innovation-decision process. Diffusion is a social process that occurs among people in response to learning about an innovation with the typical dependent variable being the time to adopt (Dearing & Cox, 2018). This process comprises five stages, namely: knowledge, persuasion, decision, implementation and confirmation (Rogers, 1983). A critique of the diffusion of innovation theory is that it assumes all innovation offers efficiency. However, some innovation may not be a cultural fit and may affect an organisation negatively (Miles, 2012). Diffusion, or the lack thereof, is often well explained by three general sets of variables: the positives and negatives of the innovation, the characteristics of the adopters and social influence (Dearing & Cox, 2018).

6. Research Methodology

6.1 Research design

The aim of this study was to determine the perceptions of the use of AI and Cobots by South African SMEs. The study followed a positivistic research paradigm, which is deductive in nature. The research design was descriptive and the survey research strategy was used to collect the data. A cross-sectional study using a quantitative survey was conducted using a questionnaire. An additional factor, *Modern Technologies* was included in a national study that was conducted amongst SMEs to determine the factors influencing the scalability of SMEs in South Africa. The data were statistically analysed using descriptive and inferential statistics.

6.2 Questionnaire development and sampling data method collection

Primary data for the national survey were collected by respondents completing an online questionnaire and through the use of fieldworkers. The online questionnaire was distributed using various SME databases and organisations, including SME databases of *The Business Place* and *The Nelson Mandela Bay Business Chamber*. The questionnaire included a five-point Likert scale, ranging from 1 - Strongly Disagree to 5 - Strongly Agree. The questionnaire was captured on the survey tool, QuestionPro. The questionnaire was operationalised from literature and included the factor, *Modern Technologies* that was used to determine how SMEs perceive the use of AI and Cobots in South Africa.

6.3 Validity and reliability

Pilot studies are undertaken to determine problems that might compromise the data collection for the study. A pilot study was conducted with three academics and three SME owners. The pilot study was used to test the wording, layout and content of the questionnaire as well as whether the statements in the questionnaire were easy to understand (van Teijlingen & Hundley, 2002). Validity and reliability are essential for academic rigour (Heale & Twycross, 2015). Content validity was ascertained in the pilot study test where academics and a selection of SME owners determined the validity of the statements regarding the content. Cronbach Alpha Coefficient was used to assess the reliability of the factor, *Modern Technologies*, discussed in this paper and was 'excellent' ($\alpha=0.88$).

6.4 Sample

The questionnaires were distributed by an accompanying covering letter that explained the objective of the study and that respondent participation was voluntary. A representative sample of $n = 295$ responses were received. Equally, potential respondents from the organisations mentioned were reminded four times to respond. The sample of 295 comprised of SMEs operating in various sectors predominantly in Nelson Mandela Bay (NMB) and is reflected in Table 1. Purpose and snowball sampling methods were used in this research study. The sampling frame included owners and representatives of SMEs in South Africa. A representative refers to senior managers working in the SME and who can offer insights due to the nature of their role. The respondents ($n=295$) included 72% ($n=211$) SME owners and 28% ($n=84$) managers.

7. Results and Findings

The gender of the participants in the study were 52% male and 48% female (Table 1). The majority of the respondents (79%, $n=233$) were in the age range 26 years to 55 years. The majority of the respondents were Black (47%, $n=134$), followed by White (26%, $n=75$) and only 6% ($n=17$) were Asian. Fifty-five percent ($n=164$) of the respondents had a post-matric qualification and Table 1 further indicates the years the SME was in operation and B-BBEE level. Sixty-nine percent ($n=202$) of the SMEs employed 0 to 10 employees, 38% ($n=86$) were sole proprietors, 40% ($n=90$) Pty (Ltd) and 22% ($n=51$) closed corporations.

Table 1: Biographical data

Gender	Male	Female	Total		
	153 (52%)	142 (48%)	295 (100%)		
Age	18-25 years	26-35 years	36-45 years	46-55 years	56-65+ years
	43 (15%)	72 (24%)	90 (31%)	71 (24%)	19 (6%)
Race	Asian	Black	Coloured	Indian	White
	17 (6%)	134 (47%)	45 (16%)	17 (6%)	75 (26%)
Education	< Matric	Matric	Diploma	Degree	PG Degree
	24 (8%)	107 (36%)	73 (25%)	66 (22%)	25 (8%)
Years in operation	< 1 year	2-3 years	4-5 years	6-15 years	16+ years
	33 (11%)	65 (22%)	70 (24%)	98 (33%)	29 (10%)
Number of employees	< 5	5-10	11-20	21-100	51-200
	117 (40%)	85 (29%)	51 (17%)	74 (25%)	19 (7%)
B-BBEE level	Level 1	Level 2-4	Level 5-8	Non-compliant	
	63 (21%)	76 (25%)	27 (9%)	129 (45%)	
Business registration	Pty (Ltd)	Sole Proprietor		Closed Corporation (CC)	
	90 (40%)	86 (38%)		51 (22%)	

In addition, seventy-two percent (n=123) of the respondents indicated that they own the SME and seventy-three percent (n=214) of the respondents indicated that they have female representation at management level. Sixty-eight percent (n=201) of the SMEs were VAT registered and 87% (n=237) were legal entities. Seventy percent (n=119) said they were profitable and 30% (n=52) indicated they break-even or run at a loss. Sixty-eight percent (n=194) indicated they use social media to promote their business and 81% (n=232) said that social media boosts their business network. Seventy-three percent (n=214) had female representation at management level and 23 SMEs were owned by females.

Table 2 – SMEs per in industry

Industry	Number of respondents (n=295)	(%)
Agriculture, Fishing and Forestry	7	2%
Catering, Accommodation and Other Trade	65	22%
Construction	16	5%
Community, Social and Personal Services	29	10%
Electricity, Gas and Water	5	2%
Finance and Business Services	18	6%
Retail and Motor Trade and Repair Services	89	30%
Transport, Storage and Communications	11	4%
Manufacturing	12	4%
Wholesale Trade	21	7%
Services	22	7%

Table 2 indicates that most respondents were either in the automotive (30%) or hospitality (22%) sector. Nelson Mandela Bay, where the survey was conducted is one of the motor industry hubs of the country. The hospitality sector is important for the South African economy. Nationally the number of people employed in the tourism industry in 2019 was 2,879,330 (Statista, 2022). However, the COVID-19 pandemic had a major impact on the industry.

The respondents were asked where they obtained the startup capital for their businesses. Table 3 indicates that startup capital to fund the SME business was obtained from personal savings (74%), loans from banks (25%) and family and friends (22%). Funding to grow the business were from personal savings (61%) loans from banks (30%), family and friends (16%) and retained income (12%). No access to venture capital funding was recorded. The lack of finance creates growth stagnation. Ogujiuba, et al. (2020) indicate that the South African economy cannot be sustained without developing sustainable SMEs.

Table 3: Business funding (n=295)

Capital obtained	Start-up	Grow business
Personal Savings	74% (n=217)	61% (n=180)
Family and Friends	22% (n=66)	16% (n=47)
Government Financial Agencies	6% (n=18)	9% (n=27)
Government Non-Financial Agencies	1% (n=2)	1% (n=2)
Loans from Banks	25% (n=74)	30% (n=89)
Venture Capitalists	1% (n=4)	2% (n=7)
Micro Financing	2% (n=6)	3% (n=8)
Retained Earnings	n/a	12% (n=35)

Thirty-eight percent (n=114) of the respondents indicated that their businesses were B-BBEE levels 1 to 3 compliant, 18% (n=52) levels 4-8 and 44% (n=129) indicated they were non-compliant (Table 4). Fifty-one percent (n=121) of the SMEs were 100% black owned and 23 respondents indicated that their businesses included female black owners.

Table 4: B-BBEE level and Ownership

B-BBEE level (n=295)		Black Ownership (n=238)		Black Female Ownership (n=67)	
Level 1	21% (n=63)	None	18% (n=42)	None	66% (n=44)
Level 2	7% (n=22)	< 51%	16% (n=39)	<31%	21% (n=9)
Level 3	10% (n=29)	> 50%	15% (n=36)	>30%	13% (n=14)
Levels 4-8	18% (n=52)	100%	51% (n=121)		
Non-compliant	44% (n=129)				

Table 5 provides an overview of the general perception of the sample of 295 SMEs surveyed and shows that of the 295 SMEs only 91 (31%) indicate a positive (Agree or Totally Agree) perception of AI and Cobot technologies. The results in the table link to the assertion made by researchers (Schnell & Holm, 2022; Calitz et al., 2017; Schröder, 2016) regarding the general unwillingness of SMEs to make large investments and integration in modern technologies. The lack of knowledge of the use of modern technologies is very evident from the results in Table 4. AI and Cobots would enhance and improve SMEs performance, however a lot of work must be done for them to realise the benefits (Schnell & Holm, 2022).

Table 5: Frequency distribution – Modern Technologies (n=295)

Items	μ (S.D)	Disagree		Neutral		Agree	
		n	%	n	%	n	%
I am aware of AI and Cobots and their benefits	2,81 (1.22)	111	38%	93	32%	91	31%
I know of businesses that are using AI and Cobots	2,61 (1.18)	145	49%	78	26%	72	24%
In our SME we have discussed the use of AI and Cobots	2,26 (1.04)	176	60%	90	31%	29	10%
AI and Cobots could be effective in our business	2,73 (1.14)	116	39%	109	37%	70	24%
AI and Cobots could solve labour problems	2,82 (1.10)	98	33%	124	42%	73	25%
AI and Cobots could make our business more profitable	2,89 (1.14)	92	31%	126	43%	77	26%

The ANOVA statistical analysis results (Table 6) did not indicate any statistical differences ($p < .0005$) for the biographical variables for the factor Modern Technologies.

Table 6: Univariate ANOVA Results – Modern Technologies

Effect	F-value	D.F.	p-value	Cohen's d
Gender	1,04	1; 270	,309	n/a
Age	0,60	4; 270	,662	n/a
Race	2,76	4; 270	,028	n/a
Education	0,44	4; 270	,778	n/a
VAT registered	0,95	1; 287	,331	n/a
Legal entity	1,13	1; 287	,290	n/a
B-BBEE level	2,67	5; 287	,022	n/a

8. Managerial Implications

This study attempts to examine the perception of the use of AI and Cobots technologies by SMEs in a developing economy. Academic literature indicated that AI and Cobots as innovation drivers towards achieving a sustainable competitive advantage for SMEs (Ogujiuba et al., 2020; Schnell & Holm, 2022). Notably the implications of limiting product, process and business model innovation strain economic growth. On the other hand, automation develops a displacement effect on the labour market as it reduces the demand for labour and wages (Acemoglu & Restrepo, 2018). Acemoglu and Restrepo (2018:1) also highlight that a countervailing force against automation exists. This is characterised by the deepening of labour intensive tasks to increase the labour share, thus, balancing the impact of automation.

Calitz *et al.* (2017) highlight that SMEs are hesitant to invest in AI and Cobot technologies. Equally, small companies are noted to be slow to integrate automation process innovation (Schröder, 2016) in their business models. SMEs need to rethink their strategy and upgrade their workforce by focusing on skills and not just certification. The embracing of digitisation requires lifelong learning. Technology-enabled jobs will require higher skills levels and greater application of expertise and management, which will necessitate a significant investment in human capital (Rajagopaul, Chui & Singh, 2019). The technology gains through improvement in productivity and strategic infrastructure would improve the country's productivity and GDP. The generic objective of maximising reward should drive the behaviour (Silver, Singh, Precup & Sutton, 2021). The 'rewards' of digitisation need to be explained to SME management and the adoption thereof encouraged.

AI and Cobot technologies in SMEs require comparative research and a longitudinal study to afford external validity. Guided by the concept of sustainable development, competitive advantage and the diffusion of innovation theory, this study hypothesised that AI and Cobot implementation have the potential to make improvements in productivity, innovation, global competitiveness and improve quality of products and services.

The study by Calitz *et al.* (2017) states that the reduction in Cobot costs and the current labour challenges will change the adoption of Cobots over the next five years. Calitz *et al.* (2017) and Tobe (2015) advocate that SMEs represent over 6 million businesses worldwide. For this reason, SMEs are predicted to drive the installation of Cobots and the use of AI enabled technologies. This assertion also aligns to the goals of Universal Robots (UR, 2022) of making robot technology accessible and affordable for SMEs.

9. Conclusions, Limitation and Future research

Modern technologies, such as AI, RPA and the use of Cobots are increasingly being used in organisations world wide. SMEs are forced to accept digital transformation and have to automate business processes and functions to remain sustainable and competitive (Ogujiuba et al., 2020). SMEs are however slow to adopt new technologies, such as AI, PRA and Cobots in business processes (Poisat et al., 2021; Schnell & Holm, 2022). The South African workforce consists of mainly semi-skilled workers and one of the drivers of modern technology adoption is to reduce repetitive tasks and increase operational efficiency using AI and Cobots (Harbour & Schmidt, 2018; Calitz et al., 2017).

The results from the study indicate that SMEs may lack knowledge or exposure to AI and Cobot technologies and the economies of scale entrenched in deploying them for productivity gains. The theory used within this paper is underpinned by the diffusion of innovation theory and offers a fundamental critique that relates to the innovation decision process (Dearing & Cox, 2018). In terms of the variables that affect diffusion, it appears that the benefits of digitisation have not been convincing for SMEs in this study and that the characteristics of the adopters do not favour the adoption of new technologies. Education and training regarding new technologies and their benefits need to be initiated so that the SMEs can be competitive and benefit from new technology adoption.

Education, training and re-skilling of workers were identified as important factors for the introduction of Cobots (Poisat et al., 2021). Poisat et al. (2021) further indicated that retrenchment and unemployment did not feature as a major theme in their study. Industrial workers with first-hand robot experience had more positive perceptions regarding the benefits that robots can bring and their possibility of creating new jobs (Schneiders & Papachristos, 2022). Therefore SMEs have to consider these technologies, for if they do not keep up with development, workers may be out of a job soon. The costs of introducing AI and Cobot technologies remains a challenge.

While this paper attempted to determine the perceptions of SMEs regarding the use of AI and Cobot technologies, there are several limitations to consider. The research was conducted in South Africa just before the COVID-19 pandemic period and the majority of the respondents were from the Eastern Cape province. It is important to exercise caution when generalising the results as a more representative sample from other regions in South Africa must be obtained. Future research may attempt to explicate factors like the innovation decision process to induce the implementation of AI and Cobot technologies as a limiting variable. In addition, the best business practices and lessons learned by the automotive manufacturers who have successfully implemented collaborative work environments in Africa need to be explored. Future research should include the adoption or perception of modern technologies by the different sectors.

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Exploring The Impact Of Industry 4.0 Technologies On Mining Logistics

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Keywords

Industry 4.0; Technology adoption; Mining-industry; Mining logistics; Big Data Analytics; Blockchain; Internet of Things; 3D Printing; Artificial intelligence

Abstract

In recent years, the costs of performing logistics activities have increased globally. Industry 4.0 technologies are being implemented within the logistics sector on a global scale to reduce costs and optimise logistics functions. Technologies such as Big Data Analytics, 3D Printing, Artificial Intelligence, Robotics, Cloud Computing, and the Internet of Things have all been identified as crucial Industry 4.0 technologies set to impact logistics systems in various ways.

The South African mining industry is critical from a Gross Domestic Product (GDP) and employment perspective, and it is important for the country that it performs effectively and efficiently. The mining industry is, however, characterised by traditional processes and a lack of technological innovations. To that end, the industry's logistical capabilities are not advanced compared to other sectors. The successful implementation of Industry 4.0 technologies could significantly contribute to the performance of the mining industry's logistics systems. However, limited research has been conducted on the use and impact of Industry 4.0 technologies in the South African mining industry. Therefore, this study aims to explore the potential impact of key Industry 4.0 technologies on logistics within the mining industry, with a specific focus on the critical logistics functions of transportation, inventory, and warehouse management.

1. Background

Over the past decade, organisations within the supply chain have been confronted with myriads of changes and complexities. Globalisation and technological advancements have been the key drivers of these changes. In addition, there have been vital changes to consumer behaviour resulting in an exponential increase in customer demands for goods and services. The growth in the need and demand for various products has resulted in a dire need for changes in processes within the supply chain to rapidly satisfy these demands (Makan & Heyns, 2018). Furthermore, to gain a competitive advantage, organisations within the supply chain are mass producing, which has caused an intensification in demand for natural resources as well as a surge in the cost and need for logistical services such as warehousing, transportation, and inventory management (Makan et al., 2018; Skapinyecz, Illés, & Bányai, 2018).

A study conducted by Langley Jr. and Penske Logistics (2019) illustrates the logistics cost within various industries, including fast-moving consumable goods (FMCG), retail and energy and extraction (mining). Their study explicitly displays the increase in logistics cost at approximately 10% of revenue in 2019. Reducing logistic costs has become a global trend, and leaders within the logistics industry are attempting to attain operational excellence by adopting advanced technologies to streamline processes (Bag, Wood, Xu, Dhamija & Kayikci, 2020). When looking at South Africa, it is notable that the logistics cost ratio to Gross Domestic Product (GDP) is significantly higher due to having smaller economies and the travelling distance between trading partners is much longer

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(Netherlands Enterprise Agency, 2020). The logistics cost within the mining industry is high, amounting to approximately R56 billion in costs associated with transportation, warehousing, and inventory management (Havenga, 2015).

According to Arnoldi (2019), mining is an important industry when considering South Africa's future economic growth. The industry employed approximately 456 438 people in 2018 and has an enormous proportion of foreign direct investment (FDI) (Minerals Council South Africa, 2019). Furthermore, in 2018, the industry provided R91 billion in direct fixed investment to advance the South African economy and its infrastructure (Minerals Council South Africa, 2019). Like other industries, logistical functions relating to transportation, warehousing and inventory management are also used within mining operations. They are a crucial function when observing the success or failure of operations within the mining supply chain and logistics (Zuñiga, Wuest & Thoben, 2015). On average, 11% of the revenue that is gained by the mining industry is used to cover the cost associated with logistical functions (FSE, 2018). This cost illustrates the substantial amounts paid for logistics function within the mining sectors, especially since logistics is seen as merely an ad-hoc function within mining. Reducing these costs can be challenging.

In addition, operations within the mining industry are conducted in a traditional siloed approach with a lack of integration between departments. The resultant effect of this is that there are inefficiencies within operations. These barriers can be overcome by implementing advanced technologies (Gorner, Kudar, Mori, Reiter & Samek, 2020). In a study conducted by Connell (2019), utilising Industry 4.0 technologies provides the mining industry with an opportunity to uncover value-driven opportunities. As such, this study aims to explore Industry 4.0 technologies in the logistical functions relating to transportation, warehousing, and inventory management within the South African mining industry, as well as the possible benefits and challenges experienced.

2. Literature review

The 21st century has brought about numerous changes in how organisations operate. As such, achieving overall objectives requires organisations and industries to embrace technological advancements which have been considered a developmental change factor (Vitez, 2019). Technology has also altered how consumers behave and their need for instant gratification. In a study by Barreto, Amaral and Pereira (2017), it is observed that with technological development, customer demands are increasingly dynamic, forming new service delivery challenges for organisations. These changes in customer behaviour have been considered one of the critical drivers of logistics system changes (Yin, Stecke & Li, 2018). The changes and escalation in demand for goods and resources have also resulted in economic growth globally. A study conducted by Chakamera and Pisa (2021) explicitly reveals that servicing these demands requires an efficient and agile logistics function and network.

Focus has been placed on the South African mining industry and its logistical functions as it is seen as a key global player (Sikhakhane, 2012). On that account, it is imperative to understand the role of the South African mining industries and the impact that Industry 4.0 have on the logistical function within the industry. According to Vegter (2019), South Africa is the world's largest producer of manganese, chromium and platinum; the second largest producer of palladium, the fifth largest exporter of coal and the third largest exporter of iron ore.

In addition to the above, the industry makes a substantial contribution to the South African GDP. On average, the mining industry contributes 8.3% to the GDP and obtains export revenue of more than 40% (Minerals Council South Africa, 2020). In 2016, the GDP had a downward trend and dropped to 6th place due to an increase in operational cost and a decrease in demand (Minerals Council South Africa, 2017). This decline could result from the lack of technological advancement within the industry attributed to challenges such as siloed processes, lack of investment and low commodity prices (Minerals Council South Africa, 2017). The mining industry is faced with numerous other challenges that hinder the industry from meeting its objective, predominately concerning its logistical functions, and reducing its costs.

2.1 Logistics within the mining industry

Logistics plays a pivotal role within many industries, including mining. Logistics aims to improve efficiency and effectiveness within organizations' activities. This means having seamless information flow and appropriate management of materials that ultimately lead to enhanced operational performance and competitive advantage. In addition, through proper management of inventory, transportation and warehousing operations, the logistical cost can be reduced. In South Africa, the importance of logistics is highlighted by the sum spent on logistics cost, which is 11.8% of the country's GDP (Havenga, Simpson King, de Bod & Braun, 2016). As per Bester (2022), logistics costs represent a substantial percentage of total delivered costs, and the disadvantage is that most South African mining industries are far from port, approximately 1000 km away. In addition, mining industries within South Africa are dependent on exports and imports. They rely on logistic functions that deliver, maintain and warehouse parts and components efficiently and effectively (Yaping & Bossman, 2021).

Transportation is a non-value-adding activity, consuming excessive resources and money (Farquharson, Mageto & Mekan, 2021; Shao, Xu & Li, 2019). Further to the above, freight transport is faced with numerous challenges such as safety, quality, flexibility, reliability, punctuality, and efficiency, which has created a need for efficient transport management at a lower cost (Farquharson, et al., 2021). This is supported by Schönsleben (2016), who clearly states that effective and efficient transportation management will have a favourable impact on performance by decreasing costs.

In a report produced by PWC (2019), operating costs within the mining industry in 2019 increased by 8% compared to the previous year and transportation costs represented 8% of the composition of the operating cost amounting to R27 billion. The indicated amount is magnanimous and may be reduced, using technological advancements, thereby creating an efficient logistical operation (PWC, 2019). It is noteworthy that warehousing management and inventory functions are directly impacted by transportation. For this reason, it is vital that value-adding strategies are implemented so that execution of product movement from origin to destination is done effectively and efficiently.

Managing warehousing processes is fundamental due to the impact it has on logistics performance, and for this reason, it must be managed together with transportation costs. Implementing proper warehouse management processes ensures a seamless flow of activities and products, enhances inventory management, and indirectly decreases transportation costs.

Inventory management's role is to ensure that the business maintains the desired stock level (Oluwaseyi, Onifade & Odeyinka, 2017). Inventory management impacts the organization's financial performance since sourcing, transporting, and storing inventory incurs costs (Markou & Corsten, 2021). Optimising and managing inventory as part of the overall logistics function and cost is essential (Öztürk, & Vergili, 2018). Between 2018 and 2019, a significant increase in production within the mining industry resulted in an increase in inventory cost, which negatively affected the logistics cost (PWC, 2019). The inventory cost increased from R67 billion to R78 billion, constituting an 11% increase in costs.

Taking the above into consideration, it is evident that the mining industry is inundated with these problems. Additionally, limited technological advancements to manage logistics have resulted in the industry losing valuable opportunities to improve its financial objective and logistical performance (MacDonald, 2020).

2.2 Logistics challenges within the mining industry

Technological advancement within the mining industry in South Africa is limited, and as a result, managing processes pertaining to warehousing transportation and inventory is challenging (Sánchez & Hartlieb, 2020). These complexities are further intensified due to operational challenges face internally and externally. One such challenge is when products are delivered late, incorrect, or short leading to an increase in excess stock, which may become obsolete and thus cause unwanted

inventory costs (Thuynsma, 2015). Also, manual entries of critical documentation and mismanagement of master data resulting in inaccuracies are challenges faced by the industry (Singh, van Sinderen & Wieringa, 2017).

It is also seen that transportation, warehousing and inventory management are managed by individual mine personnel leading to a lack of visibility and control of processes (Trace, 2017). A study by Isherwood (2013), found that 75% of the executives within the mining industry expressed that visibility caused by siloed approaches was a major challenge. Also, reliance on manual systems such as using spreadsheets to manage logistic processes has been seen as time-consuming due to input errors. Mengistu (2016) stated that errors in spreadsheets are often undetected, leading to flawed and uninformed operational decisions.

Additionally, heavy reliance on spreadsheets can deter the process making it an arduous task to determine the operational performance accuracy (Mengistu, 2016; Gomez, 2021). This ultimately results in penalties pertaining to contractual quality as well as lost opportunities in improving logistical functions. However, implementing Industry 4.0 technology can potentially enhance logistical processes within the mining industry.

2.3 Industry 4.0 and its impact on logistical functions

There has been a revolution in how organisations operate within the supply chain. The change can be attributed to the implementation of Industry 4.0 technologies. Industry 4.0 is regarded as a “mandatory change catalyst”, outlined by digitalisation and automation of organizational processes. Organisations focusing on continuous improvement and research and development acknowledge Industry 4.0, thereby gaining a competitive advantage (Marcos, Suárez, Marcos, Fernández-Miranda, Marcos, Peralta, & Aguayo, 2017). Industry 4.0 technologies such as Big Data Analytics, interconnectivity via machines and human-to-machine interfaces, Internet of Things (IoT), 3D printing, automation, artificial intelligence (AI), and augmented reality bring about innovative disruptions (Marr, 2021; Rabah, 2018). Introducing these technologies within logistics is imperative considering the escalation in global demand for logistics to goods and services efficiently and effectively (Kache & Seuring, 2017; Barata, Rupino Da Cunha & Stal, 2018).

According to Oztemel and Gursev (2020), digitalisation of the logistics network can result in a paradigm shift from a traditional logistical activity to one that is technologically advanced with an interconnected intelligent network that can enhance efficiencies and processes. Amalgamating the physical and digital environment initiates innovation by collecting, transforming, and using data in collaboration with AI and business analytic tools, thereby producing optimized business solutions (Reinartz, Wiegand & Imschloss, 2019). Introducing Industry 4.0 within the logistical processes brings about numerous advantages such as the availability of real-time information, enhanced operational efficiency, improved safety, collaborative planning and execution and advanced logistics network design (Ardito, Petruzzelli, Panniello & Garavelli, 2019; Ghobakhloo & Ching, 2019). Applying Industry 4.0 technologies can also automate logistical functions within the mining industry, thus creating an efficient and effective digital and physical platform. This would create an opportunity for mining houses to reduce waste and become industry leaders (Bechtsis, Tsolakis, Vlachos & Srail, 2018).

As previously stated, transportation, warehousing and inventory are important logistical components within the mining industry with huge cost implications. Improving these functions using Industry 4.0 technologies is paramount. Warehousing plays a pivotal role in logistics because it is the essential hub in the flow and storage of goods. Embracing Industry 4.0 can initiate intelligent warehousing solutions which can transform the way the industry meets future needs (Schrauf & Bertram, 2016). Warehouse management systems (WMS) supplemented with Industry 4.0 technologies, bring about numerous advantages such as (Barreto, et al., 2017):

- Combining WMS with the transport function will bring about information sharing about product arrival times, allowing the warehouse to prepare and optimise just-in-time and just-in-sequence deliveries.
- Visibility of inbound and outbound shipments can be created using Radio Frequency Identification (RFID), utilising track and trace data. In addition, using RFID and an intelligent sensor will enable real-time visibility of inventory levels, averting out-of-stock situations and stock losses and preventing loss of sales and unnecessary costs.
- WMS, in conjunction with Automated Replenishment (AR), can improve slotting, picking, and staging activities, ultimately improving productivity levels.

To reiterate, transportation cost within the mining industry is seen as the most significant operational expense, and as such, implementing innovative technology can assist in reducing cost. According to Santos and Piva (2020), a key asset within transportation is Transport Management System (TMS). Integrating TMS with Order Management Systems and WMS enables end-to-end visibility across the mining value chain (Li & Zhao, 2019). In addition, using TMS with the Internet of Things (IoT) allows operational effectiveness and cost savings by utilising data to provide load configuration and optimise route scheduling (Wanganoo & Patil, 2020).

Inventory as a logistics function includes raw material, work in process (WIP) and finished goods, which are moved through the value chain using warehousing and transportation functions. Inefficiencies in inventory management can be a risk without proper optimisation of inventory, and as such, the need for intelligent technology is fundamental to reducing cost while simultaneously meeting supply and demand (Singh & Verma, 2018; Silver, Pyke & Thomas, 2016).

2.4 Industry 4.0 Technologies

Literature has identified numerous Industry 4.0 technologies, some of which are more prominent and are likely to impact logistics (Tay, Lee, Hamid & Ahmad, 2018; Bai, Dallasega, Orzes, & Sarkis, 2020; Sishi, & Telukdarie, 2020).

2.4.1 Internet of things (IoT)

IoT is an Industry 4.0 technology that enables “object-to-object” communication by connecting physical objects, systems, and services (Zhong, Xu, Klotz, & Newman, 2017). The implementation of IoT technology within logistics has resulted in the progression of intelligent packing processes, storage pallets, packaging methods, material handling equipment (MHE), warehousing storage and containers (Radivojević, Bjelić & Popović, 2017). Implementing IoT technologies and integrating this with suppliers and 3PLs who provide transportation, warehousing, and inventory management services can result in improved efficiency and end-to-end logistics functions within the South African mining industry (de Vass, Shee & Miah, 2021).

2.4.2 Big Data Analytics

Big Data Analytics allows the storing, communication, interpretation, and analysis of data, enabling decision-making and business systems that enhance efficiency throughout the value chain (Wang, Gunasekaran, Ngai & Papadopoulos, 2016). The use of Big Data Analytics facilitates sharing of information such that logistical functions of forecasting, planning and network optimisation are supported efficiently (Ilin, Simić, & Saulić, 2019). From a study by Raman, Patwa, Niranjana, Ranjan, Moorthy and Mehta (2018), it is observable that Big Data Analytics within the mining industry can foresee any disruptions in the supply of components predict demand, assess warehousing and transportation requirements, and monitor and forecast inventory.

2.4.3 Cloud Computing

Cloud computing allows users to access the internet from numerous devices without usage, capability or capacity constraints. Cloud systems measure and monitor the resource usage rate, which can discern inefficiencies, thereby introducing corrective action to improve and optimise problem areas (Mladenović, 2018). The advantage of having Cloud computing within logistics is that it provides

flexible and efficient access to information technology services and presents an opportunity to implement value-added, innovative solutions within the supply chain. As such, the mining industry will save a significant portion of cost due to not having to invest in expensive software and hardware infrastructure to manage transportation, warehousing, and inventory management (Mladenović, 2018).

2.4.4 Artificial Intelligence (AI)

According to Popenici and Kerr (2017), AI refers to "computing systems that can engage in human-like processes such as learning, adapting, synthesising, self-correction and use of data for complex processing tasks". AI is essential to the future of logistics, primarily due to the rising uncertainties in customer demands (Plastino & Purdy, 2018). By implementing AI, organisations can forecast and plan routing and scheduling activities and future warehousing and inventory location planning (Boute & Udenio, 2021).

2.4.5 Blockchain

Blockchain as per Viriyasitavat and Hoonsopon (2019) is defined as, "A technology that enables immutability, and integrity of data in which a record of transactions made in a system is maintained across several distributed nodes that are linked in a peer-to-peer network". The mining industry suffers from inefficiencies, lack of transparency and traceability which leads to a dire need for improvements in processes. Blockchain as an emerging technology is seen as a possible solution to improve inefficiency and provide transparency within the supply chain (Loklindt, 2017:5). Additionally, blockchain emerged as one of the top 10 strategic technology trends for 2017 which "promises a model to add trust to untrusted environments and reduce business friction by providing transparent access to the information in the chain" (Gartner, 2016).

2.4.6 3D Printing

3D printing, as per Shahrubudin, Lee and Ramlan (2019), is defined as "digital fabrication technology or additive manufacturing, which creates physical objects from a geometrical representation by successive addition of materials". The creation of three-dimensional objects is possible with 3D printing technology, and when implemented within the mining industry, the focus is on spares and components (Xu, Rodgers & Guo, 2021). Leonida (2019) expressed that by 3D printing spare parts within the mining industry, sustainable logistics efficiencies are achieved because of lower inventory costs.

2.4.7 Robotics

Rosenthal, Selvaraj and Veloso (2016), define autonomous robotics as "service robots which autonomously generate and execute plans to successfully perform tasks for humans, appropriately handling the uncertainty of their surroundings". Within the logistics sector, robotic brings about numerous benefits which includes increased safety levels, reduced errors, enhanced quality of goods, optimised labour, improvements in operational service levels and reduction in cost (Radivojević & Milosavljević, 2019). By introducing robotics within the mining sector, large warehouse and storages yards can be managed in a safe and efficient manner. Moreover, the movements of goods can be supervised and controlled smartly resulting in stock accuracy and increasing visibility.

2.5 Industry 4.0: Benefits for Logistics

Implementing Industry 4.0 within logistics brings numerous benefits such as customization, agility, accuracy, and efficiency.

2.5.1 Customisation

Having a diverse range of procedures and process packages such as mass customization, micro-segmentation, and advanced scheduling allows companies to provide customers with varied choices that assist in resolving logistical problems. Orders placed by customers can be completed by implementing digitized warehousing solutions and using delivery techniques such as drones (Zawadzki & Żywicki, 2016; Hofmann & Rüscher, 2017; Ghobakhloo, 2018).

2.5.2 Agility

Industry 4.0 technology assists in real-time planning that improves an organization's competitiveness (Oztemel & Gursev, 2020). By utilising technologies such as Big Data Analytics and demand planning, organisations can predict customer demands, simplifying transport routing and scheduling, warehousing functions, and inventory management (Barreto, et al., 2017).

2.5.3 Accuracy

Accuracy within logistics is paramount and can be achieved through Industry 4.0 technologies. Real-time information, accuracy and consistency in data, promoting end-to-end visibility, are obtained by Industry 4.0 technologies (Miragliotta, Sianesi, Convertini & Distanto, 2018). Organisations can access high-level customer services information and critical measurements such as on-time-in-full, including live vehicle and inventory tracking (Ghadge, Kara, Moradlou & Goswami, 2020).

2.5.4 Efficiency

Automating physical tasks and seamlessly sharing information across the value chain can strengthen logistical functions (Pereira & Romero, 2017). The logistical cost can be reduced by sharing data across the supply chain using Industry 4.0 technologies and ensuring visibility and transparency. This ultimately enhances the logistical function, creating an efficient logistic network (Ghadge et al., 2020). Although there are numerous benefits from implementing Industry 4.0 technologies, challenges are also experienced.

2.6 Industry 4.0: Challenges for Logistics

Implementing Industry 4.0 technologies can be complex due to numerous challenges that are encountered. Common challenges include lack of management support, legal issues, resistance to change, a lack of expertise, and financial constraints because huge investments are required (Glas & Kleemann, 2016; Luthra & Mangla, 2018; Ghadge et al., 2020).

2.6.1 Lack of management support

The absence of management support can make implementing Industry 4.0 a problematic task (Gökalp, Sener & Eren, 2017). Collaboration amongst management is essential when implementing Industry 4.0 within logistics. Collaboration provides unified decision-making and breaks down silo practices leading to efficiency.

2.6.2 Legal issues

Cyber security risk is a considerable concern when implementing Industry 4.0 technologies, primarily since critical data and information are being transacted. As such, one should pay attention to security, and privacy needs when introducing Industry 4.0 technologies (Müller, Dotzauer & Voigt 2017; Kamble, Gunasekaran & Sharmac, 2018).

2.6.3 Resistance to change

Embracing Industry 4.0 is a global challenge for organisations due to uncertainty and not having the correct knowledge of what benefits digitisation brings. This result in an unwillingness by organisation to implement Industry 4.0 (Müller, Maier, Veile & Voigt, 2017; Theorin, Bengtsson, Provost, Lieder, Johnson, Lundholm & Lennartson, 2017). Globalised business networks have reformed the way organisations operate, creating increasing complexities. Limited expertise in dealing with global information and advanced technologies increases the hesitancy to adopt Industry 4.0 (Ras, Wild, Stahl & Baudet, 2017).

2.6.4 Lack of expertise

Literature about the exploration of Industry 4.0 within the mining industry is limited, leading to a need for focused research to discover and expand the concept (Almada-Lobo, 2015; Hofmann, et al., 2017). Further literature in this field can assist the industry in building a framework for emerging Industry 4.0 logistics solutions. Traditional business processes cannot handle Industry 4.0 technologies, so industry leaders must consider advanced innovation for future business developments

(Sung, 2018). Within the mining industry, traditional business approaches are used, and due to the lack of adequate expertise, implementing Industry 4.0 technologies in logistics can be a risk.

2.6.5 Financial constraints

Implementing Industry 4.0 technologies require considerable capital investments and are deemed a major challenge. Developing high-tech infrastructure to obtain sustainable results requires significant capital and needs to be considered before implementing Industry 4.0 within logistics functions (Theorin, et al., 2017; Nicoletti, 2018). Due to the limited knowledge relating to the cost-benefit analysis of technology implementations, investing in advanced technology is seen as a major challenge when adopting Industry 4.0 technologies in logistics (Arnold, Kiel & Voigt, 2016).

3. Research gap

Literature related to Industry 4.0 technologies within the mining industry is limited. Databases used to obtain information pertaining to this study were Google scholar, Taylor and Francis, SCOPUS, Elsevier, Emerald, and Science Direct. SCOPUS search provided few results, while Google scholar provided limited research about the mining industry within South Africa with a core focus on green supply chain management. There were no studies on the implementation of Industry 4.0 technology within the logistical function in the South African mining industry.

4. Research problem statement

Changes within the global economy have resulted in a transformation in organisational processes. The advent of Industry 4.0 has created a need for changes within the supply chain and logistics function to provide efficiency throughout its operations (Pfohl, Yahsi & Kurnaz, 2015). To encourage innovation and implementation of advanced technologies within the mining industry, leadership must embrace them to meet their operational and functional goals and objectives (Löow, Abrahamsson, & Johansson, 2019). Due to limited research about this topic, a literature gap currently exists. As such, the problem statement for this research is:

The mining supply chain, specifically its logistical functions, is characterised by traditional processes. Due to the lack of technological innovations, the logistical capabilities are not advanced compared to other industries. Limited research exists regarding the potential impact of Industry 4.0 on logistics functions within the mining industries in South Africa. This demonstrates a gap in research hence a need to undertake this study.

5. Research question and objectives

5.1 Research question

What is the potential impact the implementation of Industry 4.0 technologies has on logistics within the South African mining industry?

5.2 Research Objectives

The primary objective was to investigate the potential impact of Industry 4.0 technologies on logistics functions within the South African mining industry.

The secondary objectives of this study are as follows:

- To explore which Industry 4.0 technologies, have the most significant potential impact on logistics functions within the mining industry.
- To explore the possible impact Industry 4.0 technologies may have on the efficiency and effectiveness of transportation, warehousing, and inventory management.
- To explore which Industry 4.0 technologies are most likely to be adopted in the South African mining industry
- To explore the potential benefits of the South African mining industry in implementing Industry 4.0 technologies in logistics functions.
- To explore the challenges faced within the South African mining industry in implementing Industry 4.0 technologies in logistics functions.

6. Research methodology

6.1 Data sample and collection

To collect rich textual data relevant to the study objectives, this study followed a qualitative method using semi-structured interview guides with open-ended questions. The target population consisted of experienced executives in the South African mining industry with knowledge of logistics management. The researchers used a purposive sampling strategy to select a sample of ten participants, which can be regarded as an adequate sample for establishing a consensus in a qualitative study (Kim, Brenner, Liang & Asay, 2003; Malterud, Siersma & Guassora, 2016). Participants were selected based on a requirement that they possess logistics management experience in the South African mining industry, including experience in transportation, warehousing, and inventory management, which are key focus areas of this study. Table 1 provides a list of study participants.

Table 1: List of study participants

Participant Number/(Code)	Participant position	Work responsibility of the participant
Participant 1 (P1)	Head of Supply Chain	Supply chain strategy development and implementation
Participant 2 (P2)	Data Scientist (Supply Chain)	Managing supply chain data sources and Enterprise Resource Planning (ERP) functionality
Participant 3 (P3)	Inventory Manager	Managing all inventory at a mine and in the mining supply chain. Developing inventory policies and ensuring inventory optimisation. Ensuring that service levels are provided as agreed with customers
Participant 4 (P4)	Regional Logistics Manager	Managing all logistical activities related to transportation, warehousing and inventory management for the region
Participant 5 (P5)	Regional Logistics Manager (Optimisation)	Ensuring the continuous improvement and optimisation of the logistics function of the mine
Participant 6 (P6)	Transportation Manager	Coordinating and planning transportation between mines, distribution centres and other facilities within the supply chain network
Participant 7 (P7)	Head of Logistics	Overseeing the operations of the logistics department across each mine site and between nodes in the supply chain network. Managing the logistics system including procurement and supplier relationships
Participant 8 (P8)	Head of Strategy and Systems	Ensuring that the strategy developed by the Group Head of Supply Chain is implemented by every supply chain function. Ensuring that information systems can provide optimal support to logistics activities
Participant 9 (P9)	Project Manager (Supply Chain)	Overseeing and managing key logistics projects within the Logistics Department
Participant 10 (P10)	Mine Supply Chain Manager	Overseeing all logistics functions within a mining organisation
Total Number of Participants	10	

Source: Own compilation

At the time of the study, South Africans were placed under COVID-19-induced lockdown regulations with limited contact between people. Since face-to-face interaction was not deemed safe, this study used an alternative method of conducting interviews. Audio-recorded interviews via the Microsoft Teams software were used, and the sessions were recorded with participants' permission. The recordings were used to transcribe participants' responses to Microsoft Word documents. Using electronic communications platforms to conduct interviews is a valid qualitative research strategy (Panda, O'Malley, Barry, Vallejo & Smith, 2021). The data were collected during November 2021.

6.2 Research rigour

A trustworthy study is ensured by meeting the criteria of “credibility” and “dependability” (Moon, Brewer, Januchowski-Hartley, Adams & Blackman, 2016). To ensure credibility of this research, participants were well briefed on the questions to ensure they understood the Industry 4.0 construct and related technologies in the context of the study purpose. In addition, research credibility was supported by the fact that a purposive sampling method was carefully implemented as advised by Onwuegbuzie and Leech (2007) to ensure that all the participants had the requisite experience and knowledge to contribute to the study. This ensured relevant and comprehensive responses would be provided.

To ensure dependability, researchers examined the responses from the participants and the findings against relevant literature as prescribed by Ary, Jacobs, Razavieh and Sorensen (2010). Furthermore, notes were kept for comparison purposes concerning any changes made in coding decisions and conclusions (Ary et al., 2010).

6.3 Data analysis

Data were analysed following a thematic analysis approach to identify patterns and themes. Thematic analysis is an effective method to use when attempting to understand a set of experiences and thoughts across a data set (Braun & Clarke, 2012). Themes and categories develop as patterns emerge through the recurring appearance of codes (Theron, 2015). Relevant thematic codes were identified by constantly examining themes and cross-checking these by referencing the individual transcripts against the collective data set. Thereafter, linkages between themes and literature were made. This study followed a six-step approach in the thematic data analysis process. Figure 1 outlines the steps followed in the analysis process.

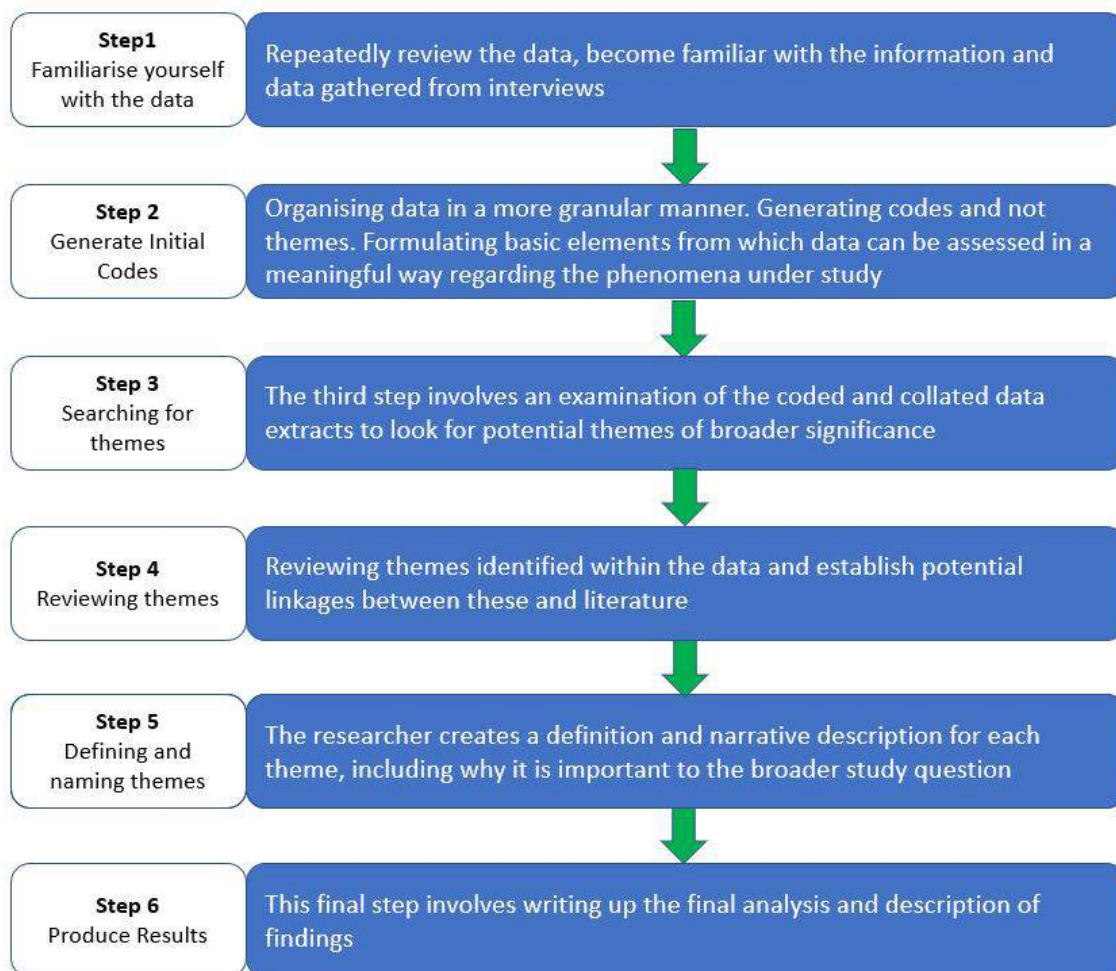


Figure 1: Data Analysis Approach using Thematic Analysis
Source: Adapted from Kiger & Varpio (2020)

6.4 Research ethics

Ethical clearance was obtained through the affiliated university's ethical clearance committee as per the respective university's Code of Academic and Research Ethics policy. All participants were informed of their rights in the research process, and that participation in the study was voluntary. To that end, participants were requested to complete a consent form. Furthermore, all participants were informed of the purpose, scope, and timeline of the study. Participants were also ensured of anonymity in the reporting of results and that confidentiality would be upheld in conducting the study.

The identities of participants were protected in the collection and analysis of data and the reporting of findings by referring to them in digital sequential naming, with a number affixed to the relevant participant when quoting responses. The recruitment of participants concluded once data saturation was obtained.

7. Results

The subsequent section provides an analysis of the results structured in accordance with the research objectives.

7.1 Industry 4.0 technologies with the greatest potential impact on mining logistics functions

The following technologies emerged as having the most significant potential to affect mining logistics; Big Data Analytics, 3D Printing, Blockchain, Robotics, and the Internet of Things (IoT). Big Data Analytics was supported by most participants predominantly due to its ability to enable better utilisation of existing data and ultimately improved decision making. There is an opinion that a lot of data is generated in the mining industry that can be better utilised, more specifically in inventory management through improved planning and monitoring of existing inventory levels. Big Data Analytics was also perceived as an instrument to improve the safety records of mines due to an enhanced ability to generate and monitor safety statistics. A further reason mentioned for the importance of Big Data Analytics is that it is perceived to be an enabler for the full utilisation of other Industry 4.0 technologies since most will require high-quality data to function correctly.

“There is a lot of data which we cannot analyse easily, and these need to happen to plan and predict the future” (P5)

“Decisions in the South African mining industry are not made on accurate data. To improve this Big Data needs to be captured, controlled, and used to improve decision-making as large data sets are generated every minute.” (P9)

“In my view, once you have the data aspect down, the next technologies can be implemented easily and work better since Cloud Computing, AI, and Robotics all depend on data and therefore this will have the biggest impact” (P4)

Blockchain was another Industry 4 technology that stood out in the analysis of the responses received. The need for Blockchain technology was derived from the need for timeous, reliable, and transparent data in the mining supply chain. It was perceived to be an essential instrument to reduce human error. Blockchain was considered useful in a wide spectrum of functions such as tracking and tracing transactions, tracking the inbound and outbound flow of goods, and managing warranties. Blockchain was also perceived as a supplement to the use of Big Data Analytics technology and fulfilling an essential role in ensuring sustainability in the mining industry. Participants reflected on the safety of the workforce being a critical issue in the South African mining environment. This view is supported by Ghobakhloo and Ching (2019), who found that Industry 4.0 technologies could improve operational safety in logistics.

“Blockchain needs to be used with Big Data Analytics as much as we want to analyse data, we would require reliable transparent data and information on what is happening right now. Blockchain will be useful in terms of tracking inbound and outbound flow of goods as well as for e.g., warranty management processes in mining in removing any human error” (P5)

“Blockchain can be used to track and trace transactions and ensure that mining becomes more responsible in terms of sustainability” (P9)

The importance of 3D Printing is linked to it being used to manufacture some critical parts locally rather than importing it. More specifically, the local manufacturing of parts using 3D printing is seen to assist in employment creation and reduce the need for expensive parts inventories and the associated costs. Local manufacturing of parts will also reduce the order cycle time of parts. This

view is supported by Reijonen (2017), who found that 3D Printing promoted delayed manufacturing (postponement) to reduce inventory and improve lead times.

“3D printing will definitely have a profound impact, but so will the Internet of Things, through connectivity and the removal of the human element, through connecting for e.g., sensors and machines, preventative measures can be in place to pre-empt something going wrong, this is almost needed immediately in the production and maintenance environment in mining.” (P7)

“3D printing if you look at expensive parts which are imported, this can be used to manufacture locally and improve planning.” (P9)

The IoT is regarded an essential technology since it allows the creation of useful data. Furthermore, it was seen as an instrument to improve connectivity between machines, sensors, and mobile technology instruments and in so doing, to reduce reliance on the human element to prevent breakdowns and safety breaches. It was also mentioned that an immediate need exists for IoT to improve production and maintenance in the mining environment.

“The Internet of Things, through connectivity and the removal of the human element, through connecting for e.g., sensors and machines, preventative measures can be in place to pre-empt something going wrong, this is almost needed immediately in the production and maintenance environment in mining” (p7)

7.2 Possible impact of Industry 4.0 technologies on the efficiency and effectiveness of the mining logistics functions: transportation, warehousing, and inventory management

Most participants indicated that the most significant impact of the successful implementation of Industry 4.0 technologies in mining logistics would be the achievement of greater efficiencies through improved decision-making based on better quality information and collaboration in the supply chain. This supports findings by Ardito, Petruzzelli, Panniello, and Garavelli (2019) and Ghobakhloo and Ching (2019) about the effects of integrating Industry 4.0 technologies into logistics and supply chain functions.

Six participants agreed that by improving functional planning and further integrating systems throughout the value chain, the mining industry could achieve greater logistical productivity. Four participants highlighted increased labour productivity as a requirement for improved logistics. Five participants also agreed that better safety would promote an increase in productivity as the safety of people is a significant concern in mining and can hold back productivity. This view is supported by Ghobakhloo and Ching (2019), who found that Industry 4.0 technologies could improve operational safety in logistics.

Regarding the impact of Industry 4.0 technologies on logistics functions specifically, transportation management was highlighted as an area that could benefit significantly from implementing these technologies. Participants believed that supply chains could be “shortened” by removing intermediaries. Technologies such as 3D printing would result in fewer transport activities being required to deliver goods to mining operations. This would ultimately drive transportation costs down for the entire mining value chain. Participant P6 remarked that “there is an opportunity to improve visibility of transportation activities” using IoT technologies. This view is supported by Isherwood’s (2013) finding that a lack of visibility is a mining supply chain problem and that such a problem could be addressed by means of IoT adoption (Daithankar & Pandit, 2014.) Transportation was also flagged as a logistics activity being susceptible to the application of AI technologies which together with Big Data Analytics technologies could be used for optimised route planning and scheduling, this could significantly reduce transport costs and carbon emissions.

Most participants believed that using technologies such as AI, Robotics and Big Data Analytics would positively impact warehousing. These technologies would provide an opportunity to improve warehousing activities and processes and, therefore, warehousing productivity. More specifically, the

technologies mentioned would impact warehousing operations, including storage, retrieval and inventory planning and control.

Six participants agreed that improved logistical productivity could be achieved through improved inventory management. Inventory was regarded as one of the most important cost drivers in mining logistics by several participants and the successful utilisation of various Industry 4.0 technologies could result in reduced inventory levels whilst still meeting inventory demands. This could be achieved on the back of improved inventory planning stemming from better inventory visibility in the logistics pipeline and collaborative planning made possible by the sharing of demand information. Furthermore, technologies such as 3D Printing and AI could facilitate Just-in-Time inventory management approaches to reduce inventory investment further. This finding corroborates with that of Yuan (2020), who found that AI and Big Data Analytics are beneficial technologies for those attempting to optimise inventory levels.

“If you think about it, if we have some visibility and transparency, it is more than likely that lots of inventory types could be halved. Also reducing the amount of warehousing space you need, reducing the number of machinery and material handling equipment, racking and all the infrastructure that you need. So, inventory management. The less inventory you hold, the less warehouse space you need and fewer transport movements.” (P9)

“Being able to expand on virtual inventory with 3D Printing and AI in facilitating a Just-In-Time (JIT) approach with inventory. JIT will promote consolidation of transport and cost reduction. Cost reduction mainly in working capital costs in the inventory management space. A postponement inventory strategy enabled by 3D Printing would improve inventory management, transportation, and warehousing functions. Safety can be improved by removing the human element in mining to a great extent.” (P10)

7.3 Industry 4.0 technologies most likely to be adopted by the South African mining industry in the future

All the participants agreed that several Industry 4.0 technologies are, to some extent, already implemented in the mining industry. However, the implementation of Industry 4.0 technologies happens mainly outside the logistics function. Most implementations occurred in the processing and extraction functions which, according to the participants, are due to the latter functions being regarded as core functions. This finding is supported by the Minerals Council South Africa (2019) who found that lower mine productivity in the country could partially be ascribed to a lack of cross-functional technological advances in the industry.

Most participants indicated that 3D printing is the Industry 4.0 technology most likely to be adopted within the mining industry in the future. It was also indicated that 3D technology has already been trailed in the industry for printing parts and components. Inhibiting factors for the wide-scale implementation of this technology were identified as prohibitive costs and the item designs for parts and components which may be difficult to print. This finding is supported by the work of Kückelhaus and Chung (2016), who found this technology could reduce inventory investment and warehousing expenditure. However, the net benefits should be determined based on a trade-off against increased capital investment costs related to the implementation of the technology.

Cloud computing, Big Data Analytics and Blockchain were also very popular choices amongst participants, with some indicating that the first two of these technologies were already implemented to a limited extent in the mining industry. The use of Cloud Computing was found to be the standard practice for storing information and data across several functions, including logistics. Big Data Analytics was used to analyse data specific to mining operations.

Technology such as Blockchain is ideally suited for the mining industry since it can facilitate the tracking and tracing of commodities along the value chain. More specifically, it allows for the tracking and tracing of commodities mined as well as waste disposal activities to ensure compliance

with sustainability requirements and the use of automation in dump trucks. However, participants raised concerns that it will only be implemented at a future stage, owing to the immaturity of the technology and the lack of readiness of the South African mining industry. It emerged that Robotics has not been implemented due to labour issues but that it would be considered in the future.

“It’s a matter of maturity. From my South African mining knowledge, Big Data Analytics will be a part of the first wave of implementation, yes, with cloud computing and AI. Blockchain will be in the second wave and Blockchain and 3D Printing in the third wave. Maturity plays a huge part.” (P2)

7.4 Potential benefits for the South African mining industry to be gained from the implementation of Industry 4.0 technologies in logistics functions.

Cost reductions from improved operational practices in mining logistics were the most cited potential benefits of the successful implementation of Industry 4.0 technologies. Nine participants agreed on these benefits. Reduced inventory levels due to improved planning and control, shorter order cycle times, and inventory substituting technologies such as 3D Printing would drive most of the cost savings. Better demand visibility would simultaneously result in better service levels. These identified potential benefits are supported by findings in the literature on the potential benefits derived from the use of Industry 4.0 technologies in logistics (Ghadge, Kara, Moradlou & Goswami, 2020).

One of the most significant potential benefits to be derived from the use of Industry 4.0 technology, particularly relevant to the mining industry, is improved safety. Six participants mentioned that Industry 4.0 technologies would enhance safety in logistics by reducing the need for human presence in dangerous activities using Robotics and automation. The transportation and warehousing functions have been identified as ideal environments for using robotics and automation to reduce human input. Complementary to the view of study participants, Fersht and Slaby (2012) found that using technologies such as robotics has resulted in safety improvements and increased productivity while reducing human error.

Industry 4.0 technologies would also promote improved collaboration along the value chain and, in so doing, improve demand planning with the use of AI, Cloud Computing and IoT technologies. The findings of Ras, Wild, Stahl and Baudet (2017) support the view that digitalising logistics functions would encourage supply chain collaboration to improve decisions and efficiency.

“If several mining houses implement these technologies, they may all benefit from increased speed in logistics, reduced costs, their logistics solutions will become more flexible as well as improved visibility. Collaboration and strengthened relationships between mining companies and their customers will also prove to become advantageous to mining companies if technologies are implemented correctly” (P6)

Reduced environmental impact and sustainability were highlighted by participants P2, P7, P8 and P9 as benefits to be derived from the implementation of Industry 4.0 technologies. Using autonomous vehicles and hydrogen-powered trucks can assist to optimise transport activities and reducing carbon emissions. According to four participants, Industry 4.0 technologies would also improve host community development by upskilling community members using technologies such as 3D Printing. Participants P1 and P4 thought that an additional benefit would be improved productivity. This could be achieved by reducing downtime and lessening the risk facing mining operations and logistics functions.

Another theme that emerged was a reduction in downtime. Big Data Analytics, together with other technologies, can assist in predictive maintenance, allowing fewer breakdowns and more opportunities for production.

“I think it all comes back to having a responsive supply chain which promotes uptime and reliability in mining. A key factor is being able to plan maintenance and having predictive condition monitoring,

which assists in planning for inventory and parts needed to support these activities when needed.” (P2)

7.5 Challenges for the South African mining industry in the implementation of Industry 4.0 technologies in logistics functions

Three themes emerged in the analysis of participants’ responses regarding challenges in implementing Industry 4.0 technology, namely personnel, costs, and infrastructure. Seven participants identified personnel as the main challenge. Personnel is an essential factor in the South African mining industry when one considers the impact of the mining industry on employment in the country. The challenges associated with people primarily relate to change management, a lack of skills and the need to re-skill employees. Employee resistance to digital transformation is considered a factor, and a lack of digital technology skills and expertise is a significant hurdle when attempting to implement Industry 4.0 technologies. This finding supports the view that the mining industry needs to adopt an innovative management approach and implement skills development programmes (Hermann, Pentek & Otto, 2016; Müller, Maier, Veile & Voigt, 2017; Theorin, Bengtsson, Provost, Lieder, Johnsson, Lundholm & Lennartson, 2017). Concern was also raised regarding the mines being careful to create the impression that machines or robots can replace personnel. The mining labour environment is unionised, and staff retrenchment issues are dealt with cautiously. An additional challenge identified by participants (P1, P3, and P8) relates to the lack of management support for adopting new technologies. A strong business case for adopting new technologies will be vital in ensuring this challenge is mitigated.

“Low literacy levels and skills, the true benefit of implementing these technologies won’t be attained with the incorrect people. People’s resistance in terms of implementing technologies as they pose a job risk, is a further challenge” (P7)

“Change management issues with people and having to use technologies they have not used before” (P1)

“The biggest challenge will be from labour and the unions itself” (P5)

Four participants (P2, P3, P6 and P9) felt that implementation cost was a factor that could hinder the adoption of Industry 4.0 technologies. Capital-intensive technologies such as robotics might be too expensive. It emerged that strong business cases must be developed to ensure that implementation benefits outweigh the implementation costs. This view is supported by research findings that financial constraints are a significant challenge to the implementation of technologies. A comprehensive cost-benefit analysis must be conducted and presented to all key stakeholders to overcome this barrier (Theorin et al., 2017; Nicoletti, 2018).

“Cost is a challenge. Getting the willingness to invest and understand the benefits in the mining industry could be a challenge” (P8)

Three participants highlighted the lack of technological infrastructure and reliable power supply in South Africa as an obstacle for the mining industry in implementing Industry 4.0 technologies. The erratic power supply could significantly impact the ability to fully use and integrate new digital technologies in the mining value chain.

“Infrastructure needed to host these technologies in South Africa for e.g., connectivity issues which is a problem. Power supply in South Africa is a challenge and therefore alternative power sources will be needed to support the successful use of these technologies” (P7)

Other challenges identified were the risk of the new technology failing (P3) and the technological maturity of the mining industry (P2). There are no guarantees that the adoption of new technologies will pay off. An opinion was raised that the mining industry is not yet mature enough to roll out technologies such as Blockchain that require multiple supply chain level buy-ins to function correctly.

Lastly, an additional factor mentioned by P6 was that logistics is challenging in the mining industry due to several multi-echelon supply chain structures. This presents complexities when implementing new technologies due to higher costs, different approaches to technology use, and varying levels of technology adoption amongst stakeholders. To this end, it was proposed by a participant that a holistic supply chain approach be adopted to overcome this problem. Entire value chains may have to be redesigned to ensure new technologies are used to their full effect. A digital roadmap can assist in the rollout of technology across entities in the supply chain.

8. Conclusions

The study's findings suggest that mines could use Industry 4.0 technologies to positively affect logistics functions. The technologies considered in this study appeared to be valuable instruments in improving efficiency and effectiveness throughout logistical functions but especially in the essential logistics functions of inventory management, transportation, and warehousing. The adoption of Industry 4.0 technologies is expected to improve visibility, collaboration, and decision-making in all logistical functions. Certain Industry 4.0 technologies, including Cloud Computing, are already used in the mining industry. Other, such as 3D Printing, is potentially great value to mining logistics systems and is currently being tested. The study's findings suggest technologies such as 3D Printing, Big Data Analytics, Blockchain, IoT and AI could significantly impact the efficiency and effectiveness of mining logistics.

The study identified potential benefits and challenges the mining industry could experience when implementing Industry 4.0 technologies in its logistics functions. The most likely benefit would be improved efficiency in all logistical functions, especially inventory management. Better demand planning and inventory optimisation abilities coupled with a reduced need for the inventory of parts and components due to technologies such as 3D Printing can significantly reduce inventory levels and their associated costs without jeopardising service levels. Improvements in one area of logistics usually have a knock-on effect on other areas due to the interdependence of the logistics system. Optimisation improvements in inventory management would lead indirectly to improved warehousing and transportation functions because the mining industry relies on inventory and working capital to keep operations running. Other additional significant likely benefits that were identified were in the form of reduced operating downtime due to predictive maintenance and improved productivity and personnel safety made possible through automation and Robotics. From an overall logistics systems perspective, it is reasonable to expect improved efficiencies resulting from improved decision-making, greater collaboration, and enhanced operational effectiveness in most, if not all, logistics functions.

The mining industry's most significant obstacle in implementing Industry 4.0 technologies is related to its personnel. Resistance to change and a lack of skills were identified as significant challenges that would have to be overcome by the industry. Other difficulties included a lack of a reliable power infrastructure to support the continued use of technologies and the high costs of acquiring and implementing capital-intensive technologies such as 3D Printing and Robotics. It appears that neither the Blockchain technology nor the mining industry is currently mature enough for implementation over the short term. It is, however, predicted that the implementation of various Industry 4.0 technologies will occur over stages and that, ultimately, the industry will become mature enough to adopt a wide variety of these technologies, including Blockchain.

There is an indication that the mining industry and its logistics functions have not been at the forefront of adopting and implementing Industry 4.0's technological advances in its logistics functions and operations. Furthermore, and perhaps partially an explanation of the low adoption of Industry 4.0 technologies, the logistics function has long been seen as a secondary service rather than a primary or core component of mining, and one that could be used to achieve a competitive advantage in the industry. A different perspective on the role and importance of the logistics function in the mining value chain can help to speed up the adoption of Industry 4.0 technologies in mining logistics.

9. Recommendations

Managers within the mining industry are provided with extensive information pertaining to the various industry 4.0 technologies that could potentially be implemented to reduce logistical costs. Logistics is an essential component of the mining value chain, and the mining industry should invest in developing its logistical functions. The successful implementation of Industry 4.0 technologies is likely to contribute significantly to achieving lasting gains in efficiency and effectiveness. Technologies such as Big Data Analytics, 3D Printing, and AI warrants urgent consideration on the back of comprehensive cost-benefit studies.

The study's results suggest that the most significant challenge the mining industry faces in implementing Industry 4.0 technologies is a lack of skills. The industry would need to take a proactive approach to ensure that personnel understand the necessity for using Industry 4.0 technologies. To that end, the mining industry would need to ensure that the right skills training and development programmes in logistics functions are offered to implement these new technologies. People would be more likely to embrace these technological advances if they had a proper understanding of the potential benefits these new technologies hold for daily activities and improved productivity, safety, sustainability, efficiency, and effectiveness (Philbeck & Davis, 2018). Training and development programmes would promote an industry culture that embraces the change needed to achieve operational excellence throughout its value chain (Bühler, Nübel & Jelinek, 2021).

Higher inventory costs have plagued the mining industry due to the risks faced by the security of supply, siloed operating practices, inefficient planning, and a lack of integration with end-users. As a result, inventory management would be the first logistics function that needs to be improved and optimised with Industry 4.0 technologies. Participants observed that technologies such as 3D Printing, AI, and Big Data Analytics would hold the most significant benefits for the inventory management function in improving planning, demand forecasting, optimisation, and collaboration along the value chain. These technologies should be trailed and implemented where necessary to exploit these potential benefits.

The mining industry should investigate developments in other industries that rely more on logistics to ensure the business's success. These include industries such as FMCG and automotive and 3PL service providers. In so doing, a blueprint could be developed for the mining industry to implement the relevant Industry 4.0 technologies to ensure that logistics functions provide an efficient and sustainable service to mining houses and that those focusing on improving logistics can gain a much-needed competitive advantage in the future.

Furthermore, implementing Industry 4.0 technologies can be capital intensive and comprehensive feasibility studies will have to be developed in support of such investments. However, this study argues that the benefits of adoption are potentially significant and likely to give the industry higher competitiveness. With the implementation of Industry 4.0 technologies, managers can have a holistic view and visibility of their logistical functions within mining operations. The practical application of the highlighted technologies, enable managers to operate the transportation, warehousing and inventory functions efficiently and effectively, thereby reducing cost and as well as improve work conditions for staff. The obligation of top management in executing Industry 4.0 technologies is essential in instituting standards and processes as well as supplying critical support and resources during the implementation phases.

10. Suggestions for future research

The global mining industry is changing, and its reliance on logistics is increasing. Contemporary organisations require flexible, agile, and resilient logistics solutions to survive and prosper. Intelligent logistical solutions are needed to accomplish this, and as this study found, Industry 4.0 technologies could contribute significantly to improvements in the mining industry. Mining houses will have to investigate and develop technological business strategies and roadmaps if this industry is to enjoy the benefits associated with implementing Industry 4.0 technologies. Future research is needed to provide

guidelines on how the mining industry should implement these technologies to ensure that they have resilient and optimised logistics solutions to efficiency and effectiveness problems.

Sustainability has become a critical issue in the mining industry. Further research should be conducted to understand how Industry 4.0 technologies drive sustainability and how the industry could become more environmentally friendly. One such opportunity is a study of the impact that Industry 4.0 technologies could have on reducing carbon emissions generated by mining logistics.

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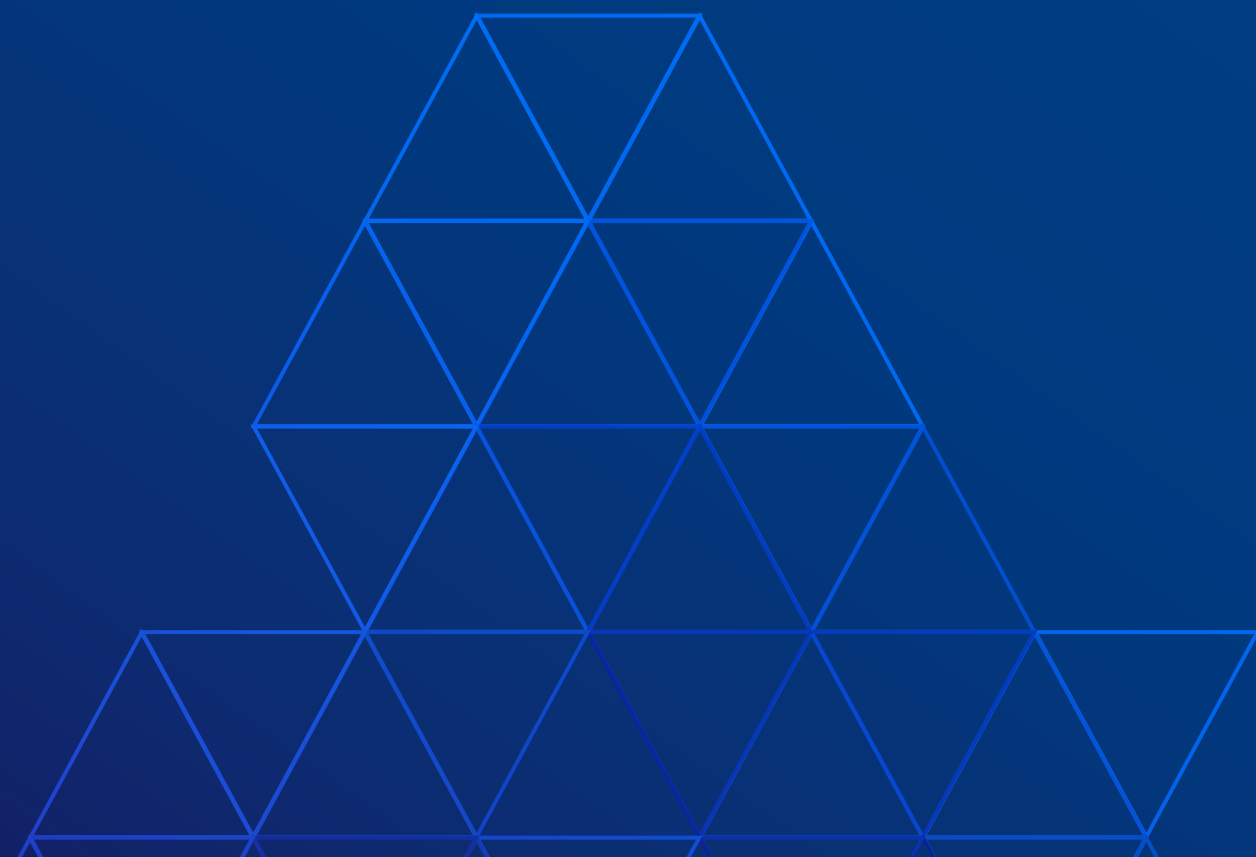
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FINANCIAL, INFORMATION AND KNOWLEDGE MANAGEMENT



Cyber Security Disclosure In The Banking Sector: A Case Of South Africa and China

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Keywords

Cyber risk; Financial sector; Disclosure

Abstract

This study compares risk reporting, specifically cyber risk reporting, between South African and Chinese banks. Major corporate scandals had significant impacts on the economic environment and has led to an increased interest in risk reporting. The population is all the listed financial service providers (banks) in South Africa and China. By purposeful sampling the four biggest banks in each country were selected based on their asset value. The research method utilised is content analysis. A disclosure index is developed from the literature study and used to analyse the results. It is concluded that the disclosure practices on cyber risks of the banks differ substantively between the two countries. China does not explicitly refer to cyber risk but only discloses it as an operational risk in its annual reports. No ranking is associated with any of their risks or categories. This is in contrast when compared to the South African annual reports as South African banks clearly define cyber risk and rank it amongst their top risks.

1. Introduction

All Stock Exchange-listed companies must publish their annual financial results (Khlif, Ahmed, Souissi & Sargsyan, 2018). The financial part of the disclosures is more regulated than some of the non-financial disclosures. Since the non-financials are not as regulated, organisations struggle to navigate the sometimes-confusing landscape of disclosure where numerous frameworks and standards exist (Elshandidy, Shrivs, Bamber & Abraham, 2018:2; Krzus, 2011). The Securities and Exchange Commission ("SEC") is very concerned about cyber risk. In February 2018, the SEC updated the 2011 guidelines and stated that public businesses must stay focused on cybersecurity issues and take all required efforts to inform investors about substantial cybersecurity risks and events. Under the Securities Act of 1933 and Securities Exchange Act of 1934, corporations must report their cyber controls, risks, and vulnerabilities (SEC, 2018 & SECPCCD, 2018). While banking law and regulation have been inactive in the face of cyber risk, the SEC has made some progress. Skinner (2019) critically examined nearly 900 SEC filings filed by seven prominent U.S. bank holding corporations during a three-year period that are covered by the framework of mandatory disclosures. Their review suggests that SEC laws and recommendations are too broad for these institutions, and not enough to address public and private interests. The study, therefore, urges the SEC to adopt more nuanced cyber disclosure standards for banks. It is evident from the prior evidence (Skinner, 2019) that, the SEC has led among financial regulators in addressing cyber risk, primarily through a focus on disclosure.

From a societal standpoint, cyber risk is especially concerning when it comes to systemically important financial institutions, such as the largest internationally active banks. This is because the overall stability of the financial system and thus the real economy depends on these banks' ability to withstand stressful events such as cyber-attacks. The main aim of this paper is to analyse the degree of

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cyber risk disclosure in the banking sector and compare cyber risk disclosure practises in the banking sector in South Africa and China.

Risk is vital to any organisation, and businesses must identify, evaluate, manage, and report all types of risk to enhance decision-making (CIMA, 2008). Risk is one of the leading causes of uncertainty in an organisation and can originate from various internal and external sources (Epstein & Rejc, 2006). Risk management can be associated with two types of events: risks or adverse events and opportunities or positive events (Ata & Schmandt, 2016).

Most investors prefer principal risk reporting that is specific to an organisation. They need improved disclosure that avoids boilerplate text and provides enough detail to understand how the organisation accounts for its transactions, how it identified its principal risks and how the organisation is planning to manage those risks (Financial Reporting Council (FRC), 2017:3). Management can improve investor confidence if they can prove how the reported risks relate to the business model (FRC, 2017). As stated in a recent study by Gao, Calderon & Tang (2020) cybersecurity risks are important and could affect business operations and the integrity of financial reporting, although there is limited empirical research on the cybersecurity risk disclosures. The following section will highlight related aspects to provide more background on cyber risk disclosure in the banking sector.

2. Background to the study

The 2007 global financial crisis was partly due to most of the banks lacking the ability to combine their risk exposures and identify risk concentrations at a bank group level (Thun, 2015). As a result, more banks are starting to identify cyber risk as a priority risk (Härle, Havas, Kremer, Rona & Samandari, 2016:4). Furthermore, as technology and digital banking has developed in the past decade, cyber risk, and the need to disclose information has escalated.

To support the quality disclosure of information, various reporting guidelines and frameworks have been developed. All listed South African companies are required by the Johannesburg Securities Exchange (JSE) to comply with the International Financial Reporting Standards (IFRS) as well as the King reports (IODSA, 2010; JSE, 2017). King III report was the first report that stated that organisations need to produce an integrated report instead of both a traditional annual financial and a sustainability report. King III declares that listed organisations that fail or choose not to produce integrated reports must explain why they are not adhering to this requirement (IODSA, 2010).

Integrated reporting states that organisations should disclose the specific risks they face, what possible opportunities can arise from these risks, and how they affect the organisation's ability to create value (Integrated Reporting Committee of South Africa, 2018). To regulate and improve security, listed companies must adhere to some listing requirements. King IV outlines the requirements for risk governance in principle 11, which states: "The governing body should govern risk in a way that supports the organisation in setting and achieving its strategic objectives" (IODSA, 2016). King IV provides a series of recommended risk practices that the governing body of any listed organisation should perform.

3. Problem Investigated

In the business world, business risks have always existed. In addition, there have been major corporate scandals that had significant impacts on the economic environment. All of which has led to an increased interest in risk reporting (Oliveira, Rodrigues & Craig, 2013). It became clear that some banks manage their risks poorly due to weak risk data compiling capabilities and risk reporting practices. The poor management of risks proved to have severe consequences on the banks themselves and the financial system's stability (Bank for International Settlements (BIS), 2013).

In a study done by Linsley and Shrivs (2000), they argue that organisations have become more exposed to volatility and uncertainties (Khlif & Hussainey, 2016:181). Although there have been many improvements in recent years, investors still know too little about an organisation's risks, and a risk information gap still exists between organisations and their stakeholders (Wilson, 2014). In

addition, it was found that organisations are reluctant to comply with risk disclosure requirements (Al-Hadi, Hasan & Habib, 2016). In general, larger organisations are more complex and have a more comprehensive range of operations. Therefore, the statement above implies that they are subject to higher risk levels, translating into higher information irregularities amongst investors (Al-Hadi et al., 2016).

Media platforms report daily on the rampant increase in cybercrime. This increase has sparked fear in the public eye that cyberattacks would affect national resources and destabilise infrastructure (Berry, 2018). One of the main contributing factors to this naivety is that the Protection of Personal Information Act (POPIA) is not entirely in effect. Sophos, an organisation that is a global leader in network security, conducted a study and found that only 34% of South African organisations comply with the POPI Act (Sophos, 2019). Every day, media organisations report on the unprecedented growth in cybercrime. This increase has raised widespread concern that cyberattacks will harm national resources and impair infrastructure (Berry, 2018).

Between January and August 2018, South African Banking Risk Information Centre (SABRIC) reported that an estimated R250 million were lost due to cyber and digital banking crimes. However, these losses are only the reported statistics. Most cybercrimes go unreported (SABRIC, 2019). Furthermore, as discussed in the problem statement, it seems that risk disclosures in general, but cyber risks specifically, are not reported uniformly between organisations, leading to this study's objective.

4. Research Objectives

The main objective of this paper is to evaluate the level of disclosure on cyber risk in the banking sector and compare the practices of cyber risk disclosure in the banking sector between South Africa and China.

4.1 Secondary Objectives

The secondary objectives include the following:

- To identify the rules and regulations that govern reporting disclosures in South Africa and China.
- To identify the research method and the sources of the data.
- To develop the measuring instrument and to analyse the data.

5. Literature Review

5.1. Risk reporting

Risk reporting tends to be more non-financial than financial information, historical rather than future-orientated, and qualitative rather than quantitative. The current reporting shortcomings have emphasised the need for a more integrated and holistic form of reporting that will integrate both the financial and non-financial information in a meaningful and integrated manner (Carels, 2014:3; Global Reporting Initiative (GRI), 2018)

Elshandidy and Neri (2015) postulate that organisations, in general, do not tend to provide quantitative and forward-looking attributes related to risk disclosure but qualitative and historical information. Variations in risk disclosure are partially aligned with country-related regulations, which plays a vital role in an organisations incentive. The impacts of risk factors vary by country. In the United States and Canada, an organisation's risk disclosure is positively associated with its risk levels. In contrast, German organisations are negatively associated with their risk levels, and United Kingdom organisations are not significantly related (Elshandidy *et al.*, 2018). Cyber risk is identified as the fourth most crucial risk out of ten identified by Corporate Compliance Insights (CCI), Deloach, 2019).

5.2. Regulatory requirements for risks reporting

To regulate and improve security, listed companies must adhere to some listing requirements. Organisations must comply with International Financial Reporting Standards (IFRS) (JSE, 2017). As

per principal 7 of IFRS, organisations are required to list the nature and extent of risks arising from financial instruments to which the entity is exposed during the period and at the end of the reporting period, and how the entity manages those risks. The qualitative disclosures describe management's objectives, policies, and processes for managing those risks, and need to be included (IFRS, 2018). All listed organisations in South Africa must comply with King IV and IFRS as stipulated in the JSE listing requirements.

China's financial reporting had to adhere to all the requirements as stipulated by China Accounting Standards Committee (CASC) until China adopted accounting standards specified by the International Accounting Standards Board (IASB) (CASC, 2018). The Chinese Accounting Standards (CAS) were replaced by the International Financial Reporting Standards (IFRS). This replacement brings China more in line with the rest of the world. The new procedures became law on 1 January 2007. China complies with various IFRS standards, specifically IFRS 7, as stated above. IFRS 7 requires entities to provide disclosure in their financial statements that enable users to evaluate the significance of financial instruments and the risks arising from these financial instruments (IFRS, 2018). This practice is like the South African reporting requirements as stipulated by the JSE.

5.3 Risks reporting in the financial sector

The China Banking Regulatory Commission (CBRC) adopted regulations that came into effect on 1 January 2013. According to these regulations, all China's commercial banks are required to disclose information related to exposure and evaluation of credit risk, operational risk, market risk and any other relevant risks, as well as risk management (Wang, Chen & Zhao, 2018:2).

After the global financial crisis that started in 2007, a key finding was that information technology and data architecture in the banking sector was severely lacking and unable to support the broader management with financial risks (BIS, 2013:8). As a result, most banks could not combine their risk exposures and detect risk concentrations quickly and accurately at a bank group level, across business lines and between legal entities (Thun, 2015). Some banks managed their risks poorly due to weak risk data compiling capabilities and risk reporting practices. The poor management and availability of data proved to have severe consequences to the banks themselves and the financial system's stability (BIS, 2013).

5.4 Cyber risks in the banking sector

Organisations depend more and more on digital technology to conduct their business operations and use digital technology to engage with their customers, business partners, and other constituencies (Securities & Commission, 2018:2). This technological advancement and digital connection in the world have presented some risks. Cybersecurity is an ever-present ongoing risk to all markets and industries (Securities & Commission, 2018). As the banking sector is highly advanced in technology and relies on digital connections, the sector is vulnerable in terms of cyber risk (Bouveret, 2018). After the release of the Securities and Exchange Commission's (SEC's) cybersecurity disclosure guidance in October 2011, cybersecurity risk disclosure has been intensified according to Li, No & Wang (2018). They investigate the usefulness of cybersecurity-related risk factors disclosed in 10-K filings and subsequently reported that SEC's disclosure guidance encourages firms to increase their disclosure of cybersecurity risks (Li, No & Wang, 2018).

Businesses are primarily concerned, as cyber-attacks could lead to substantial costs and various other implications such as exposure of sensitive personal information, business disruptions, and remediating costs. Other expenses such as increased cybersecurity protection cost, litigation and legal risk, reputational damage could also occur. (Li, No & Wang, 2018:40; Securities & Commission, 2018:4). In 2018 cybersecurity played a vital role in the Securities and Exchange Commission's (SEC) regulatory agenda. The commission published an interpretive guideline that urges companies to be: "more transparent in disclosing cybersecurity risks in their public filings and to disclose material data security incidents in a timely fashion. In addition, the SEC urges businesses to implement safeguards such as trading bans to prevent insiders from selling securities after a breach is detected but before it is publicly disclosed" (Newman & Belknap, 2019).

Cyber risk can be defined as "operational risks to information and technology assets that have consequences affecting the confidentiality, availability, or integrity of information or information systems" (Bouveret, 2018). Eling & Wirfs (2016) add to this definition by mentioning that cyber risk shares similar property and liability risk characteristics as catastrophic and operational risk. Cyber-attacks have a severe impact, directly and indirectly, on an organisation, and losses occurred from cyber breaching be significant (Bouveret, 2018). In a study done by Cavusoglu, it was established that a cybersecurity breach could negatively affect an organisation's share price by up to two and a half per cent (Eling & Schnell, 2016:477). However, not all cyber risks are related to cyber-attacks or "hacks" that are malicious, and some occur due to business disruptions such as software updates. These are referred to as cyber incidents (Bouveret, 2018). Business disruptions hinder organisations from operating, resulting in lost revenue, while the effects of data breaches materialise over a more extended period. All these causes reputational damage and possible litigation costs (Bouveret, 2018:4). In addition, the loss of confidence following a cyber-attack could be significant for the financial sector, given the reliance of financial institutions on the trust of their customers (Warren, Kaivanto & Prince, 2018:28).

Based on the literature study, a measuring instrument was developed to measure the disclosures of the different banks. The paper addresses the disclosure practices of the banks on cyber risks in a systematic way by dividing the information into different sections, namely General information, Governance of risks, ranking of cyber risks, Reporting on cyber risk incidents, Causes of cyber risks, The impact of cyber risks incidents and the overall level of disclosure. These sections correspond with the layout of the disclosure index, as displayed in Table 1. In the next paragraphs are brief discussion on each section.

- ***Governance of risk***

Any organisation needs to have policies and procedures in place to manage its risks. For example, government Gazette, No. 35950, sub-regulation 17 states the following: "achieves the objectives relating to sound corporate governance and effective risk management and complies with the relevant minimum requirements specified in regulation 39". This regulation covers managing risk management processes, managing material exposures to risk, and reporting material information technology and cyber incidents (SARB, 2012; SARB, 2019). As per Principle 11 of King IV: "The governing body should govern risk in a way that supports the organisation in setting and achieving its strategic objectives" (IODSA, 2016:61). This principle entails that the governing body assigns implementation and risk management responsibility to a responsible individual. Risks need to be managed as an integral part of the company's day to day activities (IODSA, 2016:61).

The cybersecurity law in China came into force on 1 June 2017. Under the cybersecurity law network, operators are required to appoint a designated person in charge of cybersecurity. To identify responsible people or directors with expertise in the field of cybersecurity, was evident in a study by Klemash, Smith & Seets (2020) which indicates that 58% of the Fortune 100 companies included cybersecurity as an area of expertise sought on the board. In addition, all cybersecurity incidents must be monitored and recorded (Ning & Wu, 2019). In table 1, below, six questions need to be evaluated to analyse the governance of risks.

- ***Ranking of cyber risk***

Organisations such as Forbes and the World Economic Forum lists cyber risk as one of the top 10 risks (Demrovsky, 2019; Fleming, 2019). Business tech ranks cybersecurity as ninth in the listed risks affecting the South African economy (Businesstech, 2019). Laws in China regulating cyber risks were only implemented in 2017. Therefore, there is no clear indicator of whether cyber risk is ranked in the Chinese business environment (KPMG, 2017:4). The literature above is proficient at investigating how the banks rate the importance of cyber risk. The "Ranking of cyber risk" section, as in table 1, addresses the following two questions:

- Does the bank rate cyber risk as one of its top ten risks?

➤ If ranked, how important are cyber risks to the bank?

• ***Reporting of cyber risk incidents***

The South African Reserve Bank has issued a new directive 2/2019 regarding Regulation 39 on the regulations relating to the Banks Act 94 of 1990. The directive sets out the reporting requirements for cyber incidents. The Protection of Personal Information Act (POPIA) was introduced in 2013. After it comes into full effect, section 22 of POPIA requires that any data breach or suspected breach be reported to the information regulator and the affected parties. Under the Cyber Crimes Act, the incident must be reported within 72 hours.

Following the Chinese Cybersecurity Law, organisations must notify the relevant authorities of any cyber incidents within 24 hours. If the publication of such an event will jeopardise China's national security, then such information will be withheld. In addition, as with the POPI Act, Chinese Cybersecurity Law requires organisations to notify affected users in case of disclosure and damage or loss of user information. Currently, relevant laws and regulations in China do not provide specific requirements about the nature and scope of information to be reported. This practice is similar to King IV, where there are no precise reporting requirements and limited guidance for reporting cyber incidents. Therefore, the following question is considered in this section on “Reporting of cyber risk incidents”:

➤ Identify if there was a cyber risk incident, was this cyber risk incident reported?

• ***Causes of cyber risk incidents***

Banks face many cybersecurity threats that fall within these three categories (Tylor, 2018), namely Financial gain, Disruption and Espionage. Virtually every cyber threat can be categorised into one of these three types. With current technology, there is an abundance of methods to initiate an attack. The results of a study performed by Gao, Calderon & Tang (2020) show that the two most disclosed cybersecurity risks are risks of service/operation disruption and risks of data breach. Below is a list of the ten most common types of cyber threats: Malware, Phishing, Spear Phishing, “Man in the Middle” (MitM) attack, Trojans, Ransomware, Denial of Service Attack or Distributed Denial of Service Attack (DDoS), Attacks on Internet of Things (IoT) Devices Data Breaches and Malware on Mobile Apps. (Regan, 2019, Norten, a-f, 2019). In table 1, the banks are analysed accordingly.

• ***The impact of cyber risk incidents***

A successful cyber-attack can cause severe damage to an organisation. It impacts an organisation's bottom line, the organisation's standing and consumer trust. The impact of a cyber-attack can be divided into three categories (Cruickshank, 2019) which are considered in the disclosure index:

- Damage to the reputation
- Financial losses
- Legal actions or implications.

• ***Mitigating procedures***

A risk mitigation strategy is an action plan that organisation create after they have made a thorough evaluation of possible threats that can affect the organisation. The purpose of such a strategy is to minimise or ideally prevent adverse impact before any damage or disaster takes place (Cantoria, 2019). Therefore, the following question is considered:

➤ Is a mitigation procedure in place?

• ***Level of disclosure***

The level of disclosure aims to display how much information each organisation discloses on cyber risk. However, previous studies have raised concerns on the unit of analysis used to determine the amount of disclosure even though it is common practice to use words or sentences (Amran, Bin & Hassan, 2009). For example, Linsley & Shrivs (2006) argued that it is difficult to determine which words can be used to estimate risk disclosure. However, early studies done by Hackston & Milne (1996) and later copied by Linsley & Shrivs (2006) indicate using either sentences, words, graphs, or

columns all similar yield results. Therefore, for this study, a word search for all cyber-related phrases was done to determine the level of disclosure.

6. Research Methodology

The research method utilised is content analysis. A disclosure index is developed from the literature studied. Finally, the disclosure index is used to analyse the results. The population is all the listed financial service providers (banks) in South Africa and China. The sampling method used is purposeful sampling, where a particular setting is explicitly selected for the information, it can provide (Bryman & Bell, 2014). The banks were selected based on their asset value. China was chosen as it is an emerging economy, and along with South Africa, it is part of the BRICS countries (Asongu, Akpan & Isihak:2018:2).

For the South African market, the four biggest banks were selected based on their asset value. These four banks (FirstRand Bank, Standard Bank, Absa Bank, Nedbank) had a combined asset value of 5 940.6 billion rands in 2018 (454.1 billion dollars) (Businesstech, 2018). In 2017 FirstRand had the most significant headline earnings of 22.4 billion rands, and Standard bank has the most extensive footprint of all the South African banks (Businesstech, 2017). These banks represented most of the South African banking sector and will remove the possibility of the much smaller banks skewing the findings (Bryman & Bell, 2014).

For the Chinese financial markets, the following four banks in China were selected based on their asset value – the Industrial and Commercial Bank of China, China Construction Bank, Bank of China, and the Agricultural Bank of China. These are the four biggest banks in China, having a combined asset value of 13 637.2 billion dollars (Businesstech, 2018), and according to the British magazine "The Banker", these banks are also the four biggest banks in the world (Businesstech, 2018; chinaplus.cri.cn, 2018). The four banks from the South African market and the four banks from the Chinese market give a total sample size of eight units. All the banks chosen for this study must submit annual financial reports as stipulated by the JSE and CASC (CASC, 2018; JSE, 2017). These annual reports are available for download online. Following the discussion on the research methodology, details concerning the disclosure index are displayed in the next section.

6.1 Disclosure index

The disclosure index is built around the reporting requirements indicated by the IIRC and CASC and the Chinese Cybersecurity Law requirements. Therefore, this study is systematic and fully replicable. As shown in Table 1, the disclosure index is used to measure the disclosure practices of the banks. The numeric values assigned are derived from the observations of the index. For example, should something be true, or "Yes", a numeric value of 1 would be assigned to that observation? Should something be false, or "No", a numeric value of 0 would be assigned. If no value could be assigned due to the criteria not being met, the field was assigned a not applicable (N/A). Table 1 is the presentation of the measured criteria from each of the banks' annual reports.

Table 1: Cyber risk disclosure index

	FirstRand	Standard Bank	Absa Bank	Nedbank	Industrial & Commercial Bank of China	China Construction Bank	Bank of China	Agricultural Bank of China
General information								
Does the bank produce an integrated report (Yes/No?)	Yes	Yes	Yes	Yes	No	No	No	No
Which rules and regulations does the bank adhere to:								
IFRS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
KING IV	Yes	Yes	Yes	Yes	No	No	No	No
Is cyber risk reporting mandatory?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Governance of risk								

Does the bank have a policy on risks reporting in general?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does the bank have a cyber risk policy?	Yes	No	Yes	Yes	No	No	No	No
Does the board of the bank take ownership?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Do they refer to any strategy related to managing cyber risks?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Does the bank define cyber risk clearly?	Yes	No	Yes	Yes	No	No	No	No
Does the bank identify cyber risk as a material item?	No	Yes	Yes	Yes	No	No	No	No
Ranking of cyber risk								
Does the bank rank cyber risk as one of its top ten risks?	No	No	Yes	Yes	No	No	No	No
If ranked, how important are cyber risks for the bank?	N/A	N/A	1	2	N/A	N/A	N/A	N/A
Reporting of cyber risk incidents								
If there was a cyber risk incident, was the cyber risk incident reported?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CAUSES OF CYBER RISKS INCIDENTS								
Identify the cause of the cyber risk incident.								
Malware	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phishing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Spear Phishing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man in the Middle	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trojans	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ransomware	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Denial of Service Attack	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Attacks on IoT devices	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Data Breaches	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Malware on mobile apps	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
The impact of cyber risk incidents								
A description of the impact on the bank:								
Damage to the reputation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Financial losses	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Legal actions or implications.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mitigating procedures								
Is a mitigation procedure in place?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

7. Results and Findings

7.1 General information analysis

In the first place, the disclosure index starts collecting general information based on the following questions:

- Does the bank produce an integrated report?
- Rules and regulations the banks need to adhere to; and
- Are the rules of reporting cyber risks mandatory or not?

Table 2: General information analysis

General information	Compliance Percentages
Does the bank produce an integrated report?	50%
Which rules and regulations does the bank adhere to:	
IFRS	100%

King IV	50%
Is cyber risk reporting mandatory?	100%

When analysing the results about the general information, it is evident from Table 2 that 50% of the banks in the sample produce integrated reports. In addition, all the banks complied with IFRS reporting standards, and 50% complied with King IV regulations. These results indicated that half the banks within the total sample must comply with different reporting regulations, although all the banks must report cyber risk incidents.

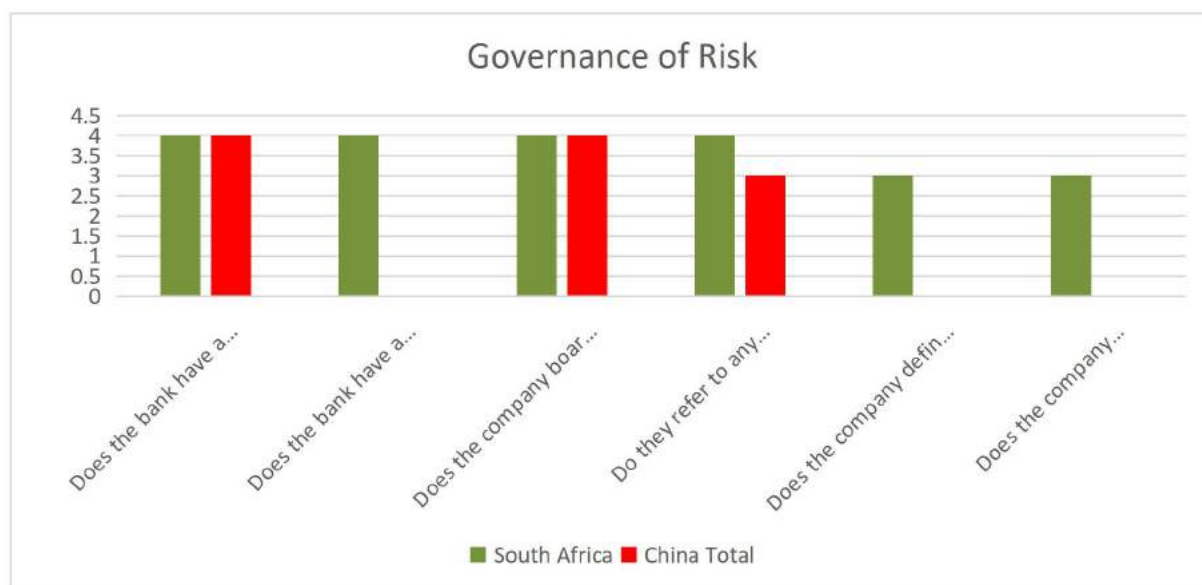
7.2 Governance risk analysis

The initial steps in cyber risk management are to realise the current threats and set risk management goals (Eling & Schnell, 2016:480). Risk management has advanced to such a degree that many standards can assist in managing cyber risk. This section looks at the extent to which the banks govern risks.

Table 3: Governance risk analysis

Governance of risk	Percentages
Does the bank have a policy on risk reporting in general?	100%
Does the bank have a cyber risk policy?	38%
Does the board of the bank take ownership of managing risk?	100%
Do they refer to any strategy related to managing cyber risks?	88%
Does the bank define cyber risk clearly?	38%
Does the bank identify cyber risk as a material item?	38%

All the banks had a risk reporting policy, but only 38% had a cyber risk policy. Only 38% had a clear definition of cyber risk, and 88% of the banks had implemented strategies to manage cyber risk. Additionally, 38% of the banks identified cyber risk as a material item, including Standard Bank. However, Standard Bank does not define cyber risk in its reporting. These results are conflicting and could indicate that cyber risk incidents reported by them could relate to a broader range of concerns than assumed in general. From the six questions only, Absa and Nedbank both scored 100% compliance. When addressing the governance section, the banks yielded a 67% compliance rate for the specific questions asked. Graph 1 summarises the above and illustrates it by country.



Graph 1: Governance of risk

Analysing the countries individually, China had an average compliance rate of 46%, while South Africa had almost double the percentage of 88% compliance in reporting on the governance of risks.

7.3 Ranking of cyber risk

This section looks at the cyber risk ranking within the banks.

Table 4: Ranking of cyber risk analysis

Ranking of cyber risk	Percentages
Does the bank rank cyber risk as one of its top ten risks?	25%

When analysing the risk rankings, only 25% provided a ranking for the risks they faced. However, the two banks, which provided cyber risk rankings, rated cyber risk amongst their top three risks.

7.4 Reporting of cyber risk incidents analysis

One of the SEC guidelines is that organisations disclose all prior cyber risk incidents and their impact (Newman & Belknap, 2019). This section looks at cyber risks' incidents, the causes of these incidents, and if the incidents were reported.

Table 5: Reporting of cyber risk analysis

Reporting of cyber risk incidents	Percentages
If there was a Cyber risk incident, was a cyber risk incident reported?	0%
CAUSES OF CYBER RISKS INCIDENTS	
Identify the cause of the cyber risk incident	
Malware	x
Phishing	x
Spear Phishing	x
Man in the Middle	x
Trojans	x
Ransomware	x
Denial of Service attack	x
Attacks on IoT devices	x
Data Breaches	x
Malware on mobile apps	x
What was the impact of these incidents	
A description of the impact on the bank:	
Damage to the reputation	x
Financial losses	x
Legal actions or implications.	x

For the 2018 financial year, there were no cyber risk incidents confirmed in the annual reports. However, this result might be a limitation of the annual reports, and such incidents might be found in additional reports.

7.5 Mitigating procedures analysis

This section identifies if the banks have mitigation procedures in place for risks in general.

Table. 6: Mitigation procedures analysis

Are mitigating procedures in place	Percentages
Is a mitigation procedure in place?	100%

All the banks have stated that they do have risk mitigation procedures in place. However, very few referred explicitly to cyber risk mitigation procedures. The following section evaluates the levels of disclosure between South Africa and China in terms of cyber risk reporting.

7.6 Level of disclosure analysis

A search based on word count was done to evaluate the overall level of disclosure on cyber risk reporting. A word search was applied to evaluate how many times all related cyber terms appear in the annual reports. This includes "cyber risk", "cyber risk", "cybercrime", "cyber security" and "cybersecurity" to name but a few. This section indicates the level of disclosure per bank.

Table 7: Level of disclosure

Disclosure	FirstRand	Standard Bank	Absa Bank	Nedbank	Industrial & Commercial Bank of China	China Construction Bank	Bank of China	Agricultural Bank of China
Cyber term search	2	28	11	48	2	2	3	0

Results indicated that the South African reports yielded a higher level of disclosure based on a word search than the banks of China. The related words were found 89 times in the South African reports in contrast with only seven times referred to in the China reports.

Concerning the South African banks, Nedbank had a count of 48, ABSA had a count of 11, Standard Bank, 28 and First National Bank had only two. The China banks yielded a much lower count, with the Industrial and Commercial Bank of China showing two, the Bank of China having three, the Agricultural Bank of China having a count of two and the China Construction Bank not referencing any of the terms at all.

8. Conclusions

Both countries chosen for the study must comply with different reporting requirements. South Africa is subject to the JSE listing requirements, including IFRS and King IV (JSE, 2017). To produce an integrated report is one of the requirements as per King IV. King IV also requires organisations to provide reasons for not submitting integrated reports (IODSA, 2016).

China is subject to the CASC listing requirements, including IFRS and CBRC (CASC, 2018). In addition, cyber risk reporting is a legal requirement in specific South Africa and China (Ning & Wu, 2019; SEC, 2012). Both IFRS and King IV are required to disclose all risks (IFRS, 2018; IODSA, 2016).

As it is referred to by some banks in China, cyber risk, or information technology risk, forms part of their operational risk portfolio. Both South Africa and China have legislation and cyber risk reporting policies that fall outside the IFRS and King IV requirements. However, this legislation and policies, the POPIA and the Chinese Cybersecurity Law, are relatively new and thus not fully implemented (Ning & Wu, 2019; Sophos, 2019). This statement paralleled with the insufficient disclosure of China's banks. Furthermore, there is no specific framework for cyber risk reporting used by China's banks. However, their annual reports show that this is incorporated in their primary risk policy documentation.

A total of six governance-related questions, focusing on risk reporting, cyber risk reporting and policies, were utilised in building the disclosure index. It was found that all the banks in the sample have policies in place regarding risk reporting, but only three (all of the South African banks) specifically indicate that they have cyber risk policies in place. These results mean that only 38% of the total sample have a cyber risk policy.

Seven out of the eight banks state that they have strategies to manage cyber risk, which is 88% of the total sample. However, the banks' in China classifies cyber risk under their operational risk portfolio and refers to risk management strategies in general. Only one bank, the Agricultural Bank of China, did not mention such a strategy. These results indicate that 100% of the South African banks have strategies to manage cyber risk, whereas only 75% of the Chinese banks have such strategies. Of the eight banks, only three South African banks identified cyber risk as a material item, 38% out of the total sample.

The banks chosen for this sample complied with 67% of the governance questions asked. However, when looking at the countries individually, China only had a 46% compliance rate, where South Africa had almost double that at 88% compliance. Only Absa and Nedbank had complied with all the questions. Only two banks provided risk rankings. That is 25% of the total sample size, all of which were South African banks. Absa ranked cyber risk as their number one risk, and Nedbank ranked cyber risk as their second most critical risk. The other 62% of the sample did not rank cyber risk.

The World Economic Forum (2015) stated that the financial impact within the first few days is estimated to be around \$ 250 billion in the extreme event that internet connections worldwide go down. Furthermore, in a study done by Hovav & D'Arcy (2003), results show a negative share price effect for organisations, such as banks, that have a business model heavily reliant on the internet when they fall victim to cyber incidents. However, from all the banks sampled, no single cyber risk incident was disclosed for the 2018 financial year. This could be due to no cyber-attacks occurring during the 2018 financial year or that organisations are reluctant to disclose this information out of fear of possible attacks even though regulators require it.

Eling and Schnell (2016) state that to actively manage cyber risk, risk mitigation is a lot more plausible than risk avoidance. Risk mitigation, along with the support of various instruments (e.g., anti-virus and firewalls), has proven to be most effective in reducing the probability of occurrence and minimising the size of losses. Furthermore, 100% of the banks showed that they do have risk mitigation procedures in place.

9. Managerial Implications

When analysing the results from the study, it is concluded that the disclosure practices on cyber risks of the banks differ substantively between the two countries. These differences between countries have implications if potential investors or any stakeholders would like to make any comparisons.

Cybersecurity is a critical factor in banking operations because of digital technology advancements. The annual reports of China's banks classify risks under different categories. Cyber risk and information technology risk is classified as operational risks. As a result, China does not explicitly refer to cyber risk but only discloses it as an operational risk in its annual reports. No ranking is associated with any of their risks or categories. This is in contrast when compared to the South African annual reports as South African banks clearly define cyber risk and rank it amongst their top risks. They also recognise it as a material item.

From a South African reporting perspective, cybersecurity is one of the most significant risks in the banking sector. It is precisely defined and referred to in the annual reports. For stakeholders, it is easier to assess the impact of cybersecurity from a South African company as the information is more specific and available.

For the 2018 financial year, there were no reported cyber risk incidents in either country. For China, however, as per Chinese Cybersecurity Law, if any cyber-attack poses a risk to national security, such an incident will not be published. This could mean banks have been prohibited from reporting it to anyone, except the relevant authorities, if any incident occurred.

Based on this study, it is evident that South Africa's banks provide more defined and relevant cyber risk information. In conclusion, integrated reports published by South African banks are of a higher quality when compared to China's banks' annual reports.

To conclude, companies need reinforce their cybersecurity disclosures. This reinforcement and emphasis are needed to demonstrate accountability and to enhance stakeholder trust around cybersecurity.

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Exploring The Relationship Between Customer Engagement Antecedents And Brand Loyalty

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Keywords

Customer; Engagement; Brand reputation; Social media; Word-of-mouth; Brand community; Merchandising; Brand loyalty

Abstract

Customer engagement has become more than just a strategy for business or marketing. It empowers the consumer to be engaged throughout their initial interaction and purchase journey. This engagement journey can help a brand to establish and grow due to the continuous support from consumers. The general aim of this study was to determine the nature of the relationship between customer engagement strategies (CES) and brand loyalty. CES identified five antecedents (brand reputation, social media, word-of-mouth, customer experience, and merchandising) for the self-developed questionnaire where 135 social media participants could partake in this study. The value of this investigation lies in determining the most influential antecedents for brand loyalty from a consumer. These findings can contribute to how brands strategize their marketing budgets and which segments of customer engagement consumers find valuable. The study was conducted on the social media platform Instagram, where participants were recruited with the referral from other participants. The data, collected via Google Forms, are reliable ($\alpha \geq 0.70$) and adequate ($KMO \geq 0.70$). Data analysis using exploratory factor analysis suggested that eight antecedents influence consumers' brand loyalty. The study found a positive relationship for most of the antecedents. However, customer experience should be reconsidered because this antecedent did not significantly influence a consumer's loyalty to a brand.

1. Introduction

The modern digital era withholds endless opportunities for companies or brands to connect and engage with current or potential customers. As a result, customer engagement has significantly evolved over the last decade. Various engagements via omni-channels allow brands to interact with their customers, whether person-to-person or person-to-community (Prentice *et al.*, 2019:339).

The term omni-channel refers to a marketing strategy that uses numerous channels to communicate with customers and encourage them to purchase. It has similar characteristics as multichannel marketing, although it is not the same. The goal of omni-channel marketing is to simplify the purchasing process for customers by placing them at the centre of all interactions. Offering multiple options for purchasing as well as removing potential objections to the purchase is what accomplishes this.

The Internet as an engagement platform has promoted countless possibilities to connect and build lasting relationships with customers, thus allowing unrestricted access for a consumer to reach a brand, vice versa. Therefore, business communication with a customer is achieved through various communication channels regarding the brand/product to create an opportunity for sale (Yerpude & Singhal, 2021:92).

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A brand should continue to listen and encourage feedback, suggestions, and recommendations from their brand community. An engagement strategy that empowers customers to become the voice of the company or brand. It allows brands to deliver according to the expectation of customers accurately with a competitive advantage.

Customer engagement is characterised in the literature as a psychological process where customer loyalty contributes to a service or brand (Vivek *et al.*, 2012:27; Kumar *et al.*, 2019:141). This enrichment of engagement may also influence customer loyalty; therefore, brands embrace engagement today. Over time, it has been shown to contribute to consumers' behaviour and preference for a specific brand or service.

According to Prentice *et al.* (2019:346), these authors illustrate a positive relationship between customer engagement and customer purchase intentions in their literature research. Hence, a company should consider formulating or developing an appropriate business intelligence strategy to drive customers to engage with its brand. Furthermore, Jaakkola and Aarikka-Stenroos (2019:38) observed that a customer's psychological shopper behaviour might expand and improve current research towards a customer perspective. Customer behaviour can be distinguished by how customers are incentivised during brand activity ventures. Suggesting that customer engagement and customers' judgments in business have a notable positive impact; thus, brands should identify what their businesses centre their attention or attraction is. For a brand to understand and identify the best engagement strategies for its target customers, the business has to use the opportunity to enable the brand to develop new innovative approaches. These approaches will continuously drive brand loyalty through sales by creating a competitive advantage in the market.

Businesses and companies should act rapidly and systematically to ensure that the brand's customer focus is evident to customers. A simple example would be how a brand responds to consumer feedback and how reviews can be an engagement strategy to improve business operations through customer service. Sheng (2019:49-50) suggests that once a company receives many reviews in a certain period, companies should ensure that it can compete with the review update pace and meet customers' expectations by engaging with a customer. As a result, it will be driving an enhanced power in influencing the competence for customer engagement. In addition, the continuous positive outcome of the company's responsiveness creates strategic value for managing or maintaining customers and potentially for financial outcomes (Sheng, 2019:49).

Hollebeek (2011:570) proposed customer brand engagement (CBE) themes like brand attitude, image, identity, personality, and experience, can be adapted to guide customer engagement in a company with strategies and campaigns that communicate with consumers.

Customer engagement has become more than just a strategy for business or marketing. It empowers customers to be engaged throughout their initial interaction and purchase journey. This engagement journey helps to grow customer loyalty and collect valuable customer information (Hollebeek, 2011:570). CBR has been determined to exhibit both positive and significant influences on brand loyalty. More customer interactions can drive users to find a more relevant or valuable brand, providing potential customers with insight. These customer insights can create an opportunity to formulate a strategy where informed marketing decisions can be made on the available information, such as content or retargeting improvements, which can significantly drive sales through social media channels and outreach methods.

Throughout current years, the synergies between customers and brands have progressed due to increased competition and the surge of various social media platforms. As a result, more organisations have shifted their focus on more engagement with current or potential customers to create a more sustainable long-term competitive advantage through the voice of their customers (Sheng, 2019:49). Today customers play an incremental role towards how a brand can improve or change its engagement strategies. Consumers expect brands to be one step ahead of service, playing their part in society and acknowledging a customer's experience with a brand. In the end, creating a strategy that

incorporates competitive advantage is crucial for a brand to be ahead or retain more brand loyalty. Customer engagement has also shown a linkage between the firm or brand performance indicators such as brand image, customer involvement, sales growth, referrals, and brand purchase intentions (Harmeling *et al.*, 2017).

It is, therefore, to be expected that engaged customers are expected to progress enduring relationships with the brands by expressing their trust, commitment, satisfaction, or loyalty. The engagement or experience of buying in a store can also follow through on brand loyalty in the consumer. This study will focus on social media users where customers are influenced through various engagement strategies through sharing their insights towards strategies that drive their brand loyalty.

Although digital engagement has become the first step in communicating to the consumer daily, it also empowers the consumer to make an informed decision with the information given during the engagement, especially if this specific item or brand will solve a particular problem identified by the consumer.

More companies have become aware of the consumer's voice, and therefore companies have created various strategic platforms to listen and encourage feedback or suggestions from their customers. An engagement strategy that empowers customers to share their experience as consumers. Thus, it allows brands to deliver according to the expectation of customers accurately with a competitive advantage.

1.1. Problem Statement

The predicament reviewed in this research is whether brands benefit from customer engagement strategies to increase and manage customer retention through brand loyalty. Each brand has access to connect with a customer according to a strategy suggestion or research available.

Consumers today are more responsive to trustworthy brands, who pay attention to their interests and preference by not taking advantage of their loyalty. Therefore, brand managers should put more effort into developing effective relationships between brands and consumers. Consequently, brand managers should encourage consumers to evaluate their brand towards brand satisfaction; if the outcome exhibits satisfaction, brand loyalty will be positive (Ekinici *et al.*, 2019:104-105).

For many consumers, social media has become a fundamental part of their everyday lives, allowing them to express their ideas, preferences, and likes on a wide range of topics and share their experiences with others.

Brands end up spending a tremendous number of resources on customer engagement or interaction, assuming that specific strategies will retain brand loyalty. However, literature may suggest several theories or methods; identifying the most effective engagement strategies from a customer's outlook can limit brands to choose more than one strategy. Instead, a business can rather scale down to practices that drive brand loyalty and customer engagement.

In the past decade, the literature upon customer engagement has become an increasingly assertive strategy for companies or brands to retain customer loyalty; however, customers can have different views on what sort of engagement will conquer their commitment into support.

Although various engagement strategies have been identified, poor execution can influence a customer's behaviour or brand preference. It inflicts a barrier for the brand to expand its customer database and market share. Nevertheless, specific customer engagement strategies that influence brand loyalty may not always be evident due to different consumer categories. Moreover, companies and brands do not always have the antecedents that influence customers' preference of a particular brand.

Suppose the initial engagement took place outside the retail environment. In that case, other instore activities or engagement should also be evaluated to determine if it also contributes to brand loyalty.

Through social media branding campaigns, consumers aware and informed will be more loyal to the brand they prefer and value. Therefore, the companies should not exclusively focus on detailed and informative advertisements but should also combine engagement. Today companies should accept and embrace social media platforms being considered as the most valuable brand management tool. It provides engagement, interactivity, and open discussion with the target audience (Ahmed *et al.*, 2019:210). Customer's attitude and perspective towards digital marketing or social media platforms, such as Facebook and Twitter, positively affect brand engagement (Faiz *et al.*, 2017:54).

1.2. Objectives

The primary objective is to determine which customer engagement strategies are the most effective for a brand or business to gain and retain customers through loyalty.

Three secondary objectives have been identified for this study:

1. To compile and validate a questionnaire to measure the customer engagement antecedents that contribute to brand loyalty.
2. To determine the relationships between customer engagement strategies and brand loyalty.
3. To identify customer engagement factors of brand loyalty empirically.

1.3. Research methodology

1.3.1. Population and sample

The study population were participants who are mainly active on social media platforms such as Instagram. The researcher has two social media accounts, namely the personal; account (Dorothy Grace Flint) and a second social media account called Patron & Niche. Thus, to separate the research from family and close personal friends, Patron & Niche's social media account started the snowball sampling for this study. Participants were recruited by using electronic word-of-mouth (eWOM). This was through invitations to participate, supported by other successful influencers on the social media domain. Targeting participants on social media was more accessible and responsive platform to engage with different individuals in South Africa. Ideally, it would give a broader perception to understanding a larger volume of participants regarding how they perceive brands and their engagement.

No sample will be drawn. Thus, all the members belonging to the population using Patron & Niche (as the first snowball) will receive the invitation to participate. This population was invited to partake on these platforms and then requested to share the invitation to partake in the research project with their friends, and they will then share the invitation with their friends, and so on. It is therefore not possible to determine the population or sample size. Data were collected until suitable numbers are reached (as determined by the Kaiser, Meyer and Olkin test of sample adequacy).

1.3.2. Research design

The study is a quantitative study and collects data via a self-administered questionnaire. See Appendix 1 (Self-developed questionnaire) with insight and questions aligned with customer engagement strategies. The electronic platform GoogleForms was used to collect the data. The questionnaire's answers were on a Likert scale between 1 to 5, where 1 suggests "strongly disagree" and 5 "strongly agree" to the specific question asked.

1.3.3. Data collection

The social media platform Instagram was used to snowball the invitation to participate in the survey. The following steps clarifies the data collection process:

Step 1: An invitation to take part in the survey was placed on the social media platform i.e., Instagram.

Step 2: This invitation was also requesting the respondents to share the invitation with their friends, and their friends and so on – thus snowballing the reach of the questionnaire

Step 3: On receipt, the respondent will be requested to complete the questionnaire – the first page of the questionnaire contains the Letter of Consent (Appendix 2)

Step 4: After the respondent ticks the box where consent is given, the questionnaire will open. If the consent is not given, the respondent will be reminded that consent is required. If still not given, thanked and not receive the questionnaire

Step 5: On completing the questionnaire, the data will automatically be captured and saved in the dataset. It is impossible to isolate any one respondent or identify a specific respondent's data from the dataset

Step 6: Dataset will be provided electronically to the statistical consultation services at the NWU for analysis.

Step 7: Researcher received the results from statistical services, interprets and writes the report

Please note that the responses are anonymous, and neither the data, identity, or contact details were identified from the electronic database. The researcher, therefore, has no idea who responded to the questionnaire, even though Instagram where participants were invited to partake in the survey. A total of 135 respondents participated in the study.

2.1. A theoretical model of customer engagement and brand loyalty

The study and the results will support the conceptual model designed according to the segments that may influence customer engagement that contributes to overall brand support or loyalty. In the model, the dependent variable CES is serviced by five independent variables, namely (1) Brand reputation (CES¹), (2) Social media (CES²), (3) Word-of-mouth from the Brand Community (CES³), (4) Customer Experience (CES⁴), and (5) Merchandising / Visibility (CES⁵). Furthermore, the theory also shows that these customer engagement strategies lead to brand loyalty. Therefore, more effective customer engagement antecedents serve as a pathway to improve brand loyalty (see Figure 1).

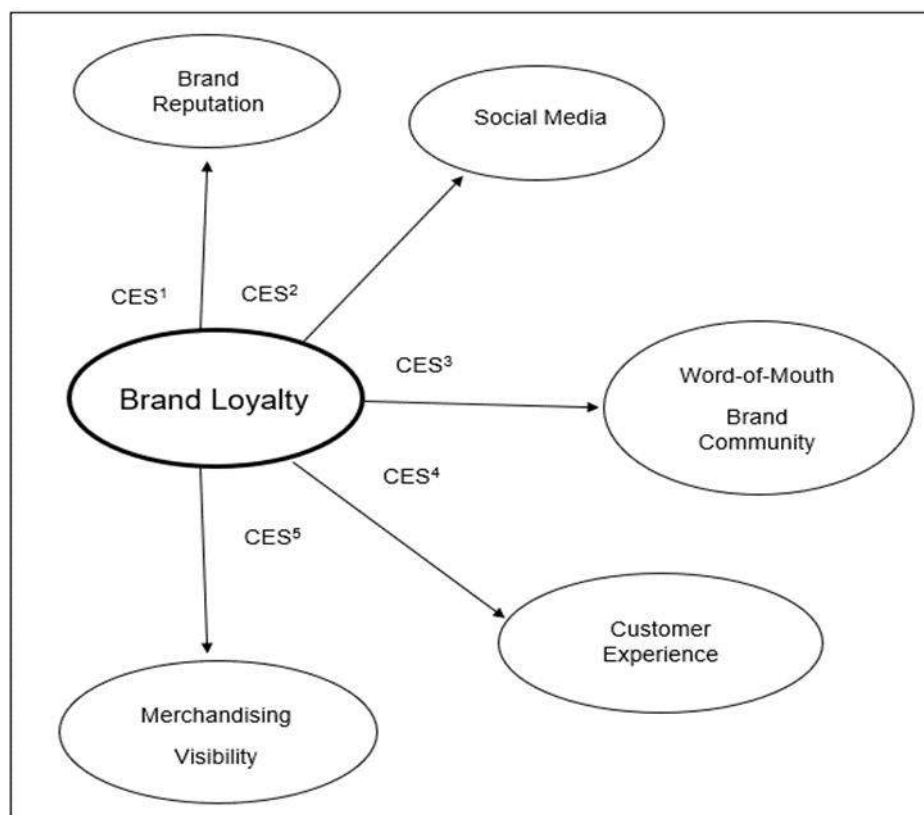


Figure 1: Conceptual model of customer engagement antecedents and brand loyalty

2.1.1. Brand reputation

A brand is generally the name, a term, design/symbol, or any other characteristic that distinguishes differentiates or identifies one seller's goods or services (Saboo *et al.*, 2016:526)

When a brand wants to build relevant and effective frameworks, it may be essential to incorporate ideas from various research findings, such as customer relationship management, customer experience, social media, and customer-oriented enterprises (Venkatesan, 2017:293). Acharya (2021:41) identified that unfamiliar and established brands might have to work harder to maintain and build brand reputation, which go hand in hand with brand recognition. The authors' findings provide managers with strategic means that will benefit customers to connect with their brand. According to Prentice *et al.* (2019:346), their research illustrates a positive relationship between customer engagement and customer's purchase intentions. Therefore, it is recommended that a company generate an appropriate business intelligence system and drive customers to engage with the brand.

Customers should experience a level of value and preference, as the association has been identified to have a positive outcome concerning customer engagement. It provides an increased level of value in terms of interest, sign, and pleasure with the product or service delivered (Parihar *et al.*, 2019). Merging insights from the various research findings, including customer relationship management, customer experience, social media, and customer orientated companies, can collectively be essential to develop actionable and practical frameworks that will represent a strong brand reputation (Venkatesan, 2017:293).

Besides brand loyalty, a brand's reputation and history can influence customers' perspectives and enthusiasm to be part of this brand's culture. Therefore, a corporate business legacy, especially towards brand management, indicates that nine mandatory elements must be considered if corporate heritage or their brands are to evolve. These are the historical identity, longevity; representation; brand leadership or brand stewardship; value proposition; consistency, trust, authenticity, heritage, brand evolution, and legacy of corporate social responsibility (Adegbile & Otubanjo, 2019:8).

2.1.2. Social media

Brands today are surrounded by multiple social media platforms and channels, which enables brand awareness and engagement more significantly. The progression and evolution of social media as an interactive technology has empowered, enabled, and changed millions of lives; it can be personal, organisational, and global. Its impact within the scope of marketing remains unique and is perceived as the primary component of enhancing consumer engagement towards online platforms (Ahmed *et al.*, 2019:202). A theoretical model of Ahmed *et al.* (2019:205) demonstrates the interchanging elements of social media marketing; consumer consciousness, and the impact on brand loyalty. Faster and more consistent responses from businesses and brands are needed to show customers the managerial effort. In addition, a considerable number of reviews received in a short period suggest that organisations should make sure they can keep up with the rate of review updates (Sheng, 2019:49-50). Quick and frequent responses enhance the likelihood of appearing at the top of a review page, allowing a brand or business to be more visible to review readers and potential reviewers. As a result, the capacity to influence customer engagement competency will be strengthened. According to Sheng (2019:49), due to the company's responsiveness, strategic value is generated for managing or sustaining customers and financial repercussions.

However, Saboo *et al.* (2016:538) concluded by suggesting that a brand should not focus on the number of followers alone, but that brand managers should also encourage participation on social media platforms from consumers. Furthermore, these activities positively influence each other. For example, an increase in a brand's popularity or fame can positively influence other social media activities, implying that brands need to consider combining both activities. Social media sites such as Facebook, Twitter, and Instagram can help businesses, brands, and customers build stronger relationships with their target customers. However, there has been no systematic investigation of the factors influencing consumer interaction on social media despite the widespread acknowledgment of

their importance. When conducting their research, Ajiboye *et al.* (2019: 239) used a systematic strategy that included a thorough review of the empirical literature on consumer interaction behaviour on social media platforms. Five of the most important antecedent causes identified in the research literature include social connections, ownership-value, information-seeking, involvement, and functionality. Using social media by a business requires all of these elements.

Customer brand relationships have been found to have a favourable effect on consumer purchase intent via social media. A strong desire to purchase is shown among customers who have developed a strong confidence level in a particular brand, which suggests a high level of contentment and commitment. Customers' purchasing intentions can be induced by various brand-related actions by marketing managers who focus on building trust and happiness in their customers (Sharma *et al.*, 2021:614). Connecting with people is part of social media platforms' functioning. Thus, customers are exposed to it in response to their involvement and interactions with social media platforms (Ajiboye *et al.*, 2019). The above mention promotes the exchange of similar brand interests, values, and ideas, resulting in online brand communities and a sense of social cohesion.

2.1.3. Word-of-mouth / Brand community

Consumers, creators, and contributors connect with brands or businesses in various means, primarily through brand communities (Ajiboye *et al.*, 2019: 248). Two decades ago, brand communities were already identified and defined as "social entities that represent the embeddedness of brands in consumers' daily lives" (Muniz & O'Guinn, 2001:418). The modern brand community, however, differs in the speed and reach of communications. Instead of portraying a customer-incentivised action or venture, Jaakkola and Aarikka-Stenroos (2019:38) observed that consumer recommendation of a brand to other consumers will most likely expand and improve future purchase behaviour. Prentice *et al.* (2019:345) recommend that new members rely more on the brand community than long-term members, and they must have confidence in the brand and its community to engage in its activities. Word-of-mouth is an oral, written, and electronic communication between communities related to the quality/experience of a product or service purchased or used (Kotler & Keller 2009:174; Indrasari *et al.*, 2019:190).

Brand managers experience constant pressure to engage with their target audience. A common strategy is to drive and motivate consumers to "follow, like, or share" the brand's key message with other followers, indirectly influencing consumer purchase decisions (Saboo *et al.*, 2016:526). The value of social word-of-mouth (SWOM) or electronic word-of-mouth (eWOM) on social media suggests that the advantages of SWOM can increase exponentially at higher levels of SWOM. Consequently, the more SWOM takes place on social media, the larger target or non-target audience will be reached. Thus, SWOM continues to increase at an increasing rate. However, the authors also considered it possible that the outcome of SWOM will reduce once it reaches a certain level of exposure (Saboo *et al.*, 2016:538).

Social media can significantly impact customer decision-making, affecting shareholder value. Social media is contributing to an overall positive impact on business performance. This contributes to both the necessary business of offline advertising and WOM and current social media research. Therefore, a brand should keep in mind that the multidimensional nature of customer engagement may vary depending on the depth of engagement and exposure to the consumer. For example, Boujena *et al.* (2020:8) concluded that the lowest level of customer engagement could be obtained via "views" and "likes" which are natural actions because they require little time investment from the consumer.

"Most customers use the brand community primarily as a source of information, reading messages rather than contributing with likes and comments," according to Gummerus *et al.* (2012:87). Halaszovich and Nel (2017:29) propose that two "like" intents can be the engagement through word-of-mouth and connect with a brand to get information are two main intentions driving fan-page like behaviour," back up the antecedent of the source of information. Chiang *et al.* (2017:1457) can add to this finding through behavioural customer learning, which is fundamental to explaining customers' online habits and contributing to customer engagement behaviour. Consumers experience an elevated

belief towards their favourite professionals or sports stars; therefore, they are likely to adhere to their attitudes and behaviours when they believe in these role models. Furthermore, they will subsequently act as word-of-mouth ambassadors for the marketed companies and their brands (Wong et al., 2015:321).

2.1.4. Customer experience

Customer experience is defined as "a multidimensional construct that focuses on a customer's cognitive, emotional, behavioural, sensory, and social responses to a firm's offers throughout the customer's whole buying journey" (Lemon & Verhoef, 2016:3). While a consumer interacts with a brand, they assess their direct and indirect experience with a brand. Therefore, the management of brands should not be managed traditionally, as traditional marketing elements are becoming less influential for a consumer's decision-making process and purchase behaviour. A consumer's customer experience is another contributing factor a company should consider to drive a consumer's brand perception (Klaus, 2020:7). Customer experience is why a brand is perceived as positive or negative, as a consumer evaluates brands according to how their expectations and experience were delivered.

Customer experience during market research can shift the tactical level towards a more strategic approach. Customer experience provides market research with a different opportunity to explore what drives customer behaviour and business performance (Klaus, 2020:7). However, companies with their brands may find customer experience a complex field regarding measuring or managing it. Customer engagement and customers' opinions or feedback have a beneficial influence, which means brands and companies should focus on more innovative business models that can drive consumer engagement towards their brand or company.

Pan (2020:81) identified that further agreement analyses reveal that customer community involvement partially relates to community perceived value and brand endorsement. In addition, it plays a function in the agreement of social value in the community and brand recommendations. This research analyses the impact of customer community relationships on the consumers' two community value demands. Consumer community engagement and cognitive value were strongly related, while brand symbolism did not impact the relationship. That being said, it harms both social value and the level of consumer community engagement.

Customers should feel appreciated and preferred for customer involvement because the connection has been a favourable impact. In terms of interest, sign, and enjoyment add more value to the supplied goods or service (Parihar *et al.*, 2019). Jaakkola and Aarikka-Stenroos (2019:38) observed that customer referring behaviour could expand and improve existing research upon customer viewpoints instead of portraying a customer incentivised activity and venture. This suggests that customer engagement and customer's views in business had a positive impact; therefore, brands and companies should centre their attention towards more innovative approaches. Businesses and companies should respond faster and more systematically to ensure that managerial effort is evident to customers.

Regardless of how consumers purchase items and services, brands will significantly influence consumers' shopping decisions. Therefore, consumers are not choosing one brand over another because of advertising, marketing, persuasion, or branding, which signifies that these elements of brands are not the only influencing factors that cause a consumer to select one brand over another. Since traditional brand-building tools serve the role of customer experience, these elements are intended to create and drive consumer interest, contributing to the journey of customer experience (Klaus, 2020:7).

2.1.5. Merchandising / Visibility

To be successful in a modern connected internet world, merchants must clearly express their identities to customers across different platforms. Consumer-brand relationships are more likely to result in improved customer engagement, increased brand loyalty, and increased readiness to pay if the retailer's brand identity is similar to the consumer's identity. Even though retailers must align their brand identity with their customers' identities, they must also accept that both identities may change

over time. Consumer experiences across touchpoints must be identified, crafted, and integrated in a way that connects with consumers if the retailer is to keep the identities congruent.

The perceived symbolic value of an online shopping website (sign), interest in a website (cognitive), and pleasure a person expects from purchase can influence brand engagement. Sign and pleasure are the following most effective motivators for keeping a consumer engaged: interest and desire. This favourable association may be a result of consumer involvement with the brand provides expected values like interest, sign, or pleasure for customers from that product or service category (Parihar *et al.*, 2019: 74).

Roggeveen *et al.* (2021:81) identified in their research that the relevance of retailer-consumer identity congruence matches the identity of the retail brand with the identity of the customers. Therefore, brand-consumer interactions can be strengthened by using identity congruence to build more robust engagement, brand loyalty, and a greater desire to pay for products.

Innovative merchandising tactics and innovative product offerings help create a distinct retail brand identity and make that identity more easily communicated to customers. According to Venkatesan (2017:293), integrating several insights and research streams such as customer relationship management (CRM), customer experiences, social media, and customer orientated organisations are powerful fundamentals to develop an executable framework for these strategies. Customer brand engagement has become more than just marketing; companies focus on broadcasting visibility activities to improve brand engagement (Faiz *et al.*, 2017:53).

Customers' attitudes towards outdoor marketing like billboards and posters as a customer engagement platform had a positive and significant impact. Once organisations adopt social media platforms to implement marketing and engagement activities, it is relevant to maintain engagement and communication as a consistent practice.

Roggeveen *et al.* (2021) identified five new merchandising concepts to help retailers better interact with customers by creating themes, reflecting the brand story, being playful, signalling exclusivity, and virtual merchandising. In addition, a consumer is more likely to identify with the retail brand if the retailer is using social and technology tools to enhance the retailer's identity.

3.1. Descriptive statistics

GoogleForms provided the analysis for the descriptive statistics. Highlights of these statistics are that:

- 71.9% of participants first read the reviews of a new product that was launched. Thereafter they use word-of-mouth, a brand community to make an informed discussion before purchasing the product.
- 71.9% first read online reviews about products before purchasing the product.
- 60.7% uses Facebook or Instagram to communicate to their brand community (30.4% uses email communications for this purpose).
- Communication methods classified as “Irrelevant” are SMS messages (35.6%) and Telephone calls (35.6%)
- Most memorable advertising media is Social media (62.2%) and TV (59.3%). Brand influences and brand ambassadors are fairly low-key reminders (17.8% and 18.5%, respectively).
- In the omni-channel the respondents indicated that Traditional advertisement (TV, radio, billboards, Screens, advertisements) contributes to 56.68% of memorable brand communication, where Modern advertisement (Social media, brand ambassadors, brand/social media influences) contributes to 43.32%.

3.2. Multivariate statistics

3.2.1. Objective 1: Suitability of the data and validity of the questionnaire

A total of five antecedents were identified from the literature (each measured by five measuring criteria using a 5-point Likert scale). The measuring criteria of the antecedents, sample adequacy, variance explained, and reliability were computed and these results appear in Table 1. Table 1 indicates that the data are adequate ($KMO \geq 0.70$), reliable ($\alpha \geq 0.57$ - minimum; 0.70 - preferred) (Field, 2017; Cortina, 1993) and also that sphericity is significant ($p \leq 0.05$).

Table 1: Customer engagement antecedents' suitability statistics

Antecedents	Sample adequacy (KMO)	Sphericity (Bartlett)	Reliability (α)	Variance explained (σ^2)
Antecedent 1: Brand Reputation	0.77	0.00	0.43	63.56%
Antecedent 2: Social Media	0.87	0.00	0.86	61.59%
Antecedent 3: Word-of-Mouth / Brand Community	0.69	0.00	0.63	58.24%
Antecedent 4: Customer Experience	0.64	0.00	0.61	53.89%
Antecedent 5: Merchandising / Visibility	0.85	0.00	0.87	61.45%
Outcome: Brand loyalty	0.78	0.00	0.75	51.08%
Total data set	0.84	0.00	0.91	63.50%

In serving *Objective 1*, each antecedent's measuring criteria are subjected to exploratory factor analysis to establish if these criteria truly measure the antecedent. All criteria should ideally load onto the antecedent identified in the literature; this indicates validity and that the antecedent is a pure construct with no embedded sub-constructs. This suggests that the relevant criteria only assess one construct (Field 2009:786; Asvat 2018). Table 2 below shows the details on the measuring criteria and their validity towards the antecedents.

Table 2: Antecedents, measuring criteria and factor scores

Antecedent 1: Brand Reputation	Factor 1 loadings	Factor 2 loadings
Q.1.1. A tried and trusted brand is always my first option	.600	***
Q.1.2 If I cannot find my brand in-store, I would instead go to another store to buy the brand I want	.794	***
Q.1.3 As a consumer, I do care about an established brand that delivers a quality product for my use	.918	***
Q.1.4 I find it easy to switch from one brand to another	-.771	***
Q.1.5 A brand's reputation influences my purchasing choices	.647	***
Q.1.6 I only buy brands with a good reputation	.691	***
Antecedent 2: Social Media	Factor loadings	Factor loadings
Q.2.1 I trust a brand that is present on social media for communication	.825	***
Q.2.2 I can remember brands with social media visibility when I enter the shops	.837	***
Q.2.3 Social media is a helpful medium to consult when I want to learn more about a brand	.811	***
Q.2.4 I will follow a brand's social media page after I have bought it	.719	***
Q.2.5 I value a brand that follows me back on social media	.632	***
Q.2.6 A strong brand presence/engagement on social media influences my buying behaviour positively towards the brand	.861	***
Antecedent 3: Word-of-Mouth / Brand Community	Factor 1 loadings	Factor 2 loadings
	<i>Listening</i>	<i>Sharing</i>
Q.3.1 Recommendations by other consumers influence my brand choices	.796	
Q.3.2 I value the customer reviews and feedback on brands	.701	
Q.3.3 I trust a recommendation made by a health care professional (such as a pharmacist) on a specific brand	.522	
Q.3.4 Recommendations by other customers on a specific brand could influence me to try their brand	.784	
Q.3.6 Even if I am not asked to, I volunteer to share my experiences with other consumers about the brands that I purchase		.873

Antecedent 4: Customer Experience	Factor 1 loadings	Factor 2 loadings
	<i>Support</i>	<i>Store</i>
Q.4.1 Knowledgeable aisle managers can influence my brand choice when I am uncertain what brand to buy	.672	
Q.4.2 I feel irritated if my chosen brand is out of stock	.534	
Q.4.3 I prefer readily available instore assistance (and not having to look for or ask someone to help me)	.692	
Q.4.4 I value the insight of a pharmacist (or some other knowledgeable person such as the instore manager) to provide information about a brand	.747	
Q.4.5 An efficient store layout is essential when I decide where I will be shopping		.832
Q.4.6 A delightful overall customer experience influences me to support a store that stocks my brand		.813
Antecedent 5 Merchandising & Visibility	Factor 1 loading	Factor 2 loadings
Q.5.1 A supreme display of a brand (i.e., a clear brand block, shelf strips, or point of sale material) indicates that the brand is worthy of my purchase	.853	***
Q.5.2 The more I see the brand in-store at various points, the more I get encouraged to purchase the brand	.814	***
Q.5.3 Merchandising that communicates the brand characteristics encourages me to choose the product	.671	***
Q.5.4 If my brand does not make use of in-store brand merchandising, the low visibility will make it difficult to locate my brands	.720	***
Q.5.5 Good merchandising and/or visibility of a brand demonstrates that this brand values my shopping experience	.837	***
Q.5.6 A well-executed brand on display may influence me to support the brand	.793	***
Outcome: Brand loyalty	Factor 1 loadings	Factor 2 loadings
Q6.1 The reputation of a brand has a significant impact on my total support or devotion to it	.713	***
Q6.2 The presence and engagement of a brand on social media have a significant impact on my overall support or loyalty to that brand.	.715	***
Q6.3 What other people advocate or say about a brand has a significant impact on my total devotion	.706	***
Q6.4 My overall shopping experience will influence my decision to return to a particular store or brand in the future	.655	***
Q6.5 A well-executed brand display in-store will influence my decision to support the brand	.779	***

Table 2 tested the validity of the 35 questions across five antecedents and the outcome to ensure the validity of the questionnaire statistically. Antecedents 1 (Brand reputation), 2 (Social media) and 5 (Merchandising & visibility) are validated as is. All the questions measuring these antecedents respectively, load as one construct indicating that these questions indeed measure the specific antecedent. Antecedents 3 (Word-of-mouth & Brand community) and 4 (Customer experience), however, measures two constructs each; this means that sub-factors exist within each antecedent.

In the case of Antecedent 3, the questions show that questions Q3.1-Q3.4 and Q3.6 all deal with the advice received from other parties on products and brands, thus entailing receiving information. This sub-factor is thus labelled as “Listening to word-of-mouth advice”. Contrary, Q3.6 deals with sharing one’s experiences with other customers, and as such, the sub-factor is labelled as “Sharing advice via word-of-mouth”. Question 3.5 was discarded because it returned a factor loading lower than the required 0.40.

Antecedent 5 also identified two sub-factors. Three questions (Q4.1, Q4.2 and Q4.4) deals with advice in the shop, while Q4.3 deals with irritation on out-of-stock products. Since most of the questions deal with advice and support concerns, this sub-factor is labelled “Support”. The other two questions (Q4.5 & Q4.6) deal with store-specific issues. Hence, the sub-factor is labelled as “Store selection.”

3.2.2. Objective 2: Regression analysis of antecedents

In serving Objective 2, the five antecedents and their relationships towards the dependent variable Brand loyalty were tested using linear regression to determine if the model signifies a good fit and to what extent each of the antecedents contributes towards brand loyalty. This was done by using the AMOS software of IBM SPSS (Version 27). The regression structural equation model is shown in Figure 1. The standardized regression weights and the significance ($p \leq .05$) appear in Table 3 directly below the model. The model summary portraying the R-statistics are shown in Table 4.

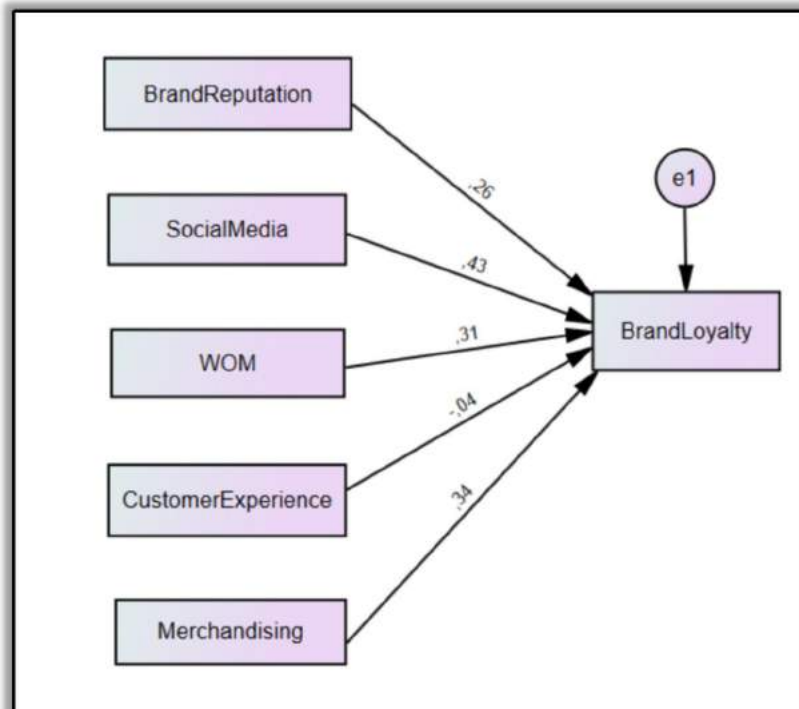


Figure 1: Regression model of brand loyalty antecedents

Table 3: Standardized regression weights, intercept and model summary

Variable description			Estimate	P-Value
BrandLoyalty	<---	BrandReputation	.262	***
BrandLoyalty	<---	SocialMedia	.430	***
BrandLoyalty	<---	WOM	.309	***
BrandLoyalty	<---	CustomerExperience	-.039	.535
BrandLoyalty	<---	Merchandising	.340	***
Intercept			.217	

The analysis shows that all the independent variables except Customer experience are significant at the 95% confidence level) ($p \leq .05$). It is also noteworthy that Customer experience has a negative and low regression weight; this indicates that this independent variable (even if it was significant) would have minimal effect on the brand loyalty of the respondent in this study.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.807 ^a	.651	.638	.39073
a. Predictors: (Constant), Merchandising, BrandReputation, WOM, CustomerExperience, SocialMedia				

The adjusted R^2 is .638, meaning that the data fit the regression model well ($R^2 \geq .60$) (Frost, 2021). This means that the model explains a variance of 63.8%. Also evident from the tables and figure above, the regression model ($y = a + b_1x_1 + b_2x_2 + \dots + b_5x_5$) then shows that the antecedents and their predictive properties towards Brand loyalty are:

Brand loyalty (y) = .217 + .262(Brand reputation) + .430(Social media) + .309(WOM) + .340(Merchandising)

3.2.3. Objective 3: Identify factors of brand loyalty

The data was also subjected to exploratory factor analysis to determine if underlying intelligence or “other factors” were embedded in the data. The results show that eight factors (contrary to the original five antecedents identified from the literature) are present. (This observation is supported by identifying sub-factors in the antecedents’ word-of-mouth/brand community and customer experience (see Table 3).

These factors explain a cumulative variance of 63.5%, and all eight factors have eigenvalues larger than one. As per the Kaiser criterion, these factors should thus all be retained. The Varimax rotated factor matrix appears in the Table 5 below.

Table 5: Varimax rotated factor matrix

Measuring criteria	Component							
	1	2	3	4	5	6	7	8
Q.5.5 Good merchandising and/or visibility of a brand demonstrates that this brand values my shopping experience	.849							
Q.5.1 A supreme display of a brand (i.e., a clear brand block, shelf strips, or point of sale material) indicates that the brand is worthy of my purchase	.821							
Q.5.2 The more I see the brand in-store at various points, the more I get encouraged to purchase the brand	.732							
Q.5.4 If my brand does not make use of in-store brand merchandising, the low visibility will make it difficult to locate my brands	.706							
Q.5.6 A well-executed brand on display may influence me to support the brand	.695							
Q6.5 A well-executed brand display in-store will influence my decision to support the brand	.670							
Q.4.5 An efficient store layout is essential when I decide where I will be shopping	.622							
Q.5.3 Merchandising that communicates the brand characteristics encourages me to choose the product	.520							
Q.2.2 I can remember brands with social media visibility when I enter the shops		.749						
Q.2.6 A strong brand presence/engagement on social media influences my buying behaviour positively towards the brand		.749						
Q.2.1 I trust a brand that is present on social media for communication		.738						
Q.2.3 Social media is a helpful medium to consult when I want to learn more about a brand		.730						
Q.2.4 I will follow a brands social media page after I have bought it		.721						
Q6.2 The presence and engagement of a brand on social media have a significant impact on my overall support or loyalty to that brand.		.688						
Q.2.5 I value a brand that follows me back on social media		.626						
Q.1.2 If I cannot find my brand in-store, I would instead go to another store to buy the brand I want			.764					
Q.1.6 I only buy brands with a good reputation			.721					
Q.1.1. A tried and trusted brand is always my first option			.679					
Q.1.5 A brand's reputation influences my purchasing choices			.661					
Q.1.4 I find it easy to switch from one brand to another			-.631					

Q.4.2 I feel irritated if my chosen brand is out of stock			.492					
Q.3.1 Recommendations by other consumers influence my brand choices				.760				
Q.3.4 Recommendations by other customers on a specific brand could influence me to try their brand				.714				
Q6.3 What other people advocate or say about a brand has a significant impact on my total devotion				.650				
Q.3.2 I value the customer reviews and feedback on brands				.460				
Q6.1 The reputation of a brand has a significant impact on my total support or devotion to it				.408				
Q.4.3 I prefer readily available instore assistance (and not having to look for or ask someone to help me)					.735			
Q.4.4 I value the insight of a pharmacist (or some other knowledgeable person such as the instore manager) to provide information about a brand					.717			
Q.3.3 I trust a recommendation made by a health care professional (such as a pharmacist) on a specific brand					.540			
Q.3.5 If asked, I freely share my experiences with other consumers about the brands that I purchase						.679		
Q.4.6 A delightful overall customer experience influences me to support a store that stocks my brand						.462		
Q.3.6 Even if I am not asked to, I volunteer to share my experiences with other consumers about the brands that I purchase							.703	
Q.1.3 As a consumer, I do care about an established brand that delivers a quality product for my use							.547	
Q.4.1 Knowledgeable aisle managers can influence my brand choice when I am uncertain what brand to buy								-.662
Q6.4 My overall shopping experience will influence my decision to return to a particular store or brand in the future								.606

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.^a

a. Rotation converged in 8 iterations.

The data were tested for sample adequacy (using the test developed by Kaiser, Meyer and Olkin (KMO=.871), Bartlett's sphericity test showed significance ($\chi^2 (595) = 2264.119, p < 0.05$), and the data possess excellent reliability according to the Cronbach alpha coefficient ($\alpha = 0.907$) (Field, 2009:658-659; 675). The first two factors dovetail nicely with the antecedents identified from the literature. In this regard:

- **Factor 1** is labelled *Merchandising and Visibility* (Antecedent 5), while
- **Factor 2** is labelled as *Brand reputation* (Antecedent 1).

These factors explain 27.9% and 8.23% of the variance, respectively. However, the other factors identified new underlying constructs. They are discussed next.

Factor 3: Brand trust and reputation (7.02%)

According to Rust *et al.* (2021:22-23), a brand's reputation is the overall total of how its stakeholders perceive, feel, and discuss it. Therefore, a brand's financial performance might be adversely affected by brand incidents. The following are the characteristics of this definition: All stakeholders (current and potential customers, employees, partners, and investors) are considered rather than just the current or potential clients; (2) thinking, feeling, and talking components (rather than just brand knowledge); (3) actual brand events (e.g., controllable marketing activities, uncontrollable public events); and (4) links to the financial performance of the firm are included.

An organisation's reputation is an asset that can help it differentiate itself from its competitors and create obstacles to new competitors entering the market. As a result of long-term behaviour, a company's reputation is based on its capacity to produce value for customers and other stakeholders. Credibility and trustworthiness are closely tied to the implementation of rules and practices that have been explicitly declared. Therefore, the terms "reputation" and "judgment" or "credibility" are often used interchangeably (Pereira *et al.*, 2021:559).

Brand popularity and knowledge have a favourable impact on customer loyalty. Thus, in contrast, familiarity has a detrimental effect on the user. Although customer loyalty increases as a company's popularity and recognition rise, this impact is reversed as people become more acquainted with the brand.

Factor 4: Out-of-store recommendations (5.06%)

Various factors can significantly affect customers' behaviour, including price, brand awareness, and brand image. According to De Toni *et al.* (2021:633), there is a strong correlation between price and brand when customers have limited information about what they are considering purchasing. In addition, customers' perceptions of fairness and value (cognitive factors) and, in some cases, a higher social status are influenced by well-known brands with higher prices and higher quality (affective factors). Thus, the information consumers obtain before in-store purchase may influence their decision making according to what they know about the brand. Items priced at a high rate, yet brand or quality unknown can be perceived as an "expense" item to purchase.

What a brand communicates to their market is critical; the key messages they want to share with consumers can direct consumers towards finding a need or a want for the desired brand.

Factor 5: In-store advice (4.78%)

Personal selling, according to Indrasari *et al.* (2019:191), these sales are found to be more successful as it places a higher emphasis on direct contact with customers face to face are more successful. This is primarily to promote their services or introduce new products. It is expected that face-to-face interactions will significantly impact customers' perceptions of and interest in the product

Personal selling directly impacts the consumers' buying behaviour, which is an essential tool of marketing. Personal selling changes the negative attitudes of the customer to positive ones. According to Azeez and Abeyratna (2020:48), their research explains how personal selling affects customers'

buying behaviour relating to clothes retail shops. Therefore, a salesperson's advice can change customers' attitudes and, ultimately, the customers' buying behaviour.

Factor 6: Shopping experience (4.14%)

According to Hu and Jasper (2018:153), these authors defined a consumer's shopping experience as the "totality of things that a consumer encounters or lives through as he or she makes consumption-oriented movement in a retail setting, with or without the possibility of making purchases". Thus, the definition mentioned above is also in line with how retail professionals perceive the shopping experience.

Retail stores would benefit significantly from knowing which specific aspects of their offerings affect customer satisfaction of unexpected buyers. Consumer insight information could develop ad hoc strategies for reaching these customers and building profitable long-term relationships with them. Satisfied unplanned buyers can return to the store where they purchased their unplanned item(s) and positively discuss it with other customers (Martínez-Ruiz *et al.*, 2017: 277). As many purchases are made in the store, new technologies can help store managers leverage the economic potential of unplanned purchases. For example, mobile applications could inform consumers about special in-store promotions connected with their planned purchases, thus inducing them to purchase unplanned items. Customers are more likely to return, spend, and recommend the product if they have a positive shopping experience (Hu & Jasper, 2018:155).

As a result, understanding which store attributes are most important to customers' satisfaction who tend to make impulsive purchases may help retailer managers better set their offerings, effectively deliver value to these customers, and ultimately increase their profits (Martínez-Ruiz *et al.*, 2017: 278).

Factor 7: Brand ambassador (3.25%)

A "famous person" is a celebrity or a brand ambassador. A well-known person for accomplishments outside of the product category in which they are endorsing is an expert in their profession. Thus, celebrities have a disproportionately high level of public recognition among a particular set of people. They have unique characteristics, such as their attractiveness, extravagant lifestyle, or ability to master a particular talent (Olugbenga & Oluwafemi, 2018:456).

Kim *et al.* (2020: 8) found that endorsements, including their attractiveness and expertise, were linked to brand loyalty through brand passion. Previous studies found connections between consumers' satisfaction with their relatedness needs and their brand passion for sporting goods. Therefore, consumers develop a strong emotional attachment for a brand when exposed to an endorsement, especially by an attractive star athlete with the image of an expert in their field. Individuals may have a basic psychological need for relatedness, and when that need is met, a strong emotional attachment develops with the related entity.

According to Olugbenga and Aluwafemi (2018:456), there has been a dramatic increase in celebrity endorsements as a marketing tactic in recent years; celebrities have been utilized for anything from sports to beverages to all kinds of electronic devices to a wide range of other things. However, despite celebrity endorsers becoming prevalent across many industries, this trend is not restricted to just one. Researchers suggested that the employment of celebrities in TV commercials provokes the interest of customers, particularly when their favourite celebrities are involved. Celebrity endorsements are an excellent method to draw attention to a brand or product and enhance consumers' likelihood of buying it. As a result, advertisers are increasingly using celebrities in their campaigns.

Factor 8: Personal choices (3.13%)

There are several reasons why consumers like to experiment with new personal choices from a marketing and psychological standpoint.

In psychology, individual elements like satiation, the need for stimulation, and ambiguity about future preferences are examined to understand the phenomenon.

Various factors have been shown to encourage consumers to make more diverse purchases over time. However, internal or personal motivation is the first reason customers desire variety in their personal choices (Stasiuk *et al.*, 2021:1121).

4. Conclusions and recommendations

The conclusions are first drawn on the research methodology, and second, on the results. Recommendations follow the conclusions.

4.1 Research methodology

Conclusion 1:

The study performed a rigorous theoretical review of brand loyalty and its antecedents. From this study, a proven model was selected as the foundation for the empirical research. Likewise, theory guides the researcher to relevant questions to compile the online questionnaire. It is thus concluded that doing a sound theoretical study resulted in a relevant and quality research instrument.

Recommendation 1:

It is recommended that future researchers take note of the value of a sound theoretical study; this would guide them towards a solid foundation based on relevant literature. These researchers could duplicate or mold their research on similar theoretical principles.

Conclusion 2:

Regarding data collection, the response rate from participants was quick and effective using both the social media platform as well as an electronic questionnaire on GoogleForms.

Regarding analysis, sound research and consultation with statistical experts (such as the NWU Statistical Consultation Services) are imperative to select proper analytics procedures. In addition, using recent and specialised software to analyse the data are also required. These methodological guidelines assisted the study greatly, and it can thus be concluded that the proper analysis and data mining provided more than just the apparent intelligence in the data. Furthermore, it is concluded that the methodology followed suited this study well. More specifically, it can be concluded that the data were:

- 1) Adequate, meaning that a “sufficient” number of respondents participated (the Kaiser, Meyer and Olkin measurement exceeds 9.70)
- 2) Suitable for multivariate analysis because Bartlett’s test showed significance ($p \leq 0.05$)
- 3) Reliable as per Cronbach alpha’s coefficient ($\alpha \geq 0.70$).

Therefore, it is concluded that the data are fit to use in analysis and the results, therefore, suitable for managerial decision-making. It is also concluded that electronic platforms can be used to quickly and effectively collect data, albeit the target population needs to be selected effectively to get a good response.

Recommendation 2:

It is therefore recommended (based on Conclusion 2) that other researchers:

- 1) Ensure their data is suitable for analysis by performing the tests mentioned above
- 2) Make use of knowledgeable statistician to analyse the data
- 3) Use specialised statistical software to correctly analyse the data.

4.2 Results

Conclusion 3:

The analysis not only measured the respondents’ views on the initial theoretical model (the measuring criteria and the antecedents), but also identified underlying factors (or intelligence) in the data. Furthermore, the analysis confirmed these factors with confirmatory factor analysis, and measured model fit indices. Based on the thorough analysis of the data, it is concluded that the antecedents of

brand loyalty and the identified factors are relevant and valid constructs to manage brand loyalty. More specifically, it is concluded that:

- 1) The results remained valid when tested on the original five antecedents of CES
- 2) The antecedents could be used to manage and influence brand loyalty in consumers
- 3) The underlying intelligence (factors) provides a secondary and good indication of what drives brand loyalty. In this case, eight factors have been identified, and these factors are more specific than the original five antecedents identified from the literature.
- 4) The confirmed model shows a fair fit to the brand loyalty data. This means the model can be used with confidence.

Recommendation 3:

The results of this study can assist and guide managers towards improving their brand loyalty managerial decisions. It is thus recommended that:

- 1) Managers peruse the results and internalise knowledge specifically relevant to their brands and customers.
- 2) The confirmed model be operationalised and used in brand loyalty decision-making because industry and management can benefit from the results in practice.
- 3) Academia and other researchers also take note of the results as it adds to the body of brand-loyalty knowledge while also forming a basis for further research.

5. Areas of further study

In this section, recommendations are made for future researchers. Possible areas for future research are:

- Investigating the age and demographic areas with regards to how the participant could have viewed their opinions. A more centralised focus towards different ages groups or generations such as Gen Z, Millennials, Gen X, Boomers, and Silent Generation can also be investigated to compare or illustrate which engagement strategy is most influential towards their brand loyalty.
- Expand the study to a wider geographical area and also use more social media platforms.

6. Limitations

There are some limitations to this study. The limitation is that his study used only one facet of social media, namely Instagram, to recruit participants. More social media platforms could have yielded a better response. The sample size was 135 participants, and a larger sample size on various social media platforms can reach a larger target population with a more comprehensive view regarding research.

7. Managerial Implications

Based on the conclusions and finding the following managerial implications are evident:

Implication 1: Managers who aim to base decision-making on research-based information should take note and make sure that their data is reliable and the sample adequate before they initiate managerial action steps

Implication 2: This study provides a blueprint for social media data collection. By implication managers can use this as an example on how to collect data easily, quickly and at low cost.

Implication 3: Managers should properly analyse the data before making decisions. Proper analysis and interpretation are key to making good managerial decisions (see for example the newly identified sub-factors in table 1).

Implication 4: Managers should deal with decisions that would provide them with the greatest return on input; this means that they should deal with the factors explaining the most variance first. In practice, Merchandising, visibility and Brand reputation are thus the first managerial inputs to consider addressing.

Implication 5: The brand loyalty antecedents are inter-related. Managers should take note that addressing one antecedent has an effect on the others. This should be factored in when they make managerial decisions.

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The Role of Culture in First Year Student's Career Choice

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Keywords

First-year students;
Career choice; Culture;
Career perceptions.

Abstract

Research has indicated that a scholar's career choices are influenced by good career prospects, such as salaries and employment opportunities. In addition, their career decisions are influenced by parents, teachers and cultural backgrounds. Culture is the customs and habits that characterise a certain society or nation. Individuals' decisions to choose a particular career might be influenced by their cultural values. This study aimed to determine whether first-year students' career choices were influenced by their culture and cultural perceptions of their chosen career. A questionnaire was completed by 405 first-year IT and Business students at a large university in South Africa. The results were statistically analysed and included Exploratory Factor Analysis. The results indicated that culture does influence a first-year student's career choice, specifically students with different home languages. The results further indicated that the IT group had better perceptions about their chosen career compared to the Business group. The IT group listed specific IT job titles as their chosen career. A statistically significant correlation was obtained between the factors *Culture* and *Perceptions about their chosen career*. This study forms the basis for future research to create IT career awareness amongst scholars, parents and teachers.

1. Introduction

Information Technology (IT) plays an important role in modern business sustainability and growth. Employing skilled IT professionals is essential for business success and profitability; however, businesses are experiencing an IT skills shortage (Kirlidog & Coetzee, 2018; Malinga, 2022). The Career Junction Index (Career Junction Index, 2022) revealed that Software Development is currently the most sought-after skill in the IT job market. South African software developers are also in high demand internationally and 20% of South African software developers are actively looking to move jobs within the next 12 months in search of offshore fortunes (Malinga, 2022). Computer Science (CS) and Information Systems (IS) graduates are also experiencing increased demand from the IT job market.

Several factors influence first-year students' career choice decisions. The factors that influence first-year students' decisions to choose IT careers included computer experience at school, parents, advisors, their culture and awareness of IT job titles (Twani, Calitz & Cullen, 2020). The career choices made by young adults are influenced by role models, teachers, society and the education system (Gathungu & Mwangi, 2014). Research indicates that parents and teachers were more likely to encourage girls towards traditional

careers, for example teaching, than boys (Adya & Kaiser, 2005). Gathungu and Mwangi (2014) indicated that culture does play a role in the career choices women make worldwide.

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Culture is defined as the arts, customs and habits that characterise a particular society or nation. Culture includes how the people in a society dress, the customs they practice in their marriages, the languages they speak, the way the family lives, the family work patterns, religious ceremonies and leisure pursuits (Patton & McMahon, 2014). Culture can influence a person's career decisions (Esterhuyse, Calitz & Cullen, 2019). Cultural factors that influence career choice include but are not limited to religion, personal relations, family responsibilities and attitudes towards networking (Esterhuyse, et al., 2019).

Individuals' career decisions may depend on their cultural values (Ma & Allen, 2009). The differences between cultures of individualism and collectivism are highlighted by Majid, Weserat and Sharif (2014). Individualism allows individuals to decide for themselves what kind of career they want to pursue, with the focus being on personal success. Collectivism views norms as more important than an individual's attitudes and career decisions are based on how the culture, family and friends view that career (Majid, Weserat & Sharif, 2014).

Theories relating to career choice have focused on the characteristics of individuals, their environment and more recently, on the stages and process of career development (Patton & McMahon, 2014). The Social Cognitive Career Theory (SCCT) has developed from Bandura's (1986) general social cognitive theory. Alshahrani, Ross and Wood (2018) indicated that the SCCT can be used as a framework for understanding how personal, cognitive and contextual factors influence career choices. The SCCT is a theory that has become fundamental when studying how young people develop interests and career choices (Balakrishnan & Low, 2016).

This study aimed to determine the influence of culture on first-year student's career choice and their perceptions of their chosen career. This study provides insights into the role of culture in the career decisions made by first-year IT and Business students. In the following sections, the research problem and research objectives are presented. Thereafter a literature review is provided and the research methodology and the results of the study are discussed. The study is concluded in Section 9, where limitations and future research are also presented.

2. Problem Investigated

First-year students' career choices are influenced by parents, teachers, society and the educational system. First-year IT students' career choices are influenced by previous exposure to IT, specifically programming (Twani, et al., 2020). It has been shown that culture does play a role in career choices (Gathungu & Mwangi, 2014). The research problem addressed in this study is that many scholars do not consider a career in IT, possibly because of cultural influences.

3. Research Objectives

Several factors influence a scholar's perceptions about a career and finally their career choice. These factors include exposure to career guidance at school, parents, teachers and the cultural environment they grow up in. The cultural factors that influence a student's perceptions of career choices include religion, personal and social relationships, family, friends and role models (Esterhuyse, et al., 2019). The main research objective of this study was to determine whether a scholar's culture influences their first-year student's perceptions about a chosen career and their career choice.

4. Hypotheses

The following hypothesis was formulated for the study:

- H₁ - The factor *Culture* is positively related to *Perceptions about a Chosen Career*.

5. Literature Review

In the following sub-sections theories relating to career choice are discussed, including literature relating to culture, career perceptions and sources of information.

5.1 Theory of Reasoned Action

A person's decision to choose and pursue a specific career is generally made during high-school years and is influenced by several factors. These factors may be internal to the individual, such as interests or skills, or external, such as influences by families, teachers, culture and the education system (Dick & Rallis, 1991). An important theory related to career choices is the Theory of Reasoned Action (TRA) by Azjen and Fishbein (1980), which states that an individual's behavioural intention is influenced by his/her attitude and the social subjective norms prevalent in their environment. This theory is derived from the Expectancy Theory, which indicates that motivation for a career decision is the result of the individual's belief in future possible outcomes. The TRA stresses that an individual's behaviour can be examined and predicted through the examination of their underlying basic motivation. A scholar's career choices can be predicted based on their respective attitude and the influence of those in their social circle and in this case, their culture (Dick & Rallis, 1991).

5.2 Social Cognitive Career Theory

The Social Cognitive Career Theory (SCCT) was developed from Bandura's general Social Cognitive Theory (Bandura, 1986). The theory aims to understand the processes and outcomes whereby individuals develop an interest in and make decisions about their educational pursuits and careers (Lent & Brown, 2006). Alshahrani, et al. (2018) state that the SCCT is a framework for understanding how personal, cognitive and contextual factors influence a person's career choices. According to the theory, social and structural factors impact career choice indirectly through individual factors. The SCCT is a theory on how people make decisions about their future by examining the factors that will influence their decisions (Armstrong, Riemenschneider & Giddens, 2018).

The SCCT theory was originally based on three models, namely the development of study and career interest; the leading of those interests into study and career choices and the performance and persistence people achieve to realise their choices. A fourth model that aimed to explain satisfaction at study and work was added later (Lent & Brown, 2006). SCCT is thus a motivational theory driven by self-efficacy, outcome expectations and goal-directed activity.

5.3 Sources of information

The factors affecting IT career choices have been extensively researched internationally and in South Africa. Previous research indicates that IT graduates entering the IT industry were not familiar with IT careers, career descriptions and career opportunities (Calitz, Greyling & Cullen, 2011; Cohen & Parsotam, 2010). There are many initiatives to promote careers in IT in several countries. For example, scholars and tertiary level IT students in England and the USA are educated about IT careers and IT career opportunities. Students receive advice from family, teachers and in the United Kingdom, for example, professional IT organisations, such as the British Computer Society, actively promote IT career awareness. This is referred to as social support, which students need when making career choices (Alshahrani, Ross & Wood, 2018). Additionally, interest, awareness and views from family and professionals have also been regarded as influencers of students' choice of pursuing a career in IT (Babin, Grant & Sawal, 2010; Cohen & Parsotam, 2010). Several studies have identified the support from family, friends, teachers and career advisors as key influencers for scholars' decisions when choosing a career (Säde et al., 2019).

A study by Govender and Khumalo (2014) indicated that influencers, which include family and friends and their lack of knowledge, led to students not choosing to pursue IS studies. Students' decisions to enrol or not to enrol for IS-related courses were influenced by the lack of information from their teachers (Seymour & Serumola, 2016).

5.4 Culture

Taylor (1871) provides one of the earliest definitions of culture, namely the complex whole, which includes knowledge, belief, art, morals, custom and any other capabilities and habits acquired by humans as members of society. Subsequent contributions share the all-inclusive nature of culture as affecting aspects of human life in a society. Culture is defined as the customs and habits that characterise a certain society, nation or group. Additionally, culture includes the way people in society

dress, the language they speak, family lives, religion, work patterns and leisure pursuits (Itulua-Abumere, 2013). Zimmermann (2017) summarises culture as the beliefs, values and material objects that constitute people's way of life. Culture influences the career choice of a person and refers to the way people work, the way they make decisions about work, how their career paths are shaped, the way groups communicate, the way they take care of and educate their children, how they provide food and shelter and how they earn a living (Zimmermann, 2017). Individuals' perceptions towards careers may depend on their cultural values (Majid, et al., 2014). Individuals' career decisions are sometimes based on their perceptions of status at work and the need to achieve and maintain their status, however individuals with a certain cultural value may use their own standards for judging work status (Torelli, Leslie, Stoner & Puente, 2014).

Gathungu and Mwangi (2014) further indicated that culture influences a person's career choices. Globally, females are often noted to have strong societal ties to family units, religion and cultural activities. A female's participation in a career often hinges on the support from these communities and the ability to continue with the associated activities with these groups (Potter, von Hellens & Nielsen, 2009; Seymour & Serumola, 2016). In South Africa, women view themselves according to traditional society's expectations, which emphasise women as homemakers before being viewed as career women. Adya and Kaiser (2005) indicated that females who opt for a career in IT generally have parents who are highly skilled and professionally educated. The influence of parents with degrees allows the family structure to choose non-traditional careers where success is highly valued.

5.5 Career perceptions

Scholars make career choices during their early secondary school years (Njoki, Wabwoba & Micheni, 2016). The high school era is a critical time where scholars are guided by their family, teachers, career counsellors and those role models most influential to them to choose school subjects that later direct them to future fields of study and careers. Seymour and Serumola (2016) state that scholars have misconceptions of the IT field, due to limited exposure at high school. The perceptions were dominated by the misperception of the value of IT and a lack of IT information. In support, Govender and Khumalo (2014) concur that some scholars make their decision not to enrol for IT studies, due to a lack of access to information regarding IT courses.

Cohen and Parsotam (2010) state that the primary determinants of a student's career and study choice is the student's perceptions of IT at school. Additionally, they include stereotypes students have about the IT field/professionals and job availability. Hodges and Corley (2016) further add that job availability does influence students' career choice. Students' IT career choice is further influenced by the reputation of IT-related fields in society (Sade et al., 2019). Other factors that influence students' perceptions are opportunities for employment and salaries, access to technology at school and home and students' perceptions of IT at school level (Potter, von Hellens & Nielsen, 2009). Stone (2019) indicated that at school level, students can form misperceptions regarding careers in IT. Factors such as gender, socioeconomic status, societal norms and access to information technologies all contribute to the misperceptions.

6. Research Methodology

This study followed a positivist paradigm and gathered quantitative and qualitative data from first-year students. The results for the independent factor *Culture* and dependent factor *Perceptions about Chosen Career* are reported. A five-point Likert rating scale (1= Strongly disagree to 5= Strongly agree) was used to gather information from first-year students, regarding the factors that led them to choose a career, specifically in IT and Business. The questionnaire was captured using an on-line survey tool, QuestionPro. The data were collected from first-year students enrolled for CS, IS and IT programmes and Business programmes at a Comprehensive University in South Africa. The data were statistically analysed by the university statistical consultant, using Statistica and included Exploratory Factor Analysis (EFA). Ethics approval was obtained from the University Ethics Committee, #H2010BUSBS15.

First-year CS, IS and IT students have decided to enter the IT industry and an understanding of the factors influencing their career decisions is important. A questionnaire for first-year students was compiled using a similar questionnaire that was validated and used in previous studies (Calitz, Cullen & Fani, 2020; Twani, et al., 2020). The items for the factor *Culture* were operationalised from the literature (Gathungu & Mwangi, 2014; Pretorius & De Villiers, 2010). In order to determine personal perceptions and honest information, it was decided to keep the survey anonymous. The questionnaire consisted of the following sections:

- Biographical details (Age, Gender, Home Language, Race, Qualification);
- Career choice influencers;
- Culture;
- Learning experiences;
- Perceptions about Chosen Career; and
- Career awareness.

7. Results and Research Findings

The quantitative data were analysed and the research findings are discussed in the following subsections, namely:

- Biographical details;
- Role of culture; and
- Career perceptions.

Biographical Details.

The first-year survey was completed by 405 first-year students at the Nelson Mandela University. Table 1 shows that the sample consisted of 184 males and 221 females. The sample included 82% Black, 11% White, 5% Coloured and 1% Asian students. The citizenship of the total group was mainly South African (86%, n=348). A small number of students were from Botswana, Malawi, Namibia, Zambia and Zimbabwe.

Table 1: Demographical variables

Gender	Male	Female	Total	n (%)
	184 (45%)	221 (55%)	405 (100%)	
Age	18 years	19 years	20 years	21+ years
	101 (25%)	111 (27%)	66 (16%)	127 (31%)
Race	Black	Coloured	Asian	White
	332 (82%)	21 (5%)	6 (1%)	46 (11%)
Qualification	CS/IS/IT Degree	IT Diploma	Business	
	92 (22%)	181 (45%)	132 (33%)	
Career choice				
CA, Accountant, Attorney, Auditor, Lawyer, Forensic auditor, Economist, Doctor, Investment Specialist, Manager, Pilot, QS, Scientist				114 (28%)
Entrepreneur, Lecturer, Teacher, COO, Assessor, HR, Politics, Tour guide, Bookkeeper, Intern,				51 (13%)
Software developer, Programmer, Game designer, Graphic designer, UX/UI designer, BI, BA, Software Engineer, IT Manager, IT Specialist, System Analyst, AI and Machine learning				194 (48%)
TV personality, TV Production, Arts Director, Aerospace Engineer, Unknown/unsure, anything available				46 (11%)

This study focused on first-year students who have chosen CS, IS and IT programmes (n=92, 22%), including IT diploma programmes (n=181, 45%). A total of 273 (67%) first-year students thus enrolled for IT-related programmes. The Business group (n=132, 33%) consisted of students

completing programmes, such as BCom Accounting Sciences, BCom General, BCom Business Management, BCom Economics and BA General.

The first-year students were asked to specify their career choice or job title (Table 1). Of the 273 (67%) first-year IT students, 194 (48%) listed an IT-related job title. Thus, not all first-year IT students indicated an IT career or job title. A total of 114 (28%) first-year students specified other professions, such as Chartered Accountant, Auditor, Investment Specialist/Consultant and Manager which are business orientated.

Role of Culture

Culture focuses on understanding the influence of culture on a chosen career. Table 2 indicates the frequency distributions for each of the questionnaire statements on culture. Seventy-eight percent (n = 314) of the respondents indicated that in their culture, people are encouraged to study towards professional careers, such as doctors or chartered accountants. Seventy-two percent (n = 290) of the respondents indicated that in their culture, it is important to obtain a qualification. Sixty-two percent (n = 250) of the respondents indicated that IT is a career for both men and women. Only 34% (n = 138) agreed that many people in their culture clearly understand IT careers. Most of the respondents agreed with the statements for the rest of the items.

Table 2: Frequency distribution – Culture (n=405)

Items	Disagree		Neutral		Agree	
	n	%	n	%	n	%
In my culture, people have a clear understanding of professional careers, such as a chartered accountant	67	17%	134	33%	204	50%
In my culture, people have a clear understanding of IT careers	122	30%	145	36%	138	34%
In my culture, a woman is expected to have a family and children	116	29%	107	26%	182	45%
In my culture, having a large family is important	163	40%	147	36%	95	24%
In my culture, IT is seen as a career for men and women	52	13%	103	25%	250	62%
In my culture, it is important to have a qualification	37	9%	78	19%	290	72%
In my culture, it is important that women have a formal qualification	52	13%	142	35%	211	52%
In my culture, people encourage children to study towards professional careers, such as a doctor or a chartered accountant	32	8%	59	15%	314	77%
In my culture, women are expected to have a full-time job	67	17%	184	45%	154	38%
People in my culture are religious	20	5%	117	29%	268	66%

The Cronbach alpha coefficient for the factor *Culture* (n = 405) was 0.70 indicating *Good* reliability. Exploratory Factor Analysis (EFA) is a multivariate statistical technique that verifies the constructs influencing a set of responses. Exploratory factor analysis is used to categorise items that fit together, thus measuring the same factor. The Eigenvalue is used to determine which items to retain for each factor. The factor loading greater or equal to 0.300 was deemed significant at the $\alpha=0.05$ level for the sample size n = 405.

The initial factor loadings for the factor *Culture* resulted in a three-factor loading model, explaining 57.8% of the total variance. The items *In my culture, having a large family is important* and *In my culture, a woman is expected to have a family and children* did not meet the minimum factor loading of .300 and were removed. The analysis was repeated and a two-factor model resulted in an optimal solution with 53.2% of the total variance explained. The original culture factor portrayed two sub-factors (Table 3). These factors were renamed and Factor 1 was named *Culture Expectations* with five items while Factor 2 was named *Culture Career Understanding* consisting of three items. These two factors should be further explored in future studies.

Table 3: EFA Final Loadings (2 Factor Model) – Culture (n = 405; Minimum significant loading .300)

Item	Factor 1	Factor 2
In my culture, it is important to have a qualification	.751	.066
In my culture, it is important that women have a formal qualification	.737	.244
In my culture, women are expected to have a full-time job	.731	.083
People in my culture are religious	.638	-.091
In my culture, people encourage children to study towards professional careers, such as a doctor or a chartered accountant	.577	-.045
In my culture, people have a clear understanding of IT careers	-.007	.850
In my culture, people have a clear understanding of professional careers, such as a chartered accountant	.081	.798
In my culture, IT is seen as a career for men and women	.248	.602
Explained variance	2.45	1.80
% of Total variance	30.6%	22.5%
Total % of Variance Explained = 53.2%		

The results of the ANOVA analysis (Table 4) show that Home language is statistically ($p = .004$) and practically significant (Cohen's $d = 0.36$). Therefore, this depicts a difference in mean values for Home language.

Table 4: Univariate ANOVA Results - Culture

Effect	F-value	D.F.	p-value	Cohen's d	Practical Sig
<i>Gender</i>	3,56	1; 401	,060	n/a	n/a
Age Category	0,20	1; 401	,658	n/a	n/a
<i>Race</i>	1,38	2; 227	,254	n/a	n/a
Home Language	8,62	1; 401	,004	0,36	Small

The post-hoc results in Table 5 affirm the differences between respondents Home languages. For respondents with the Home language of Afrikaans/English, their culture was more influential ($\mu_2 = 3.77$) than respondents with an African Home language ($\mu_1 = 3.57$). The results indicate that Culture has a greater influence on respondents with an Afrikaans/English Home language than the African Home language. However, these results must be treated with caution, as Coloured students could speak Afrikaans or English at home and Black students could speak English at home.

Table 5: Post-hoc Results - Culture

Effect	Level 1	Level 2	μ_1	μ_2	p-value	Cohen's d	Practical Sig
Home Language	Afrikaans /English	Black Languages	3,77	3,57	,004	0,36	Small

Perceptions of chosen career

Table 6 shows the frequency distribution for each item relating to the perceptions about their chosen career. Overall, the respondents agreed with the statements regarding the perceptions of their chosen careers. Ninety-seven percent ($n = 391$) of the respondents agreed that they would learn new skills in their chosen career, while 91% ($n = 361$) acknowledged they will have to keep ahead of the change and technologies in their chosen field. Seventy-four percent ($n = 299$) of respondents agreed that they have good prospects for a better than average salary in their chosen career.

Table 6: Frequency Distribution: Perceptions about Chosen Career (n = 405)

Statement	Disagree		Neutral		Agree	
	n	%	n	%	n	%
I am happy with my career choice	17	4%	68	17%	320	79%
My family respects my career choice	28	7%	53	13%	324	80%
My chosen career will be rewarding	4	1%	54	13%	347	86%
I would recommend my career choice to others	10	2%	66	16%	329	82%
I must keep ahead of change and new technologies in my chosen career	5	1%	31	8%	369	91%
I will learn new skills in my chosen career	0	0%	14	3%	391	97%
There are many jobs available in the career I have chosen	14	3%	84	21%	307	76%
There are good prospects for a better than average starting salary in the career I have chosen	5	1%	101	25%	299	74%
I will have opportunities to work in different kinds of business functions in my chosen career	12	3%	68	17%	325	80%
I can become an entrepreneur with my career choice	14	3%	73	18%	318	79%

The Cronbach alpha coefficient for the factor Perceptions about a chosen career (n = 405) was $\alpha = .87$, indicating excellent reliability. The initial factor loadings of the Eigenvalues for the 10 items for the factor, *Perceptions about chosen career*, resulted in a two-factor model, explaining 47.3% of the total variance. The items *My family respects my career choice* and *I can become an entrepreneur with my career choice* did not meet the minimum significance of .300 and were removed. A one-factor model was considered an optimal solution with 52.4% of the total variance explained (Table 7).

Table 7: EFA Final Loadings (1 Factor Model) – Perceptions about chosen career (n = 405; Minimum significant loading .300)

Item	Factor 1
My chosen career will be rewarding	,789
There are many jobs available in the career I have chosen	,747
I will learn new skills in my chosen career	,743
I will have opportunities to work in different kinds of business functions in my chosen career	,727
I would recommend my career choice to others	,719
I am happy with my career choice	,713
There are good prospects for a better than average starting salary in the career I have chosen	,680
I must keep ahead of change and new technologies in my chosen career	,663
% of Total variance explained = 52.4%	30.6%

Gender differences were identified for the factor *Perceptions about chosen careers* (Table 8).

Table 8: Univariate ANOVA Results - Perceptions about Chosen Career

Effect	F-value	D.F.	p-value	Cohen's d	Practical Sig
Gender	5,53	1; 401	,019	0,27	Small
Age Category	3,52	1; 401	,061	n/a	n/a
Race	3,98	1; 401	,020	n/a	n/a
Home Language	0,89	1; 401	,345	n/a	n/a

The Post-hoc results confirm that *Gender* is statistically ($p = 0.19$) significant with a small practical significance (Cohen's $d = 0,27$). Female ($\mu = 4.26$) respondents had higher perceptions about their chosen career compared to males ($\mu = 4.11$), as indicated in Table 9.

Table 9: Post-hoc Results - Perceptions about Chosen Career

Effect	Level 1	Level 2	μ_1	μ_2	p-value	Cohen's d	Practical Sig
<i>Gender</i>	<i>Male</i>	<i>Female</i>	4,11	4,26	,019	0,27	Small

Pearson Product Moment Correlations and t-Tests

A correlation coefficient r is statistically significant at the 95% confidence level ($p= 0.05$). A statistically significant correlation ($r=0.120$) exists between the factor *Culture* and *Perceptions about chosen career*. However, the correlation was not practically significant. In Table 10, the one-sample t-test ($n=405$; d.f. = 404) indicated both statistical and large practical significance for *Culture* ($t=35.29$; $p<0.0005$; Cohen's $d=1.27$) and *Perceptions about chosen career* ($t=28.72$; $p<0.0005$; Cohen's $d=1.43$).

Table 10: One-sample t-Tests.

Variable	Mean	S.D.	95% Lo	95% Hi	$H_1:\mu$	t	p (d.f.=404)	Cohen's d
Culture	3.62	0.58	3.56	3.68	$\neq 2.60$	35.29	<.0005	1.75 Large
Perceptions about Chosen Career	4.19	0.55	4.14	4.25	$\neq 3.40$	28.72	<.0005	1.43 Large

One-Sample t-tests were conducted between the IT and Business groups (Table 11). No statistically significant difference exists between the factor *Culture* and the IT and Business groups. The factor, *Perceptions about the Chosen Career* had statistical significance ($p = 0.040$) and a small practical significance (Cohen's $d = 0.22$). The results showed that the IT group had better *Perceptions about their Chosen Careers* ($\mu = 4.23$) than the Business group ($\mu = 4.11$). A possible explanation could be that the IT group ($n=194$; 48%), as indicated in Table 1, could list an IT career or job title.

Table 11: One-sample t-Tests.

Factor	Group	Mean	S.D.	Diff	t	p(d.f.=403)	Cohen's d
Culture	IT	3.65	0.58	0.09	1.46	.144	n/a
	Business	3.56	0.58				
Perceptions about Chosen Career	IT	4.23	0.54	0.12	2.06	.040	0.22
	Business	4.11	0.58				Small

8. Managerial Implications

This study has implications for IT departments in Universities, businesses that have IT employees and schools who are instrumental in giving career advice to scholars. Universities must embark on education drives to inform both scholars and parents about career choices and the required degrees to pursue those careers. IT plays an important role in modern business sustainability and growth. Employing skilled IT professionals is essential for business success and profitability; however, businesses are experiencing an IT skills shortage (Kirlidog & Coetzee, 2018).

Businesses should collaborate with universities to educate scholars, parents and teachers so that the shortage of IT people is resolved. It is in their interest to educate scholars so that they have a secure pipeline of graduates, which will enhance the sustainability of their businesses. The IT awareness campaigns need to address the issue of culture and its influence on career choice as indicated in this paper. Suggestions include identifying role models from different cultures who have built successful careers in IT who could become 'evangelists' to inform and persuade scholars of the benefits of choosing this career path.

9. Conclusions, Limitations and Future Research

IT remains a scarce skill industry, which is compounded by limited IT career awareness amongst scholars, teachers and parents. Various factors influence first-year students' career decisions. Research has indicated that culture influences scholars' decisions when choosing a career (Sade et al., 2019). A scholar's career preferences may be influenced by the perceptions of those in their family and in their culture. The study aimed to determine if a first-year student's culture influences their career choice and perceptions about their chosen career.

The results indicate that people did not have a clear understanding of IT careers as only 34% (n=138) agreed with the statement. On the other hand, 77% (n=314) agreed that people encourage children to study towards professional careers, such as a doctor or a chartered accountant. The first-year students indicated that they were happy with their career choice (79%, n=320) and the majority of first-year students indicated that their family respects their career choice and that they would recommend their career choice to others (Table 6). The majority of the respondents indicated that they must keep ahead of change and new technologies in their chosen career and that they will learn new skills in their chosen career. There were statistically and practically significant ($p = .019$; Cohen's $d = 0.36$) differences between the IT group ($\mu = 4.23$) and the Business group ($\mu = 4.11$) regarding career perceptions. The IT group had better perceptions of their chosen career than the Business group. The hypothesis H_1 - The factor *Culture* is positively related to *Perceptions about a chosen career* ($p < .0005$, $r = 0.120$) was accepted.

Home languages are rough indicators of cultural identity (Eaton & Louw, 2000). In their study, investigating the influence of culture on career decisions, Calitz et al. (2020) indicated that South African ethnic groups had differences in the role that culture plays in the influence of a career choice. Therefore, the results of this study are similar, as Culture amongst the Afrikaans/English speakers compared to African languages speakers differs statistically ($p < .004$; Cohen's $d = 0.36$). One possible conclusion could be that parents and the family of students speaking African languages at home are less familiar with IT careers. Theories of cross-cultural differences in the conception of the self, derived from individualism-collectivism research are also useful and applicable in the African context (Eaton & Louw, 2000) and could have an influence on students making choices for themselves or to fit in with their cultural expectations (Majid, Weserat & Sharif, 2014).

Scholars make subject choices in secondary school. Different stakeholders, including parents, teachers and universities should make an effort to try and change the culture regarding IT career choices, specifically for female scholars. Educating these stakeholders regarding IT careers could influence the scholars' future career choices, increase the number of IT graduates entering the profession and help alleviate the IT skill shortage.

This study confirms the TRA theory, as the subjective norms that are included in the TRA model, include the influence of parents, teachers and culture on an individual's career decisions (Balakrishnan & Low, 2016). The research has given insight into the role of culture on first-year students' career choices. The limitations of this study were that the study focused on one comprehensive university in South Africa and that the factor *Culture* actually consisted of two sub-factors, namely *Culture Expectations* with 5 items and *Culture Career Understanding* with three items (Table 3). These two factors should be further explored. Future research will further focus on a more qualitative approach and include interviews with selected first-year students. Interviews and focus groups with first-year students could explain the "why" of the decision-making in more detail to support the quantitative findings.

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Assessing The Maintenance Practices Of Operational Processes To Improve Performance at a South African Rail Organisation

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Keywords

Maintenance practices, machinery and equipment, operational processes, performance improvement.

Abstract

This paper reports on a study to assess the impact of maintenance practices to aid organisational performance at a sub-division of a rail organisation. Central to this effort was to identify factors affecting the effectiveness of machinery and equipment and the subsequent operational performance. The study pursued three objectives; to review current maintenance practices, to assess the impact of maintenance practices on the operational processes and to make recommendations to improve performance. The study utilised a quantitative research approach using a questionnaire. Stratified sampling was used with a sample of 94 employees. Descriptive, regression, and correlation analyses were conducted. The findings revealed a strong relationship between the variables that were measured. This paper succeeds in assessing the impact of maintenance practices in production processes towards achieving improved performance. The recommendations address the upskilling of employees and reducing operational costs to improve productivity. As further research, a qualitative study is envisaged.

1. Introduction

In today's world, an economy and its society depend more than ever before on an uninterrupted delivery of wealth and services provided by mechanical, electrical, and automated systems. Furthermore, the dependency on such systems is such that a large-scale failure in any single system could change the world as we know it, and with the increase of just-in-time systems, even small-scale failures sometimes have large scale consequences. Alsyouf, (2004) in Calais, Azevedo, De Matias and Da Silva Catalão, (2017) state that without proper maintenance of machinery and equipment, any plant could lose its competitiveness in today's volatile markets, which require low-cost and high-quality products with short lead times. Consequently, maintenance is important since it impacts on the availability, reliability, safety, life cycle cost and the quality of equipment, of an organisation, (Calais *et al.*, (2017). Maintenance is normally ignored where policies do not exist and result in machinery and equipment not performing to their maximum capacity. Aged and obsolete machinery and equipment are at times too expensive to refurbish due to improvements in manufacturing methods and the latest technological advancements.

Technological advancements by organisations have resulted in less robust and often more complex designs where modern technology replaces older designs making the older designs more expensive to produce or maintain (Tshabuse, 2015). The maintenance cost of aged machinery and equipment does not compare to purchasing modern machinery and equipment, and negatively affects the competitiveness of an organisation against their peers that utilise modern methods, (Tshabuse, 2015). However, the concern for organisations is the high failure rate of their machinery and equipment, which subsequently affects the competitiveness of an organisation. Calais *et al.*, (2017) states that the problem can be solved by re-designing and upgrading equipment, changing maintenance strategies, and introducing the latest technology advancements. Further to this, changing maintenance strategies can be considered most cost effective.

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Over the past decade, it was found that the railway industry in South Africa did not perform well in terms of production and profitability. Findings indicated a high failure rate of machinery and equipment due to poor maintenance practices. According to Patidar, Soni and Soni, (2017), maintenance functions have become challenging in the current competitive environment. As such, the adoption of suitable maintenance practices for machinery and equipment which are plant assets, is important. In the maintenance environment, there are four basic maintenance practices, which when followed properly, will ensure that the machinery and equipment will perform to maximum efficiency. These are: run to failure, preventive maintenance, predictive maintenance, and corrective maintenance Calais *et al.*, (2017).

This study was conducted at the engineering division of a South African rail organisation, termed Company A, which is responsible for manufacturing, upgrading, and maintenance of railway rolling stock. The rolling stock machinery and equipment refer to the locomotives and wagons. The organisation consists of maintenance depots across the country to ensure that machinery and equipment are maintained in close proximity to operations. Company A is largely responsible for manufacturing, refurbishing, and maintenance of rolling stock machinery and equipment of the Passenger Rail Agency of South Africa (PRASA), Botswana Railways, and other partner railway organisations in the Southern African region.

The essential contribution of this paper is to assess the maintenance practices at Company A, highlight tools, and acceptable methods used to analyse the impact of maintenance implementation in the production systems of the organisation towards achieving higher performance. As such, this paper will aid Company A to understand and improve its maintenance practices.

2. Problem Investigated

Company A is currently facing challenges of continuous failures of machinery and equipment that has led to poor operational performance of the business unit and the various organisations which it supports. As an example, Company A has regularly failed to honour its plant availability and reliability service-level agreements with its holding company, due to the high failure rate of machinery and equipment. This has negatively impacted, not only Company A, but the whole supply chain. The aim of the study was to review the maintenance practices at Company A and to assess the impact of maintenance practices on operational processes to aid organisational performance of Company A.

3. Research Objectives

The primary objective of this paper is to review the maintenance practices at Company A and to assess the impact of maintenance practice on operational processes to aid organisational performance.

4. Literature Review

The theoretical framework for this paper consists of an overview of maintenance practices and production and operations processes. It also contains a review of the measures for maintenance performance. The review concludes with a look at plant maintenance technology and trends.

4.1. Maintenance practices

The existence of poor maintenance practice is not a natural problem and certainly, it has been driven by several factors. The definition of maintenance practices (predictive, preventive, and corrective maintenance strategies) was reflected on and showed the importance of maintenance practices on the Company A. Davis (2021) states that there is currently no single all-time best maintenance program. As every industry is different, and each facility faces its own challenges.

In the standard EN 13306: 2001 terminology, maintenance is defined as the combination of all technical, administrative, and managerial actions during the life cycle of an item intended to retain it in, or restore it to, a state in which it can perform the required function, (Ingwald, 2014). The maintenance function serves as a crucial part in any machinery and equipment's life cycle and supports the business objectives of the organisation, (Ingwald, 2014). It follows therefore that

management in the maintenance environment need to understand the importance which maintenance practices play to improve organisational performance.

The neglect of maintenance has an impact and speedily increases the deterioration of equipment components and leads to machinery and equipment failure, (Yinghua, Sylvester, Osei-Assibey Bonsu & Minkah, 2018). Also, there is a need to ensure that the maintenance personnel understand that they are part of the organisational strategies, and that their understanding and best maintenance practices will ensure an improvement in performance, (Yinghua *et al.*, 2018). When considering the financial impact of maintenance, both direct costs (labour, material, spares, tools, information, and contractors) and indirect costs (lost revenue due to downtime, lost reputation, customer compensation, and penalties) should be included, (Mungani & Visser, 2013).

However, maintenance is classified into two major areas, namely: preventive maintenance and corrective maintenance, Enofe & Aimienrovbiye, (2010). Preventive maintenance includes all the planned actions, which include periodic inspection and condition monitoring. Corrective maintenance includes all the unplanned maintenance actions to restore failures. Figure 1 depicts the classification of maintenance practices used in the equipment and machinery environment. It should be noted that Company A uses these maintenance practices to ensure that machinery and equipment are maintained according to required international maintenance standards.

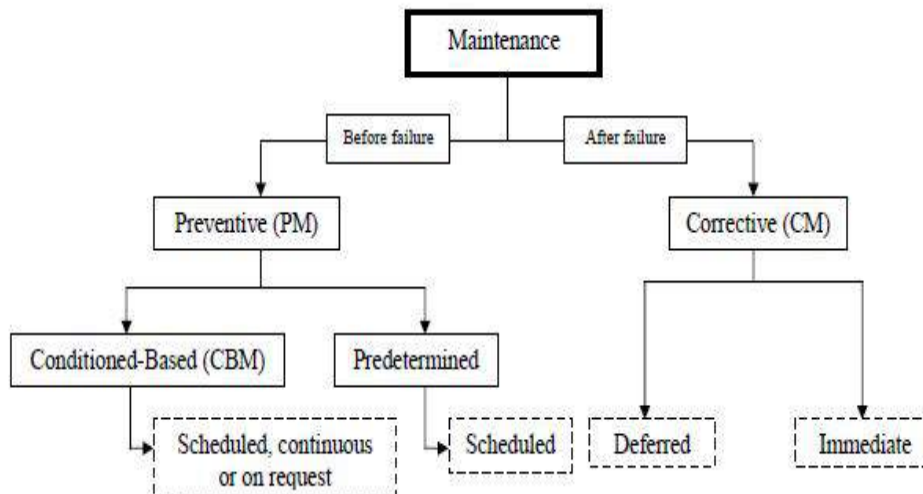


Figure 1: Classification of maintenance practice
Source: Enofe & Aimienrovbiye, (2010)

4.2. Production and operations processes

Previously, organisations were confronted with many changes at the level of concepts and management approaches, products, process technologies, customer expectations, and attitudes of suppliers, Calais *et al.*, (2017). Company A needs to regularly visit its production and operations processes and review their ways of work to keep up with the competitive environment. Linked to this is production planning and control which are activities of loading, scheduling, sequencing, monitoring, and controlling the use of resources and materials during production (Oluyisola, Bhalla, Sgarbossa & Strandhagen, 2022). To ensure that Company A has a competitive advantage over the environment, the following factors will be discussed: the definition of operational processes, the impact of maintenance on production, the impact of maintenance on quality, and the impact of maintenance on profitability.

4.2.1. The impact of maintenance on productivity

Mohanty, Rath, and Jena (2022) state in their study that maintenance is not an extra cost for an organisations but a rather way to increase productivity. Maintenance productivity is the backbone of the supply chain and the rule of the economics of production activity. Alsyouf, (2004) defines profitability as the product of production and price recovery. However, maintenance can be an

organisational purpose that functions in accordance with production. Well-maintained machinery and equipment can be reliable and have a positive impact on the productivity of Company A. When busy repeating the production makes products, most researchers state that maintenance produces the capacity for production, (Mushavhanamadi & Selowa, 2018). In this way, it can be concluded that maintenance affects production by increasing the capacity of production and at the same time also controlling the quality of the output and quality.

4.2.2. The impact of maintenance on quality and profitability

In most organisations, maintenance is not considered in the context of quality, (Tshabuse, 2015). Company A considers quality as the main edge for competitiveness and long-term profitability in a modern-day global economy. Profitability and the survival of the organisation might not be maintained without sustaining the quality of the product, (Mushavhanamadi & Selowa, 2018). Poorly maintained machinery and equipment reduce the quality of products or services which the organisation must produce. Choi, Lee and Olson (2015) determined that in the long term a focus on service quality may help increase customer satisfaction, thus improving service productivity and overall organisational performance.

Profitability is the result of price recovery and productivity. Recently, more emphasis has been placed on maintenance as a profit-generating function. Poorly managed maintenance practices drive maintenance costs higher and have a serious impact on the profitability of an organisation. Maintenance improvement in general aims at reducing the cost of operations and improving product quality, thus, the cost-effectiveness of each improvement may well be scrutinised through evaluating the relevant cost constraints before and after improvements, (Enofe & Aimienrovbiye, 2010). If Company A management can ensure the proper implementation and management of maintenance principles, the organisation will reach its production goals and the subsequent improved organisational performance. Figure 2 depicts the relationship between maintenance goals, production goals, and the objectives of the Company A.

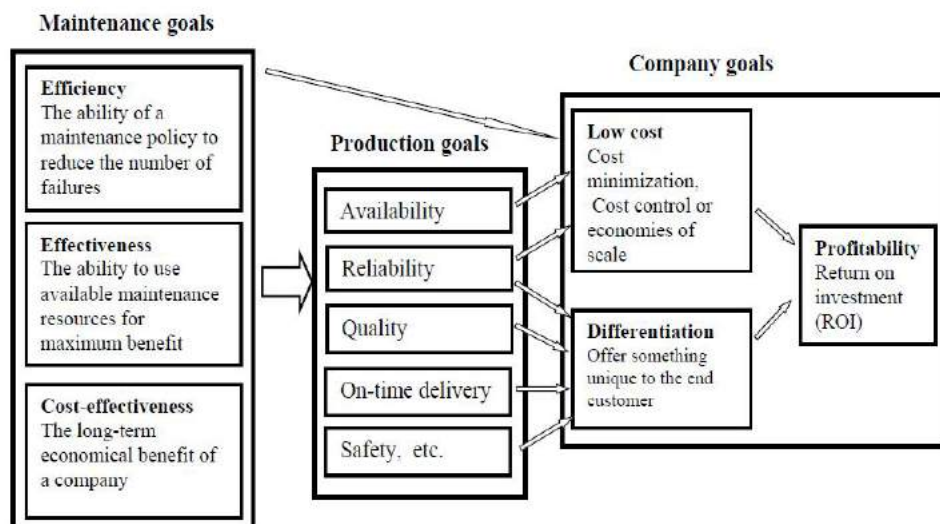


Figure 2: Connection between maintenance and profitability

4.3. Measures for maintenance performance

Maintenance performance measurement is defined as the multidisciplinary process of measuring and justifying the value created by maintenance investment and taking care of the organisation's stakeholders' requirements viewed strategically from the overall organisational perspective, (Kumar, Parida & Duffuaa, 2013). All activities in an organisation should be conducted to fulfil the organisation's overall strategic objectives, including maintenance activities, (Ingwald, 2014). Consequently, maintenance performance measuring is an essential part of the maintenance management information system. There are many models, techniques, systems, and approaches available to facilitate and support maintenance management of activities, resources, and decisions. For

the purposes of this study, the main emphasis will be on reliability-centered management, total quality management, total production management, and computerised maintenance management system.

4.4. Plant maintenance technology and trends

Zheng, Ardolino, Bacchetti and Perona (2021) state that the demand for faster delivery times, more efficient and automated processes, and higher quality products have driven organisations towards the fourth industrial revolution. Traditionally, maintenance is viewed as the necessary challenge that needs to be controlled and minimised to an affordable size. The rapid increase in technology over the past decades helped organisations to manage huge volumes of data which the organisations produce, (Fusko, Sulírová, & Rakyta, 2016). Zhou et al. (2021) states that the application of new technologies leads to improvements of intelligent manufacturing systems and this will change how work is done and managed.

4.4.1. Relevance of technology and trends in the maintenance organisation

Ghazali and Shamim (2015) state that technology may be summarised as the information, equipment, techniques, and processes necessary for an organisation to alter its inputs into outputs. With the ever-changing technological environment, there must be ways of collecting information and to improve the ways of working. According to Fusko *et al.*, (2016), the continuous change in technology, IT will contribute significantly especially the internet and its latest development, the Internet of Things (IoT). Although maintenance management can be highly technical in nature, maintenance teams are often the last in an organisation to get new IT systems.

Company A has been more focused on the bottom line and any breakage of the machinery and equipment risked the profitability of the organisations. Effective software and hardware system become critically important in predicting, forecasting, and enable the sharing of information and to mitigate any unforeseen circumstances that the organisation can face, Fusko et al., (2016). Technology and trends will benefit maintenance organisations with the traceability of events, cost-saving, product development, continuous improvement, and integrated business functions.

5. Research Methodology

5.1. The research design and instrument

The research design consisted of a quantitative approach which was used to gather data, which enabled the researcher to come to conclusions and to make recommendations regarding the impact of maintenance practices to aid organisational performance. The data collection technique consisted of a questionnaire survey.

The questionnaire was designed using Google Forms, a web-based survey administration software. The participants were contacted using the social media platforms of WhatsApp and Facebook messenger to participate in the research. The participants were given one week to complete the questionnaire on the link that was provided. The link allowed the participant to complete the questionnaire online and an option was provided to submit the questionnaire. The researcher received feedback immediately on the researcher's link once the participant had made the submission.

5.2. The population and sampling in the study

The population of the study reported in this paper was composed of selected employees (n = 2000) of the engineering department at Company A. The target population were employees who were responsible for maintaining machinery and equipment and practicing maintenance strategies.

Stratified sampling was utilised to select one hundred and fifty (150) participants. One hundred and three (103) respondents submitted their questionnaires online to the database, of which nine (9) were found to be incomplete submissions, realising a total of ninety-four (94) questionnaires. The response rate was 62.67% and found to be acceptable for the purposes of this study.

5.3. Data collection and analysis

Data was collected by means of a structured questionnaire administered via a web-based survey which was sent to the participants. The questionnaire was utilised to elicit responses as to the impact of maintenance practices to aid organisational performance. The questionnaire was pilot tested in the engineering division at Company A. Descriptive statistical analysis was used to identify and show patterns in the data. Descriptive analyses of all questions were performed to look at the distribution of the respondents. Regression analysis and the Pearson Correlation coefficient aided this study to determine/achieve the significant strength between the variables, maintenance practices, operational processes and organisational performance and the latest technology in Company A.

6. Results and Findings

6.1 Presentation of analysis and findings

The findings and results are aligned to the objectives and the three main constructs of this study.

Objective 1: To review the maintenance practices currently used at Company A:

Maintenance practices - The respondents were asked to indicate the maintenance practices which currently existed at Company A.

Table 1: Maintenance practices currently used at Company A

<i>Objective 1: Maintenance practices currently used at Company A</i>							
Question No.	Description	1 <i>Strongly disagree</i>	2 <i>Disagree</i>	3 <i>Undecided</i>	4 <i>Agree</i>	5 <i>Strongly agree</i>	Mean score
1.	Review for accuracy and updates	7	22	7	45	13	3.37
2.	Cost of maintenance practices	3	19	15	44	13	3.52
3.	Plans to prevent breakdowns and failures	2	20	18	37	33	4.35
4.	Meeting production targets	2	20	18	37	16	3.38
Total:		14	81	58	163	75	3.63

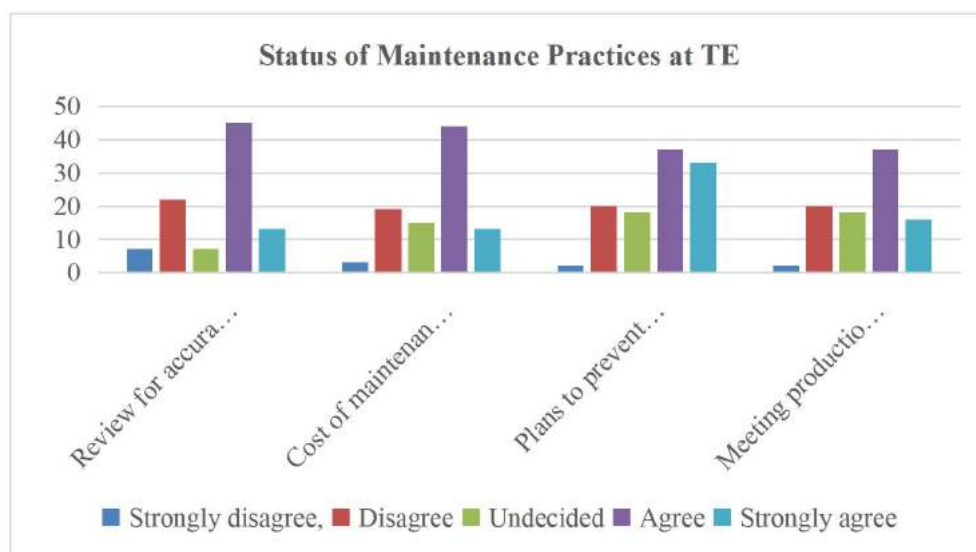


Figure 3: Status of maintenance practices

The information contained in Table 1 is based on the analysis of maintenance practices and how maintenance practices could improve performance. The average mean score of 3.63 was noted from

the analysis and indicated that there is an agreement that maintenance practices can improve performance. The respondents (61.70) agreed on the review for accuracy and updates with a mean score of 3.49, and maximising quality and profitability (60.64%), with a mean score of 3.52. The plans to prevent breakdowns and failures (74.46%), with a mean score of 4.35.

Objective 2: *To assess the impact of maintenance practices on the operational processes and the organisational performance at Company A.*

Production/operational processes - The respondents were asked to indicate the current production/operational processes used to achieve improved performance.

Table 2: Production/operational processes

Objective 2: Production/operational processes							
Question No.	Description	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree	Mean score
1.	Standard operational procedures	6	18	9	42	18	3.48
2.	Review and analysis of the production/operational processes.	8	13	19	40	12	3.71
3.	Incorporation of technology	3	8	10	36	37	4.02
Total:		17	39	38	118	67	3.74

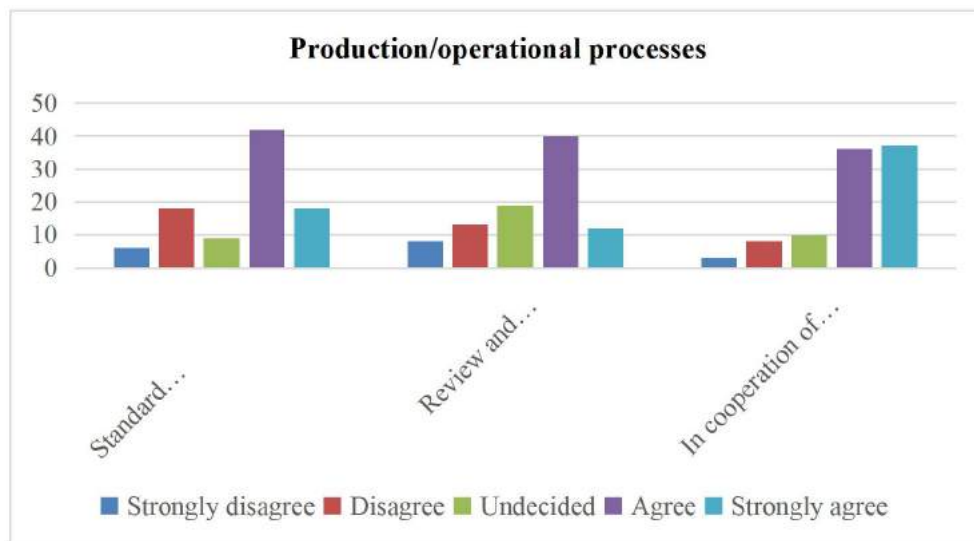


Figure 4: Production/operational processes

The results presented in Table 2 were based on the analysis of the importance of production/operational processes in Company A. The respondents showed the level of agreement with the questions asked, the average mean score of 3.74 was recorded from the analysis depicted on the table. The respondents (63.83%) agreed that the standard operational procedures are consistent in improving the productivity and with a mean score of 3.48, Review and analysis of the production/operational processes (55.32%), with a mean score of 3.71 and the incorporation of technology (77.66%) with a mean score of 4.02.

Measures for maintenance performance - The respondents were asked to indicate how the measures for maintenance performance could impact performance of Company A.

Table 3: Measures for maintenance performance

<i>Objective 2: Measures for maintenance performance</i>							
Question No.	Description	1 <i>Strongly disagree</i>	2 <i>Disagree</i>	3 <i>Undecided</i>	4 <i>Agree</i>	5 <i>Strongly agree</i>	Mean score
1.	Maintenance measures increase machinery and equipment performance	5	12	17	46	13	3.50
2.	Maintenance compliance	6	14	22	41	9	3.71
3.	The use of CMMS	10	10	15	43	16	3.48
4.	Effectiveness of maintenance measurements	5	11	6	47	25	3.81
Total		26	47	60	177	63	3.63

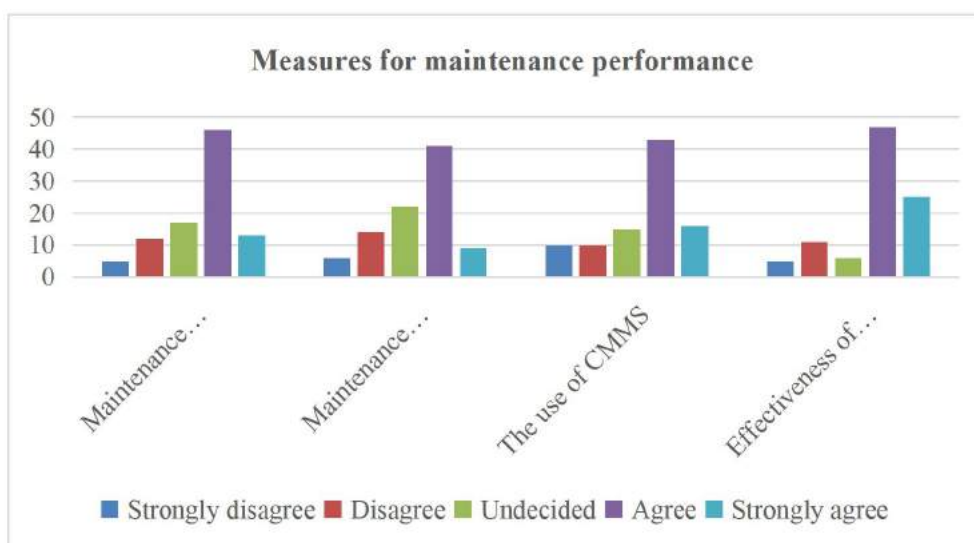


Figure 5: Measures for maintenance performance

Organisations must comply with international maintenance standards to ensure that products produced are of an acceptable standard. This objective aimed at determining how the measurement of maintenance performance can improve the performance of Company A. The respondents showed the level of agreement with the questions asked and the average mean score of 3.63 was recorded from the analysis.

The percentage of respondents which agreed were as follows: 62.76% agreed that maintenance measures increase machinery and equipment performance, 53.19% agreed to maintenance compliance, the use of CMMS, 59.57% and the effectiveness of maintenance measurements, 76.60%. The corresponding mean score analysed from the measures of maintenance is denoted as, 3.50, 3.71, 3.48 and 3.81 respectively.

Objective 3: *To make recommendations regarding the use of the latest technologies to improve organisational performance and effectiveness of machinery and equipment.*

Technology and trends - The respondents were asked to indicate how the use of technology and trends will assist in increasing the operational efficiency of Company A. Table 4 presents the statistical data analysis of the technology and trends that were used in the study to aid the maintenance in improving the performance.

Table 4: Technology and trends

<i>Objective 3: Technology and trends</i>							
Question No.	Description	1 <i>Strongly disagree</i>	2 <i>Disagree</i>	3 <i>Undecided</i>	4 <i>Agree</i>	5 <i>Strongly agree</i>	Mean score
1.	Monitoring maintenance cost and the life cycle	2	9	6	41	36	4.06
2.	Implementation of simulation	2	7	12	45	28	4.21
3.	Integration of functions	2	5	5	45	33	4.13
Total:		6	21	23	131	97	4.28

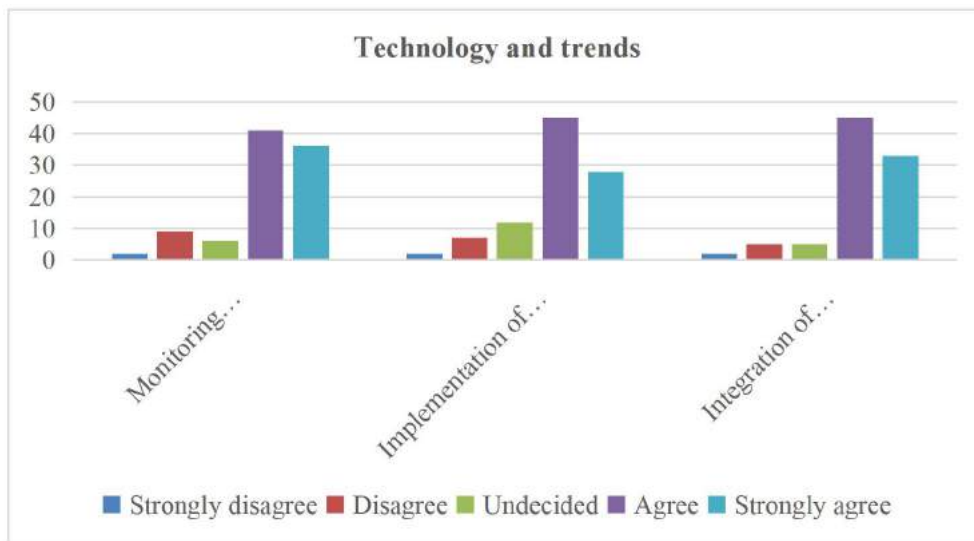


Figure 6: Technology and trends

Table 4 indicates that technology and trends are responsible for improving operational efficiencies. The respondents showed the level of agreement with the questions asked, and the average mean score of 4.28 was recorded from the analysis depicted on the table.

The respondents agree that technology and trends have a positive effect on improving the performance. The percentages of the following are monitoring maintenance cost and the life cycle (81.91%), implementation of simulation (55.32%) and the integration of functions (82.98%). The average mean score was 4.28. Further to the above statistical analysis and interpretation, regression and correlation analysis were also conducted as shown below:

6.2. Regression analysis

Regression analysis aided this study to determine the significant strengths between the variables, namely: maintenance practices, operational processes and organisational performance and the latest technology at Company A. The p-value is used to determine the significance of age that impact maintenance practices on the machinery and equipment. The variables are considered significant when $\alpha < 0.05$.

Table 5: Regression analysis

<i>Regression Statistics</i>						
Multiple R	0,188					
R Square	0,035					
Adjusted R Square	0,003					
Standard Error	0,488					
Observations	94					
ANOVA	df	SS	MS	F	Significance F	
Regression	3	0,78	0,26	1,10	0,3546	
Residual	90	21,43	0,24			
Total	93	22,21				
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	1,60	0,17	9,29	0,0000	1,25	1,94
Maintenance Practices Question 1.	-0,07	0,05	-1,46	0,1469	-0,16	0,02
Maintenance Practices Question 2.	0,03	0,05	0,57	0,5715	-0,07	0,13
Maintenance Practices Question 3.	-0,04	0,05	-0,96	0,3414	-0,14	0,05

Table 5 represents the regression analysis to determine if age influences understanding the impact of maintenance practices in the organisation. The hypothesis test is rejected, and because all the p-values that are greater than $\alpha=0.05$, there is no linear relationship between age and the maintenance practices. The results are interpreted by the regression equation $y = 1.60 - 0.07Q1 + 0.03Q2 - 0.04Q3$. It is evident that regardless of the age differences, employees must understand the impact which maintenance practices have on improving the performance of Company A.

6.3. Correlation analysis

Correlation in the broadest sense is a measure of an association between variables. In correlated data, the change in the magnitude of 1 variable is associated with a change in the magnitude of another variable, (Schober, Boer & Schwarte, 2018). They further state that most often, the term correlation is used in the context of a linear relationship between 2 continuous variables and expressed as Pearson product-moment correlation. The Pearson correlation coefficient is designed to range between -1 to +1. Pearson correlation was used in this study to determine the relationship between maintenance practices, operational processes and organisational performance and the latest technology within Company A.

Table 6: Correlation analysis

		Maintenance practices	Company A	Production/operational processes	Measures of maintenance performance	Technology and trends
Maintenance practices	Pearson correlation	1	.673 ^{**}	.571 ^{**}	.574 ^{**}	.587 ^{**}
	Sig.(2-tailed)		.000	.000	.000	.000
	N	94	94	94	94	94
Production/operational processes	Pearson correlation	.571 ^{**}	.764 ^{**}	1	.673 ^{**}	.657 ^{**}
	Sig.(2-tailed)	.000	.000		.000	.000
	N	94	94	94	94	94
Measures of maintenance performance	Pearson correlation	.574 ^{**}	.601 ^{**}	.673 ^{**}	1	.598 ^{**}
	Sig.(2-tailed)	.000	.000	.000		.000
	N	94	94	94	94	94
Technology and Trends	Pearson correlation	.587 ^{**}	.485 ^{**}	.657 ^{**}	.598 ^{**}	1
	Sig.(2-tailed)	.000	.000	.000	.000	
	N	94	94	94	94	94

Table 6 depicts the correlation analysis of the impact of maintenance practices on the production processes in Company A. The analysis indicates a positive correlation between the variables. Company A and Production processes shows a stronger positive correlation ($r > 0.7$, $p < 0.01$) while the other variable shown a medium positive correlation ($0.4 < r < 0.6$; $p < 0.01$).

Table 7: Correlation analysis

Correlations	Objective 1 (Maintenance Practices)	Objective 2 (Operational processes and organisational performance)	Objective 3 (Technologies and trends)
Objective 1: Maintenance practices	1		
Objective 2: Operational processes and organisational performance	0,64	1	
Objective 3: Technologies and trends	0,52	0,35	1

Table 7 depicts the correlation results, where the results show a level of correlation between the variables. There is a high level of correlation between objective 1 and objective 2 of 0.64, the maintenance practices are highly correlated with the operational process to improve the performance of Company A. The value obtained between objective 1 and objective 3 is 0.52. There is a positive correlation which means the introduction of technology in maintenance will improve the performance of the organisation. A weaker correlation of 0.35 was noticed on objective 2 and objective 3, the weak correlation is on the operation processes to improve performance and the introduction of technology to advance maintenance practices.

7. Limitations of the research

As with all research, this study was not without limitations, (Van der Merwe & Nienaber, 2015). The typical limitations of quantitative research apply. A limitation of this paper is that this study was

limited to the maintenance section of the organisation. The Covid-19 pandemic had a negative effect on the collection of data, since it was difficult to reach the participants. The researcher had to use WhatsApp and Facebook messenger as social media platforms to reach the participants. As further research, a similar study could be conducted using a qualitative research approach.

8. Managerial Implications

The outcomes from the objectives of the study will encourage Company A's management to facilitate the skilling of employees and the subsequent implementation of proper maintenance practices to achieve enhanced organisational performance and hence, to ensure that the organisation gains a competitive advantage. There is a need for management to intervene to ensure that regular maintenance is conducted to prevent failures and increase performance. The recommendations on maintenance practices, measures of maintenance performance, production/operational processes and technology and trends will benefit their management by upskilling workers, reducing operational cost, improved decision making and influence and the effectiveness of machinery and equipment. Management at Company A needs to revise its strategy regarding the use of the latest technological advancements towards performance improvement and reduction of operational costs.

9. Conclusion and recommendations

The conclusions of this study are based on the research findings in line with the objectives of the study. The following note-worthy conclusions were drawn from the findings:

Lack of resources and poor management skills led to poor performance at Company A. The literature review revealed that there is a need to conduct regular maintenance to prevent failures and increase performance. There was a high number of machinery and equipment failures and hence the study revealed that there was an urgent need to conduct regular maintenance. The purpose of regular maintenance is to ensure that all machinery and equipment required for production are operating efficiently. The organisation also had inadequate resources (finances, human resources, infrastructure, and tools). The statistical analysis concluded that 57.09% of respondents agreed that a lack of financial capacity, unskilled workers and poorly implemented production/operational processes affected the performance of Company A.

9.1 Research objective 1: To review the maintenance practices used at Company A.

Maintenance practices:

The research established that the maintenance practices are not properly followed by the workers and they do not understand the importance of performing certain maintenance procedures. This was shown to affect the effectiveness of the machinery and equipment and resulted in an increase in failure frequencies. This study showed the need to perform maintenance on machinery and equipment. The statistical analysis indicated that an average of 63.00 % of respondents agreed that it is important to conduct maintenance to improve the effectiveness of machinery and equipment.

It is recommended that Company A ensures that management and workers in operations are provided with the necessary training to ensure that set maintenance practices are followed.

9.2 Research objective 2: To assess the impact of maintenance practices on the operational processes and the organisational performance at Company A.

Production/operational processes:

The research established that a lack of production/operational processes affects the maintenance conducted on machinery and equipment. Maintenance organisations need to regularly visit their production and operational processes and review their processes to keep up with the competitive environment, (Calais *et al.*, 2017). The literature review revealed that there is a high number of machinery and equipment failures which led to poor performance of Company A. The poor performance was the result of improper production/operational processes and poor-quality work produced by employees. The statistical analysis showed that 65.60% of respondents agreed that to

improve the performance, production/operational processes and quality must be prioritised to improve the methods of conducting maintenance of machinery and equipment.

It is recommended that Company A provide training to quality assurers/controllers and engineering technicians to upskill them with the required maintenance knowledge to manage maintenance processes and to ensure that the maintenance team complies with set standards. This is critical as more than 50% of respondents mentioned the absence of proper production/operational processes.

9.3. Research objective 3: To make recommendations regarding the use of the latest technologies to improve the performance and effectiveness of machinery and equipment.

Technology and trends:

Failure to acquire the latest technologies negatively impact Company A on its operational/production processes. The study revealed that Company A has focused on generating revenue and neglected the importance of investment in technology in its production/operational processes. The statistical analysis revealed that 73.74% of respondents agreed that outdated technological systems impacted the monitoring of maintenance cost and the life cycle of machinery and equipment. Furthermore, the implementation of simulation and integration of operational functions could increase the performance of Company A.

It is recommended that Company A revise its strategy to prioritise technology implementation as it ensures improved performance and assists in reducing operational costs. Company A must acquire the latest technological systems that will enable optimum performance.

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A Role Identity Framework for Academic Staff in a VUCA World

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Keywords

Academic staff; Covid-19 pandemic, Fourth Industrial Revolution, Role identity; VUCA

Abstract

Private Higher Education (PHE) academics must adapt to an avalanche of change caused by VUCA. VUCA portrays an environment of volatility, uncertainty, complexity, and ambiguity. Academics face the complex problem of functioning at their best capacity, planning, and scheduling within an "unness"; an uncertain, unplanned, unpredictable, and unstable environment. Furthermore, it appears that private higher education institutions (PHEIs) in South Africa constantly strike a balance between the need to make a profit, their commitment to academic excellence, and the services they offer. As a result, academics' traditional roles could be threatened, jeopardising their basic existence and sense of scholarship. The main objective of this study was to develop a preliminary framework for academic role identity based on the literature already available in the modern workplace. From the first results, it is clear that external influences, including 4IR, the Covid-19 pandemic, political involvement, and corporate imperatives, could impact how academics define their roles. Due to a shortage of resources and a sharp increase in student enrolment, academics in their positions are heavily confined, which could lead to work overload. Negative effects for both employees and institutions could result from a lack of a sense of identity in one's academic function and a restrictive work environment. Recommendations are made for private higher education management.

1. Introduction

Recent economic, demographic, and political changes have thrown educational institutions into an ambiguous arena resembling a competitive marketplace (Gioia & Thomas, 2016). In such a dynamic environment, institutions must adapt to meet these new conditions – behaviour that is almost second nature in business but is still relatively unknown in academia. In institutions that have traditionally been content with slower, self-paced, incremental change, there is growing insistence that change occurs and that it occurs quickly. Coetzee et al. (2021) highlight disruptive factors facing South African education, such as the Fourth Industrial Revolution (4IR), Massive Online Open Courses (MOOCs), and the Covid-19 pandemic. These disruptive factors have consequences for academics' roles and work identities, which in turn leads to reduced service delivery and performance, burnout, and time constraints, to name a few.

As a result, substantive change necessitates rethinking one's current identity and image (Gioia & Thomas, 2016). Along with academic concerns, talent management (TM) has been a critical issue over the last two decades. It entails activities such as identifying talented employees, which is essential to the successful operation of organisations (Daruka & Pádár, 2019). According to Musakuro and de Klerk (2021), the most important role in the South African higher education sector is talent management, which includes attracting and retaining academic staff. These employees help ensure that the institution's vision and mission are realised. Furthermore, the role of academic staff is critical because they contribute to economic growth, poverty reduction, and the supply of scarce skills. Musakuro and de Klerk (2021:9) presented evidence on the talent development of academic staff, the

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lack of enough time for a proper induction process, and the lack of standardised processes and systems. As a result, it is proposed that academics undergo more induction processes in a VUCA world of education to adapt to an agile world of work.

Therefore, the increasing demand for quality higher education and the supply and retention of researchers and academics in the near future have become a growing concern globally, sparking a significant discussion among South African higher education institutions (Weaver & Osterman, 2017). Adding to the country's growing concern is the Covid-19 pandemic, and this novel Coronavirus SARS-CoV-2 has impacted every economic and social sector worldwide, including higher education in South Africa (Hedding et al., 2020). Furthermore, Kenny and Fluck (2021) have argued that higher education is a different sector now than it was a generation ago because there are more pressures and demands on the academic staff member who needs to deliver on several tasks. These tasks include research excellence and publishing, teaching quality, community engagement and generating funds for the institution.

Higher education in South Africa has 93 registered PHEIs and 26 public universities, according to the most recent register in August 2021. However, they have a limited capacity in terms of the number of students they can accept (Register of Private Higher Education Institutions, 2021). These tumultuous changes have a direct impact on the academic role of PHEIs. As a result, it is necessary to investigate how they have experienced the differences in recent years and how this has changed their academic role identity.

Martin et al. (2020:258) researched academic identity and concluded that academic identity constructs, deconstructs and reconstructs on an iterative process by means of interpreting and reinterpreting experiences, like, change, in a VUCA environment. This identity formation process necessitates academics to exert emotional and cognitive efforts to understand who they are and, finally, shaping and reshape self-hood in response to socio-environmental/VUCA change. Therefore, conducting this research on the changing role identities of academic staff is critical. "Recent PHEI research has revealed that challenges exist and are problematic in teaching and learning strategies, including subject-specific and pedagogical content knowledge." Furthermore, "PHEIs in South Africa appear to be constantly balancing the business imperative, the academic nature of their business, and the services they provide" (Nukunah et al., 2019).

The main objective of this conceptual paper is to preliminary explore the components of a role identity framework for academic staff in the VUCA world. Academics working in a VUCA world should act as leaders and experts in their respective fields, reacting quickly and confidently to unanticipated change. This research is motivated by the reality of a VUCA (volatility, uncertainty, complexity, and ambiguity) World of Work in education, in which the role of academic staff is constantly changing. Moreover, contemporary academics need to process more information than a couple of decades ago to stay competent and professional in their spheres. However, there is currently no role identity framework to help academics navigate the space. Typically, change that is expected in a stable environment is managed and planned and perceived as a challenge (Biron et al., 2020). It is then proposed that unanticipated volatile changes affect academic role identity and their formidable task of operating with optimal capacity (Bonds, 2020).

With little time to plan, organise, or reflect, the academic must deal with disruptors while completing the academic task (Billot, 2010:710). As a result, time constraints, a lack of a clear purpose, burnout, and reduced service delivery and performance occur. The academic role contributes to the mission of a higher education institution to be responsive to societal needs by doing what educational institutions are uniquely structured to do: generating knowledge and providing an educational experience that prepares students to meet societal needs (Sinclair & Webb, 2020:124). To cope with a new, ever-changing situation, the concept of VUCA drives the need for broader knowledge and application of new concepts, tools, and frameworks, which are lagging in the current changing work environment (Mack et al., 2016).

2. Literature review

The literature review will focus on previous similar studies and scholarly work conducted on the role identity of academic staff in a VUCA world. The literature review will start by identifying the existing gaps relating to the role identity of academics in a VUCA world. Thereafter the literature review will be presented according to the research paper's objectives; the concept of VUCA world will be defined, the transformation of the academic role, the main drivers for the changing academic role in a VUCA world, the academic perception of the new World of Work, enabling and constraining factors of academics to adapt to an agile work environment and the individual and institutional outcomes as a result of the changing role identity of the academic.

2.1 The current gap in the research literature

A great deal of research has been devoted to academics in South African public higher education institutions, covering a wide array of topics. Table 1 below indicates studies relating to the roles of academic staff in *public* universities, indicating the changing nature of academic work in the new World of Work and its effects on their identity. However, little research has been done in South Africa in the PHE context regarding the changing role identity of the academic.

Table 1: Research conducted in the South African context with academic staff

	Authors	Title of study	Description/Findings
1	Sabelis (2020)	The construction of a post-academic university: Opportunity or status quo? <i>Indicate to some extent the difference between public universities and PHEIs</i>	"Awareness and debates created about the present and future of HE".
2	Joubert, Town, Africa and Seymour, (2019)	A work systems view of unplanned business process change: The case of #Feesmustfall at a South African University <i>Research related to change within the university context, not PHEI</i>	"During unplanned business process change, change management, staff training, customisable technology and strategic fluidity, and focus were found to be important. Unplanned business process changes result in all elements of the work systems and its environment changing, even resulting in changed products and customer behaviour".
3	Du Plessis, (2020)	Model of coping with occupational stress of academics in a South African higher education institution <i>Research related to stress of academics but not in PHEI</i>	"HEI should implement interventions to mitigate occupational stressors, and academic staff should be encouraged to adopt adaptive coping strategies".
4	Lesenyeho, Barkhuizen and Schutte, (2018)	Exploring the causal relationship between the antecedents and consequences of talent management for early career academics in South African higher education institutions <i>Focus on the early career academic and TM, but</i>	"The results highlight the importance of management support in improving the effective application of talent management practices among early career academics. Higher education managers are encouraged to implement talent development opportunities and adequate compensation and recognition practices to retain early career academics".

		<i>not in PHEI context</i>	
5	Portnoi, (2015)	Pushing a stone up a hill: A case study of the working environment of South African academics <i>Transformation but not in PHEI</i>	"When combined with prior research, the findings suggest an imperative for South African higher education institutions to focus on improving the environment in which academic staff conduct their work, particularly given the post-apartheid impetus to transform institutions for both equity and global competition purposes".
6	Musakuro and De Klerk, (2021)	Academic talent: Perceived challenges to talent management in the South African Higher Education sector	"The study aimed to establish talent management challenges in one selected <i>public higher education institution in SA</i> (HEI) that offers contact tuition in the Western Cape. Several recommendations were made to solve the challenges of talent management".
7	Kruss, Haupt and Visser, (2016)	'Luring the academic soul': promoting academic engagement in <i>South African universities</i>	"The analysis sought to identify how disciplinary, institutional, and positional attributes are correlated with academic activities engaged and to find an understanding of the influences on academic propensity to engage in incentives and policies".
8	Roberts (2018)	Future and changing roles of staff in distance education: a study to identify training and professional development needs	"Adjacent factors should also be taken into account, these being participation in community engagement, and enabling organisational structure, change management, resilience and the effect of generational cohort differences for both staff and students".
9	Mmako and Schultz (2016)	An Employee Engagement Framework for Technical Vocational Education and Training Colleges in South Africa	"The South African Technical Vocational Education and Training (TVET) sector faces major challenges to produce, recruit and retain all categories of academic and teaching professionals".
10	Sadiq, Barnes, Price, Gumedze and Morrell, (2018)	Academic promotions at a South African university: questions of bias, politics, and transformation	"Although our findings provide some quantitative evidence of UCT's success at creating a fair system of academic advancement, broader demographic transformation remains a priority".
11	Vandeyar, (2010)	Shifting selves: Constructing and negotiating academic identities	"Provides a lens through which academics can be understood as shifting constructions of identity but allows them to rethink who they are and have become and what influence power relations have had in promoting or negating their sense of academic self".
12	Oliver, (2018)	Change agency and higher education in South Africa	"The focus is on the characteristics of a change agent, which could be an individual or a group. Seemingly, change will not be initiated in a 'top-down' approach; therefore, this article suggests a 'bottom-up' approach".

In comparison, research on the changing role of academics in private higher education institutions (PHEIs) has received relatively little attention. This study will attempt to fill this knowledge gap.

2.2 Defining the VUCA world

The workforce in the new World of Work faces challenges that are riddled with contradictions. (Sankaran, 2014:6). This statement enhances the reality of VUCA change. Therefore, managerial decision-making often calls the very foundations of value systems into question, and value systems relate to the identity of the academic. Currently, decision-making requires the courage to face the consequences and the willingness to make mistakes, due to the uncertainty and volatility of the workplace environment. Academics face challenges such as outdated information, slower response rates, and a tendency to avoid risks. Because of the uncertainty in the environment, the workforce tends to obtain incomplete information, which could lead to a relapse into old ways of working. This should be avoided for academic staff members, as this is where the development of a role identity framework will add value (Mack et al., 2016; Waller et al., 2019).

Sinha and Sinha (2020:17-19) explain the elements of VUCA and risks that could be associated with them, as follows:

Table 2: Risks due to VUCA from higher education institution perspective

VUCA element	Description	Example	Risks
Volatility	Rapid and unexpected change and there is a struggle to comprehend the duration and to keep up with the frequency of change	New learning platform – Blended learning Writing online exams – integrity of learning Dependency on technology	<ul style="list-style-type: none"> • Outdated information and technology • Lack of timeous knowledge • Risk-aversion
Uncertainty	Not knowing the future and what it holds. It can cause anxiety. It involves unexpected interactions	Pending launch of sit-down exams or online exams or incorporating both at the same time	<ul style="list-style-type: none"> • Incomplete information • Resort to what worked in the past
Complexity	"Too many moving and connected parts with unclear causes, effects and interactions with an overwhelming amount of information"	Complexity of academic and administrative tasks. Regulatory environments, changing policy and the diverse needs of the student cohort. New World of Work	<ul style="list-style-type: none"> • Analysis Paralysis • Resort to short-term fixes and quick wins
Ambiguity	Multiple perspectives and viewpoints can cause confusion. Inability to correctly interpret or predict events and situations. Unknowns	Immature or emerging decision-making, new processes outside of your core competencies	<ul style="list-style-type: none"> • Failure to understand the significance of events • Taking inappropriate action • Misinterpretation

Source: (Sinha & Sinha, 2020)

Winkler-Titus and Crafford (2020) define six key steps to follow whenever a work process changes for effective reform. First, the type of change should be defined and aligned with business goals. This

could cause conflict when time is limited, and the change is poorly defined and forced in a standardised manner upon all stakeholders. The next step is to determine the impacts of the change and those affected, but in a VUCA environment, that is sometimes very uncertain. Step three should be developing a communication strategy that should involve the participation of all stakeholders on a platform where communication is disseminated so that all staff are kept informed. The next step is to provide effective training, but staff could experience time pressures that do not allow them to obtain the training. That, however, could relate to the ambiguity within the VUCA world of change, where ambiguity can be viewed as something open to more than one interpretation of how academics interpret unexpected and swift change and how they cope in such an environment. The last two steps relate to the availability of a support structure and that the process should be managed throughout.

2.3 The academic role transformation as a result of the VUCA world

Higher education research in the Covid-19 era has repeatedly demonstrated that the only constant is change, and institutions must endure and respond effectively to the VUCA world. As a result, the focus of this study will be on PHEIs in South Africa. Although many scholars have considered these changes and their impact on institutional outcomes, it is important to consider academic staff members within the institution and how rapidly changing external and internal competitive conditions affect them (Mousa & Ayoubi, 2019). Academic staff members' work processes are shaped by strategy and practices and by disruptive, forced changes related to VUCA, such as the Covid-19 pandemic. The academic role evolves as a result of its rapid adaptation to such changes, such as travel bans, large-scale workforce restructuring and layoffs, the overall shift to a work-from-home mode of operation, and innovative behaviours implemented by academics (Biron et al., 2020). Furthermore, this research on the changing role identities of academic staff is critical. According to Sinha and Sinha (2020:20), to survive and thrive in the academic role in this era of chaos and complexity, academics, as educational leaders, must commit to a 'tolerance' for chaos while also constantly adapting themselves, which is becoming increasingly inevitable in the work ethos of the World of Work.

According to Tiwari (2017), teaching has been a profession in society since the beginning of time. However, the roles of educators have changed dramatically as the times have changed. Teachers' roles and responsibilities include delivering quality lectures and imparting the best skills to students, and sustaining a job characterised by demands, role ambiguity, and a plethora of administrative obligations. Skea (2021) has sought to bring together the academic roles of teacher and researcher in the neoliberal university. She labelled this complex identity as *Homo Economicus* and tried to reclaim 'the academic' as *Homo Academicus*, building this possibility on the grounds of collegiality and productivity versus performing. The virtue of practicing mindful academic work is evident in the role of the academic. This is in line with the aim of this study to re-establish the role of academic identity amid global and institutional volatile changes and how academics on different career levels handle unplanned and continuous changes.

2.4 The changes in the tasks of the academic

Waller et al. (2019) demonstrated that globalisation, legislation, the use of modern technologies, policy, and curriculum changes, and the 'new normal' World of Work all pose challenges to higher education in the twenty-first century. In addition, the considerable increases in the rate of change in the VUCA world place new demands on people, processes, technologies, structures, and systems. In a recent study, Kenny and Fluck (2021) acknowledged global changes in higher education such as massification, under-resourcing, competition, institutions that operate like commercial businesses, Covid-19, and 4IR.

Roberts (2018:38) suggests in her study that academics teaching online, and distance have to be knowledge experts, effective listeners and communicators, coaches, facilitators, mentors, problem solvers, designers, supporters, and resource coordinators. Cornelius and Higginson (in Roberts, 2018) identified 11 clearly defined roles for academics: technologist, manager, co-learner, designer, knowledge expert, researcher, facilitator, assessor, adviser-counsellor, e-tutor, and mentor.

Previous studies have focused primarily on the institution and the changes that it has had to endure. However, the focus of this study will be on the academic members of staff who are part of the institution and how they experience and cope in the VUCA world of PHE (Sinha & Sinha, 2020).

2.5 Main drivers for changing academic roles in the VUCA world

Global change, institutional change, and changes to the already complex academic task are the primary drivers of evolving academic roles. According to Kruss et al. (2016), there is widespread global pressure on universities and academics to become more responsive and accountable to multiple demands in their local, national, and global contexts (2016). This implies that the institution and academics must respond to and adapt to the change. Where legislation and policy must be reinterpreted, an institution should interpret it under the needs and requirements of their community. Every stakeholder must be involved.

As a result, this study will look at how academics in PHEI respond to new added tasks and trajectories related to entrepreneurial aspects, where academics must respond to industry links and innovation and should be preparing for a changing, dynamic future with local and global competition. Consequently, economic considerations related to international competitiveness have become a significant driving force behind higher education internationalisation." (Flecknoe et al., 2017).

2.5.1 The complexity of the academic tasks

Academics find their identity challenged by the multiple roles they must fulfil in their execution of the academic task. These academic tasks relate to the interaction and action between processes, science and relationships and planning in the academic context. Barnard (2019) refers to academic tasks as teaching, research, leadership, knowledge exchange through academic citizenship, and community engagement. Academic identity can become contradictory where research on the one hand and teaching on the other form part of the academic role; tensions grow when the academic favours the one or the other. Kruss et al. (2016) restate the academic's primary responsibilities, referring to the threefold mission of teaching, research, and service or community engagement. Their focus is on community engagement activities, describing the academics who participate, their main academic influences, and what they do in this context. They conclude that when academics become involved and engaged in the community, institutional and disciplinary factors intersect in complex ways, related to the multiple roles that academics are expected to play.

Global higher education leaders must manage enormous complexity, mainly when dealing with disruption and innovation, as seen through the lens of complexity (Lemoine, Garretson & Richardson, 2018). Furthermore, specific dimensions contribute to the complexity of the academic role in higher education; the structure remains rigid and less autonomous, bound by institutional policies, procedures, and legislation. Second, institutions are becoming increasingly complex, less agile, adaptable, and increasingly reliant on technology. Third, the ever-increasing speed of change necessitates more adaptable, adaptive, and agile higher education institutions to compete globally.

Since the beginning of the twenty-first century, there has been a worldwide decrease in government funding for higher education across various Western societies. In many of these countries, universities' increased reliance on competitive research grants has resulted in a bias toward recruiting academics based on their research reputation, potentially at the expense of teaching quality (Flecknoe et al., 2017). Higher education is a complex system, and the tasks performed by academic staff at an HEI are complicated. Complexity can be viewed as a theory of change and adaptation that details how change occurs in systems and the principles and role identities needed by academic staff to flourish in turbulent environments (Siemens et al., 2018 & Barnes et al., 2021).

2.5.2 4IR and the academic role

The Fourth Industrial Revolution (4IR) or Digital Revolution is entrenched in the integration of networked technologies to facilitate automation. It is directly related to the onset of artificial intelligence (AI) and the pervasive use of the Internet in most people's everyday lives. The application of automation is also found in education. A variety of technologies fuel the 4IR concept,

as expounded by Mhlanga and Moloji (2020): " Artificial intelligence and robotics, ubiquitous linked sensors, virtual and augmented reality, additive manufacturing, blockchain and distributed ledger technology, advanced materials and nanomaterials, energy capture, storage, and transmission, and new computing technologies, biotechnologies, geoengineering technologies, neurotechnology, and space technologies are among these technologies" (Mhlanga & Moloji, 2020).

Before the advent of Covid-19, the World of Work was already changing, and the workforce strove to create resilient tools that assisted with coping with change and contributed to a certain measure to predict future change. Examples of innovations that cause change are how 4IR changes the work-related demands, the new young workforce entering the market, the older workforce with all their accumulated knowledge and experience that exit the workforce, and then, of course, the boomers that are still climbing the corporate ladder and the globalisation of the workplace and enterprises. Then the pandemic hits the World of Work in change (Veldsman & Veldsman, 2020).

From an education perspective on 4IR and how academics are affected, educational institutions have contributed greatly to reshaping future technologies by being the test laboratories for innovation. Therefore, special attention is placed on going beyond the traditional teaching approach and employing trending technologies to prepare students with the right knowledge and skill sets. Therefore, it is imperative to consider how educational institutions will be restructured by the 4IR (Yusuf et al., 2020).

2.5.3 New World of Work

Increasingly, organisations must be more flexible and innovative in responding to unexpected changes that affect staff members. The Covid-19 pandemic is an unexpected event that forced a massive transition to remote work changes in the industry's landscape. These changes significantly alter learning and development (Biron et al., 2021). This influenced the academic role, and the Covid-19 pandemic had both short- and long-term effects that educational institutions will feel and recognise for a long time. For example, academic staff had to upload and deliver study material online during the lockdown period. However, academic staff have had little, if any, experience or training in the pedagogy or delivery of online learning. As a result, academics with teaching responsibilities will have had to quickly upskill and become acquainted with online learning platforms and all they entail, including increased administration. (Hedding et al., 2020).

Evidence indicates that this is a global phenomenon, with academics worldwide reporting increasing pressure to perform, high levels of workplace stress amid unexpected changes to their work processes and procedures and loss of power and academic identity within their institutions (Kenny & Fluck, 2017). Therefore, it is necessary to consider the workload allocation models used in many studies as measures to mitigate the complexity and the overload of academic tasks that have always existed in some form in educational institutions. However, they were largely collaborative or designed to allocate teaching loads in the past. Additionally, they were often based on allocating teaching responsibilities for units or student load instead of the actual time involved in these tasks (Kenny, 2017). However, recent trends in academic performance management in universities specify performance outcomes to be achieved in teaching, research, and service. It requires academic work to be considered more holistically by including all aspects of the work (Kenny, 2016).

Hedding et al. (2020) further implied a different point of view, namely that the shift to online teaching forces academics to seriously question and re-evaluate their curricula. Because traditional assessment techniques are no longer viable, it encourages a shift from rote learning toward problem-solving, critical thinking, and applied understanding through a holistic and integrated approach. However, the forced change again causes more time pressures for the academic to implement this change effectively.

2.5.4 Institutional change (Internal)

Change affects private, and public education institutions in the same way, and poor change leadership in either sector may impact staff. There are, however, some significant differences. Publicly funded universities, for example, may follow a different logic than for-profit corporations (PHEIs).

Furthermore, while administrative offices are in charge of managing change, academic staff actively participate in these processes as well. Higher education institutions frequently hire consultants and coaches to assist with the transition (Vlachopoulos, 2021).

Academics at various career levels perform the same tasks but follow different processes, resulting in non-standardised outcomes. However, we can gain relevant knowledge by investigating the various approaches of academics at various career levels to academic tasks in a VUCA environment. All academics are involved in the same tasks, which include research and scholarship, teaching and learning, community engagement, and fundraising efforts. These tasks would benefit academics if they were prioritised. They must determine which tasks should be prioritised. It will imply that academics at various career levels will have different priorities and outcomes (Nkomo & Marnewick, 2021).

When academics have to deal with unplanned process changes, they will adopt specific roles to implement the change efficiently, but academics will perform these roles differently, depending on their career level. Such changes could lead to changing the role identity of the academic (Kruss et al., 2016). The focus in 21st-century society is knowledge-based, meaning that higher education institutions will need to show their ability to operate in a complex system by exhibiting adaptability and agility to complexity (Lemoine et al., 2019).

2.6 Transforming academic role identities in the new World of Work

Multiple imperatives that transformative change has already presented for the future of work were already part of the changing role of the academic before the outbreak of Covid and have had consequences on how the policy has been interpreted and perceived (Annala et al., 2020). While academics are expected to balance these different roles, they also have to deal with various disruptive factors forced by volatile changes in different environments, including higher education. These disruptive factors include the impact of Covid-19 that necessitated different teaching and assessment methods, developments in the Fourth Industrial Revolution (4IR), additional demands for student support transformation and decolonisation of curricula (Waller et al., 2019).

2.6.1 Academic identity

Identity usually relates to the characteristics determining who or what a person is; or a group forms part of one's identity or character, ethnically, culturally, or nationally, and this character, role or appearance can be affected by someone or something (Jooste & Frantz, 2017). The academic profession constitutes a *productive workforce* within educational institutions. Academics are highly respected because they form the '*key profession*' among the disciplines; they are a highly select group of specialists and have succeeded in most countries over long periods of history in claiming that academic freedom and the governance of their institutions as a republic of scholars were both necessary to ensure the highest quality and significance of higher education (Billot, 2010).

To better understand the transformation of the academic role, Martin et al. (2020) examined the academic identity in the context of changes in UK higher education. The results showed ambiguities and uncertainties embedded in support of academic identity, with stress caused by managerial approaches and difficulties in maintaining the identity of a 'proper' academic with implications for management, reiterating that the academic identity is affected by rapid changes and suggesting that academic identity is fluid rather than fixed.

Van Winkel et al. (2018) revealed six identities related to identity, role-making, and research-active academics. These are the Continuous Learner, Disciplinary Expert, Skilled Researcher, Evidence-based teacher, Guardian of the research work process, and Liaison Officer. It should be noted that different identities relate better to different tasks. Further challenges academic staff could experience in a VUCA environment related to their identity are the absence of cultural and technical dimensions like adaptability, consistency, and knowledge sharing, which may present hurdles to the academic staff member (Ilieva & Vitanova, 2019).

Research has shown that different identities of academics approach academic tasks differently. For example, an academic with an agency-based identity may be suitable for determining the performance of an institution, while an identity with a stewardship-based approach is appropriate for determining the research performance of individual academics. "To encourage research productivity performance by individual academics, the process must be re-designed to suit the nature of academic work: it must recognise the intrinsic motivational aspects of the work and the wide range of demands on academic time" (Kenny & Fluck, 2018).

2.6.2 New purpose

Geertsema and Van Der Rijst (2021) agree that the academic experience challenges and affordances of transition during change. However, their study is oriented specifically to the experience of moving from expertise in a particular discipline to becoming 'interdisciplinary educators'. However, this is also in line with the new role that academics should adapt to include the world integrating learning into the curricula. Their study also focused on the personal development that is needed. Academics are transitioning to a new, unfamiliar role and experience 'adrift and undisciplined' feelings.

Furthermore, Maroun and El Hage (2020) argue that educational institutions need to transition from the common 'traditional' settings towards an education that contributes to sustainable social change by preparing students to be change agents who care for others and the wellbeing of society. They also identified five drivers for change, of which empathy and reflexivity were not previously listed as a driver of change in change management, along with communication, participation and sharing. It is important to note that change is a complicated process in a stable environment and, therefore, even more complex when unexpected or unpredicted.

2.6.3 New entrepreneurial task (generation of funds)

Funds are no longer received from the state, and the academic needs to fulfil the role of an entrepreneur and generate funds for the institution and department of a specialised field; this begs the question of what skills the academic should obtain or show to be successful in this role. Much has been written in the wake of universities changing from knowledge institutes to education-producing entities. Furthermore, Sabelis (2020) claims that the belief is that all organisations and institutions ultimately could thrive on market-economy principles. However, the consecutive privatisation of industries, including education, has unintended effects. Academics as higher education leaders are experts in various disciplines with different levels of educational experience. Although they may have succeeded in research, innovation, teaching, or knowledge transfer, a comprehensive and unified approach to facing the VUCA world is not yet evident (Vlachopoulos, 2021).

2.6.4 Priority of academic tasks for different academic career levels

Herein lies the great paradox of academia that all academics must confront, especially early in their career: promotion and progression largely depend on one's research activity. This leads to whether the same workload should be allocated for different academic career levels and how this allocation is measured and implemented (Papadopoulos, 2017). Models regulating academic workload quantify various dimensions of academic labour and allocate nominal amounts of time for each included activity. Most models start from a statement of annual hours ranging from 1595 hours to 1800 hours, then through a combination of metrics derived from other policies (e.g., acknowledgement of research output or maximum teaching contact hours) (Kenny & Fluck, 2017).

Early career academics experience more conflict between time to do research and being overloaded with teaching commitments. Additional to the time needed to do their research, and according to the Teaching Excellence Framework (TEF) in the UK, it is still difficult to make a case for promotion based on one's teaching abilities rather than research output (Skea, 2021). A study that stemmed from a lack of productivity in research from academic staff explored whether organisational factors such as technological progress, computer skills, research funding, and human resources were significant antecedents of academic staff research productivity. Research productivity of the academic staff requires attention and methods to address (Oonyu & Onen, 2020).

2.7 Constraining factors for academics to adapt to an agile work environment

2.7.1 Responses of academic staff to volatile change

Fisher's theory of change is about the model of personal change. The personal transition curve is an analysis of how individuals deal with change. It refers to individuals dealing with personal change and managers and organisations helping their staff manage change (Sankaran, 2014). The researcher wants to establish how academics effectively manage time and personal organisation in a VUCA world and how it affects their role identity. Staff at different academic career levels could experience this inversely, where more senior academic staff have more experience coping with the change and might have more experience in time management and planning strategies (Gioia & Thomas, 2016). Turbulent changes in PHEI in South Africa can account for the tension between the business focus of private providers and the requirement of meeting the conditions of the regulatory framework (Ellis & Steyn, 2014).

2.7.2 Lack of time and change management skills

Time management can be considered as the process of an individual effectively accomplishing tasks and goals, a process by which an individual obtains control over the timing and the context of what he does and what can be achieved with time (Sajeevanie, 2018). Given the increasing demands on academic time and the complications of creating and sustaining an equitable workload model.

Miller notes that "managers and individual academic staff should play an active role in managing workloads through advocacy for needed changes to institutional practice, programme delivery patterns, and reconsideration of activities that detract from the fundamental purposes of higher education" (Miller, 2019:636).

2.7.3 Linear/rigid work environment

This study anticipates identifying how academics manage new processes and adapt their working processes due to unpredictable changes. Hrabala et al. (2017) claim that process management is a management approach that views an organisation and its activities as a set of processes. Process management aims to identify and improve these processes to create the best possible quality and performance through a continuous design, evaluation, and improvement process. It could be argued that a type of improvement process can be established by investigating these work processes of academic staff as a response to a VUCA environment.

2.8 Enabling factors for academic staff in Private Higher Education

Pillay (2019) demonstrated the importance of professional staff development in academics, but where do they find time with their pressured time schedules and other changes they must deal with already? Pillay further writes that previously, the focus areas for academics were teaching and research, but community engagement was also added. So now, the question is: how do academics manage their time more stringently to accommodate community engagement work?

Training and academic development are viewed as enabling aspects for the academic to achieve agility in the work environment. In the eyes of academics, the credibility of time-based approaches rests on their ability to reflect the work done. This is associated with the degree of consultation in development, the level of transparency in their application and their capacity to cater for a wide range of disciplinary variations in academic roles (Kenny & Fluck, 2018). More enablers relate to reward and institutional grant income, but that is different for private and public institutions in South Africa; individual academics have little control over the outcome. Therefore, this study will explore instances where different academics identify and focus on different academic tasks (Sabelis, 2020). Roberts (2018) highlights the importance of capacity and continuous professional development processes necessary to train academic staff to prepare for these changing roles.

2.9 Outcomes of changing role identities

Including this as part of the study is needed to determine the outcomes, for example, whether academics are demoralised, stressed, or want to leave the profession due to a lack of a role identity framework.

Similarly, Tiwari (2017) made the following recommendations for the individual outcome of the academic role identity; academics should be given more freedom to explore innovative ideas, allow more time for academics to do quality research that can benefit the institution, and there should be an effective consultation process about workload.

Jooste and Frantz (2017) demonstrated five themes that emerged around academic leadership and self-traits: its development over time; that it can be earned through different means; that it is influenced through personal experience; the role of role models; and environmental encouragement, however, this is a challenge in the VUCA world. Therefore, academics will experience increased occupational stress unless strategies and mechanisms for dealing with the environmental demands of their profession are implemented. Higher education institutions that want to promote the health and wellbeing of academics must first understand the complexities of the coping process (Du Plessis, 2020). Jakovijevic (2018:127) claimed that contrary to extensive research and awareness about the role of innovation in education, insight is missing regarding an individual frame of innovation of how to empower an individual. Therefore, this study proposes that the information gathered from academics' responses in a VUCA world can add value to an innovative academic role identity framework.

2.9.1 Legitimacy as an academic

Figure 1 represents the work of scholars Martin et al. (2020) on the identity work of the academic. The figure demonstrates how the academic identity continuously evolves despite unsaid issues within recognised pressures.

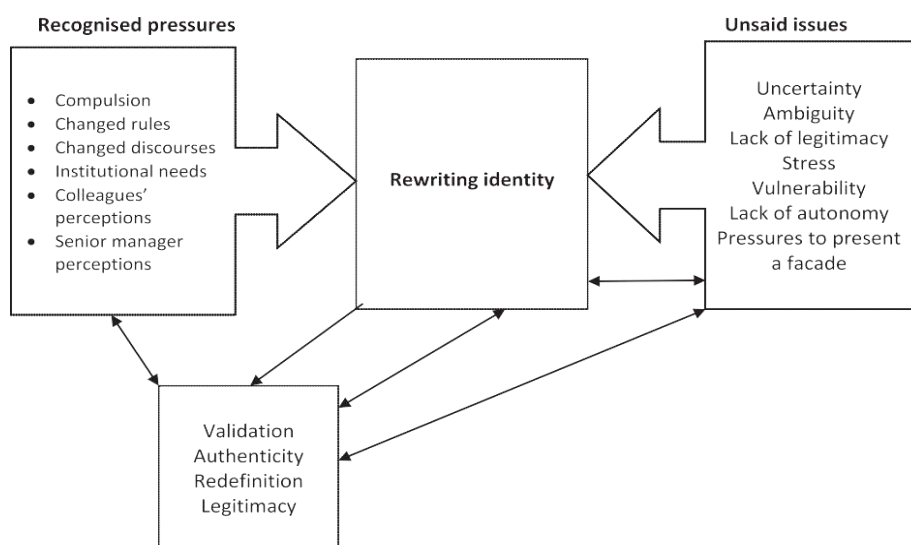


Figure 1: Identity work to achieve legitimacy as an academic (Martin et al., 2020:10)

2.9.2 Transformation

Organisational change or transformation, both in business and social contexts, is a difficult problem because of the complexity and diversity of the participating stakeholders (Sankaran, 2014). The explanation of metamorphosis is a classic example of transformation. "Transformation is profound, fundamental change, altering the very nature of something. Transformational change is both radical and sustainable. Something transformed can never go back to exactly what it was before" (Gass, 2014). Oliver (2018) suggested that educators become change agents in the learning environment and highlighted that higher education institutions require significant change, implying a paradigm shift in their educational process. However, because most educators in South Africa are not adequately equipped for this task or share the passion of being a change agent, higher education institutions should motivate and train educators to become part of the process of change agency. Oliver concluded that " the educator becomes a facilitator in the student's learning process and problem-solving environment, and to accomplish this, educators must become change agents who ground their actions

in sound moral decisions and embrace the tools that technology provides education. They must be self-directed, lifelong learners who initiate innovative and life-changing projects that bring positive change to South African communities".

2.9.3 Autonomy

The high differentials between individuals of status and autonomy have had a profound effect on the participation of academics and their sense of professional identity. The underlying structures and ideologies in communities of practice can work to the disadvantage of academics (Vandeyar, 2010). Further, Vandeyar (2010:918) distinguishes between tangible and intangible benefits of the academic position. The tangible benefits include 'wages, facilities, work rules, and fringe benefits,' The intangible benefits include 'personal and institutional reputation, autonomy, influence, and sense of belonging. It has been alleged that the academic world is generally reluctant to change, especially when it comes to an external influence on individual autonomy, but this depends on the characteristics of the academic and governing bodies (Barbato et al., 2019). They further assert that this reluctance and the limited ability to change result from the innovations, like new teaching methods or different focus on new student cohorts, require collaboration among professionals and the capacity to adapt teaching patterns to new operational modes.

3. Towards a preliminary conceptual framework, academic role identity

The framework is predicated on the idea that there are numerous internal and external contextual elements that have an impact on the academic function in the modern workplace. One example of an external element is 4IR, which introduces a variety of new online learning methods that academics must become used to. Additionally, the Covid-19 epidemic ushered in a new employment era marked by hybrid work arrangements combining office, online, and work-from-home activities. Covid-19 increased its usage of 4IR technologies to provide virtual classroom instruction. From a political standpoint, the continued massification of student enrolments puts a lot of strain on the infrastructure and resources already in place in the higher education community to accommodate students who are pursuing educational credentials but are sometimes not quite ready to start the journey. Academics are therefore burdened with a significant amount of labour, which has negative effects on their wellbeing. Last but not least, profit-driven competition is what drives the operation of private higher education institutions.

The internal change factors are largely determined by the enabling (i.e., institutional support, training, and development) and constraining factors (i.e., lack of time, rigid work environment). All of these adjustments aid in the development of new academic identities and a variety of positions, including Liaison Officer, Skilled Researcher, Evidence-Based Teacher, and Continuous Learner (see Van Winkel et al., 2018.) Therefore, academics must reframe their mission and modify their priorities in a demanding work environment marked by rigid/linear work environments, a lack of time and change management skills, and inadequate coping mechanisms. The challenges can be overcome by creating a more compassionate and fulfilling workplace where academics feel like they belong and have a purpose. In order to reduce and eliminate hazards, academics can also be trained and proactive about preparing for extraordinary changes. These procedures can help academics maintain their status as legitimate scholars and stop plans for voluntary turnover.

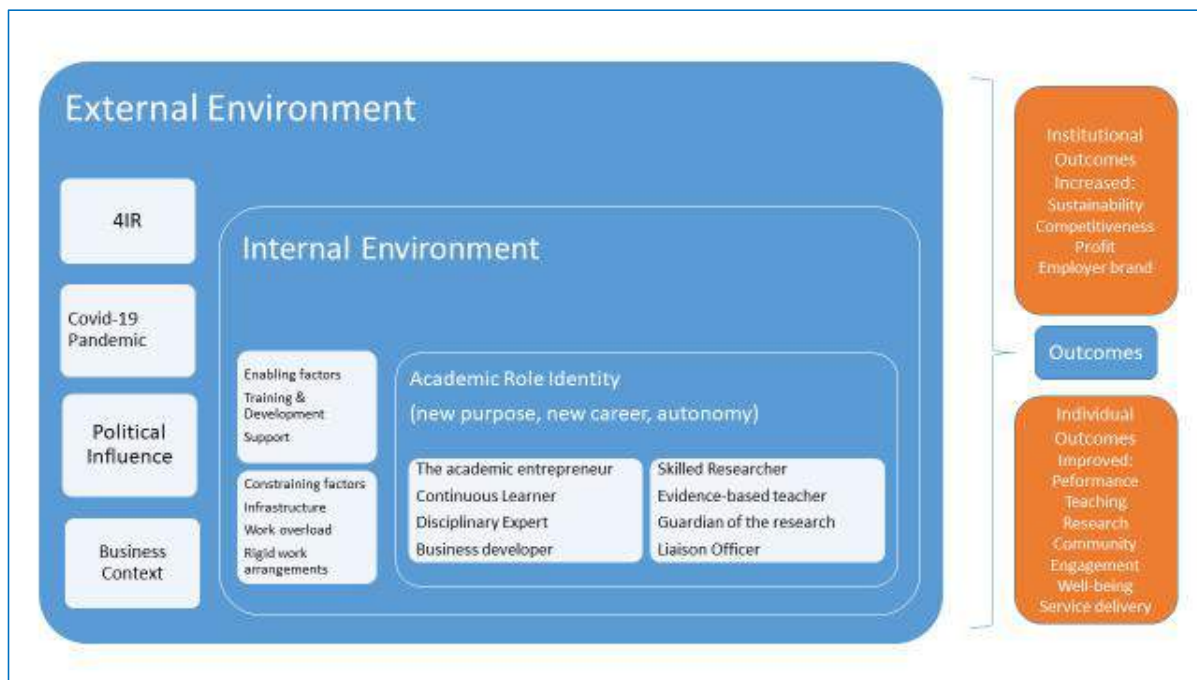


Figure 2: An academic role identity framework for the VUCA world (Authors' own)

4. Management implications

Higher educational management is functioning in a VUCA world where a great scarcity of academic staff prevails. As such, management should take cognisance of the external, internal, and personal factors impacting the higher educational work environment and redefine the academic role identity to ensure future-fit and workplace ready scholars that can make a contribution to the broader society. This requires an education intervention whereby HEI management on all levels (i.e., executive, middle and line level) be equipped with the leadership intelligence and practical acumen to navigate staff through times of unprecedented change and crises. No academic institution can survive without competent and key skills. Therefore, an investment into academic role identities and future-ready skills is imperative for sustainable and competitive higher education institutions.

5. Limitations and recommendations

This research involved a preliminary literature review aimed at detecting those elements that could contribute to the academic role identity in a VUCA and new World of Work. It is clear from the literature review that there are still some sizeable gaps in the definition of work identities in PHEIs. Due to this, the literature evaluation was restricted to those research studies that highlighted the problems and supportive factors faced by PHEIs as well as the elements influencing the role identities of academic staff. The research will next move into a qualitative phase where personnel from PHEIs will be interviewed in order to add empirically to what is already known about the role identities of academics in these schools.

6. Conclusions

This conceptual paper's main objective was to provide an overview of the various aspects that affect academic role identity in a higher education setting undergoing significant disruption. This study significantly advances our understanding of the elements that affect academic staff members' perceptions of their roles and the proactive steps that may be taken to prepare them for the workplace better. The introduction of new technologies, such as the rise of 5G, will continue to disrupt the workplace. In order to maximise the performance of skilled employees, HEI management must design meaningful workspaces in the middle of a chaotic world.

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Exploring the Adoption of Digital Banking by Informal Microenterprises In Johannesburg Townships

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Keywords

Small businesses; start-up lifecycle; entrepreneurship education; business training

Abstract

Background: Banks are changing the way they deliver their service to customers through digital channels. This presents challenges to the informal microenterprise owners who lack adequate education and income to explore these solutions easily.

Aim: The purpose of this research was to explore the factors that determine the adoption of digital banking by informal microenterprises in Gauteng, South Africa.

Setting: The research was carried out in the township communities of Alexandra, Soweto, Tembisa, and Vosloorus, in the Johannesburg area. Moreover, the study focused on informal microenterprise owners.

Methods: A qualitative approach consisting of eight semi-structured interviews were conducted amongst informal microenterprise owners. All respondents were based in townships situated in the Gauteng province.

Results: The findings suggest informal microenterprises within a township environment are plagued with many obstacles when it comes to financial inclusion in banking. Lower levels of education and income are contributing factors that hinder the adoption of digital banking by microenterprises in the informal sector.

Conclusion: Informal microenterprise owners do not maintain a positive attitude toward digital banking since financial exclusion is exasperated by digital banking alternatives. Lower-income levels and lower education levels contribute to the financial exclusion of informal microenterprises.

1. Introduction

1.1. Problem Statement

The informal sector is integral in addressing the socio-economic issues across the globe. Informal sector entrepreneurship activities contribute 10–20% of the GDP in developed economies and up to 60% in developing economies. In South Africa, the informal sector accounts for 15–17% of total employment and about 5.2% of the country's GDP (Musara & Nieuwenhuizen, 2020)

Urban townships in South Africa are dominated by informal microenterprises (Petersen & Charman, 2018). Microenterprises as defined by the Department of small business development are businesses that employ between 1-10 people and generate an annual turnover of up to R20 million, depending on the sector; these microenterprises are regarded as informal when the owners are not registered for

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income tax or value-added tax (Government Gazette, 2019). Township entrepreneurs have the tenacity to succeed and have the potential to further grow the South African economy (Mulligan, 2015). Yet, township economies are severely hindered, with poor infrastructures such as lack of internet connectivity, a lack of technical skills training, and higher education institutes (Mulligan, 2015). Microenterprises in the informal township economy exist under greater situations of economic and social stress (Petersen & Charman, 2018). In South Africa, the township economy services more than 50% of all South Africans who are generally black and economically disadvantaged (Petersen & Charman, 2018). Microenterprises in this setting have nonetheless emerged naturally and created many opportunities for the livelihoods of individuals thereby reducing poverty within the informal economy (Greenberg, 2015).

Ceyla et al. (2020)) provides a global perspective that access to affordable financial services is critical for poverty reduction and economic growth, emphasising that there is very little contact between the informal sector and formal financial institutions. More recently, financial institutions have started providing more financial services through a digital infrastructure which includes mobile phones, computers, or cards that are used over point-of-sale devices (OECD, 2020). South African banks have upgraded automated teller machines (ATM's) with multiple features, which include stamped statement dispensation, wider provision for cash deposits as well as many other self-service features. To reduce the risk of card skimming and secure ATM transactions, South African banks have implemented new technologies that include tap-and-PIN authentication in addition to biometric security (McKane, 2018).

Although considerable progress has been made in the digitisation of the banking sector, informal microenterprises remain a large part of the financially excluded and under-banked (Ceyla et al. 2020). While Van Hove and Dubus, (2019) found that the use of a mobile money transfer system, M-Pesa, in Kenya has had a positive impact on the informal microenterprises, Phillipus (2013) found that mobile money systems in the South African informal taxi sector were unsuccessful due to the preference of cash. In this era of digitisation, a challenge is presented for the informal sector in adapting to digital innovation in banking particularly since there is significantly low educational attainment amongst the poorer communities and individuals who are economically, socially, and technologically disadvantaged have a reduced chance of access to digital technology (Mohalajeng & Kroon, 2016). This financial exclusion of informal microenterprises is further exasperated as financial institutions see no substantial returns when transacting with the informal sector. What's more, South Africa was under a national lock-down due to the global COVID-19 pandemic. Elderly banking customers and those with comorbidities had to remain extra vigilant against contracting the disease. As a result, these microenterprise owners were deemed high risk and needed to remain indoors as a means of safety. This research revealed an interesting insight concerning their digital migration journey during the COVID-19 pandemic.

In light of this, financial institutions should not neglect informal microenterprises when migrating to digital technologies for banking. Microenterprises in the informal sector play an important role driving economic growth. It is therefore necessary to ensure that informal microenterprises are financially included by the banking sector as access to financial services contributes to increasing the credibility of the informal business owners and microenterprises and helping them overcome the entry cost into the formal economy (G20 Global Partnership for Financial Inclusion, 2018). Consequently, the successful adoption of digital technologies by informal microenterprises may serve as a source of competitive advantage in the modern township economy, yet it remains unclear why these informal microenterprises do not make use of existing digital financial technology and tools. Uncovering exactly what determines the acceptance and use of digital banking tools by informal microenterprises can lead to an in-depth understanding of what is needed to bridge the gap from financial exclusion to financial inclusivity – that is access to useful and affordable financial products or services that meet the financial needs of microenterprises in a responsible and sustainable way.

2. Methodology

A cross-sectional research method that followed the interpretivist paradigm was used and was inductive in its approach. The research involved a qualitative approach allowing for data to be collected in the form of one-on-one semi-structured interviews. The aim was to gain deep insights into the factors that were inherently present by the participants when electing to use digital banking alternatives and new ones that may not necessarily have been identified in the literature review.

Ten participants were identified and approached for interviews, of which eight participants provided consent to be interviewed. Anonymity and confidentiality was ensured through the data collection and analysis process as pseudonyms were used for the interviews and coding. . Non-probability, purposive sampling was employed to sample the participants. Participants were approached and contacted by fieldworkers located near participants' microenterprises. The fieldworkers were colleagues of the researcher who reside in the townships where the informal business owners operate and could conduct the interviews in a language the participants were most comfortable with. Interviews were conducted telephonically to protect participants during the COVID-19 restrictions. All eight semi-structured interviews were recorded and transcribed for the data analysis to commence. Transcripts were analysed concurrently during the interview process. Data saturation was reached when no new themes emerged from the eight interviews during the analysis.

An inductive thematic content analysis method was utilised. Content analysis entails systematically categorising responses with the aim to identify overall patterns and themes (Vaismoradi, Turunen & Bondas, 2013:400). The aim of content analysis is to obtain a condensed and broad description of the phenomenon, and the outcome of the analysis is concepts or categories that describe the phenomenon (Elo & Kyngäs, 2008:108). The content analysis served to determine the characteristics of the transcribed interviews' content by examining who says what, to whom and with what effect (Bloor & Wood, 2006:58). Categories that emerged from the free coding process were grouped into the three major themes were identified: Education level, Income level and financial exclusion.

2.1 Trustworthiness and confirmability

Two issues contributed to the reliability of the qualitative data, namely its trustworthiness and its confirmability (Miles, Huberman & Saldana, 2014:312). Bias and deceit were avoided because the transcription of the interviews was done by an expert in the field and also evaluated by the researcher to ensure accuracy. To confirm the originality of the qualitative results, direct quotations were used from the discussions so that recurring themes from different interviews can be seen. The researcher also acknowledged any limitations of the investigation and the potential effects thereof (Shenton, 2004:73). Transferability measures how the results or findings are relevant to a wider population or a different case (Mathew & Ross, 2010:12). The data obtained from the interviews provided detailed information regarding informal microenterprises in the Gauteng area. Therefore, the information provided cannot be applied to a wide variety of cases but could serve as a guideline for such cases.

The limitation of this research: The research was restricted to microenterprises in the informal sector in Gauteng. This specifically included township businesses surrounding Johannesburg. These townships were Alexandra, Soweto, Tembisa and Vosloorus. The research did not focus on the digital adoption of any technology that is not used by customers or potential customers for banking.

3. Purpose of the research

By employing the technology acceptance model by seminal authors Davis Bagozzi and Warshaw (1989), the purpose of this research was to explore how 3 factors, namely education, income and exclusion, determine the adoption of digital banking by informal microenterprises in Johannesburg townships in the Gauteng province of South Africa.

To achieve the purpose of this paper, the following research questions were formulated:

- How does the level of education amongst informal microenterprise owners contribute to the perceived ease of use of digital banking tools?
- How do lower-income levels by informal microenterprise owners impede the perceived usefulness of digital banking?

- How does the implementation of digital banking technologies financially exclude informal microenterprise owners with a negative attitude toward digital banking?

This research contributes to the debate in the local context that digital adoption by the banking sector could exasperate financial exclusion in microenterprises since this segment does not understand how to use banking technology effectively. This research contributes to the knowledge gap that exists in understanding the drivers behind informal microenterprises adopting digital tools in everyday banking. It does also help to realise how the banking sector can become more inclusive to these stakeholders in the SA economy.

4. Literature Review

4.1 The technology acceptance model (TAM)

Seminal authors Davis et al., (1989) introduced the technology acceptance model (TAM), which is specifically meant to describe computer usage behaviour and may be appropriate for demonstrating computer acceptance. TAM is a revision of the theory of reasoned action (TRA) specifically custom-made for modelling user acceptance of information systems. TAM explains user behaviour across a broad range of computing technologies (Davis & Venkatesh, 1996). Davis et al., (1989) demonstrate the need to have a model that can assist not only in prediction but also for an explanation as to why a system may be unacceptable and pursue appropriate corrective steps. TAM, therefore, provides a basis for outlining the impact of external factors on attitudes, internal beliefs and intentions.

According to TAM, behavioural intention is led by perceived usefulness (Davis et al., 1989). Davis (1989: 320) has defined perceived usefulness as the level to which “a person believes that using the system will enhance his or her performance.” Research suggests that individuals either use or not use a system or application if they believe it will help them perform their job better (Davis, 1989). There have been numerous studies that depict perceived usefulness as an influencer to behavioural intention to use an online system (Lin & Chang, 2011). Davis (1989:320) further defined perceived ease of use as “the degree to which a person believes that using a particular system would be free of effort.” Davis (1989) asserts that if all else remaining equal, an application that has been perceived to be easier to use than another will more likely be accepted by a user

In TAM the two primary predictors involved include perceived usefulness and ease of use, which jointly influence the attitude and behavioural intentions of users’ (Davis et al., 1989; King & He, 2006). Lin and Chang (2011) found that customer technology readiness enhanced the perceived ease of use, perceived usefulness, attitude toward use, and intention to use. The results also depicted that technology readiness diluted the positive correlation between perceived ease of use and attitude toward using self-service technologies. Types of self-service technologies include the internet, kiosks, mobile devices and interactive voice responses. In banking, these include digital channels like automated teller machines (ATMs), banking by telephone, services through websites and internet, mobile channels and interactive phone systems (Casto, 2010, Lin & Chang, 2011).

Early studies have revealed that the attitudes of users’ in accepting new information systems have a significant impact on the adoption of information systems (Davis, 1989; Davis & Venkatesh, 1996). In later research by Aboelmaged and Gebba (2013), attitude was confirmed as a determinant of behavioural intention, which was the same as Davis et.al.’s (1989) research. Aboelmaged and Gebba (2013) showed that attitude did have a positive influence on mobile banking adoption. Similarly, Saji and Paul (2018) confirmed the usefulness of TAM in predicting mobile banking adoption behaviour among customers in Kerala using structural equation modeling.. It was shown by both Davis (1993) and Davis and Venkatesh (1996) that a willingness to accept an information system by users was necessary, or else the full benefits of the system will not be achieved.

Notably, studies into TAM apply predominantly quantitative methods with no common building process of acceptance (Saji & Paul, 2018; Scherer et al., 2019; Al Arif et al., 2022). . Additionally, the theory building process of acceptance theories is often done by combining already existing theories making it hard for unknown constructs to find entry into the models (Vogelsang et al., 2013).

Nevertheless, such constructs might turn out to be of high relevance to explain software acceptance. As such, the prevalent theory building process can be characterised as incomplete. This paper will build on the theory by making use of a qualitative approach for TAM using interviews with informal microenterprise owners to explore factors which impact the acceptance of digital banking.

4.2 Level of Education

Goldin and Katz (2008) debate that people who are highly educated are in a position to stay ahead with technological advancements as opposed to people who are not. According to seminal work by Chen et al.(2002), online consumers were usually well educated and had higher incomes. However, to increase the online patronage, appropriate education of the user, lower accessibility cost and proper technological infrastructure were required.

The level of educational attainment is an important consideration when measuring internet skills (Deursen et al., 2011). High levels of computer ownership; broadband connectivity; availability of internet access at home and time spent online are indicative of a higher educated segment of the population (Buente & Robbin, 2008). Jain (2015) further proclaims that financial exclusion is exacerbated by a lack of education of individuals in developing countries.

South African informal businesses are mostly run by black Africans with lower levels of education (Statistics South Africa, 2018b). Poorer individuals may willingly refuse to participate digitally in the formal financial system due to lack of awareness of the benefits of digital banking, lack of education about how to use digital finance platforms or their lack of education about the risks of digital finance services (Peterson, 2018). Peterson (2018) further argues that individuals will not use a product, service or system that is not understood. Palani and Yasodha (2012) reveal that education, in addition to income play a significant role in shaping customer's perceptions about mobile banking services.

4.3 Lower Income levels

A substantial proportion of household heads who live in chronic poverty in South Africa are self-employed in the informal sector (The World Bank, 2020). Buente and Robbin (2008) debate that individuals who are better off financially will use the internet to pursue financial transactions. Younger age groups are also more inclined to purchase financial products online (Fischbach,2020). Research shows that poorer communities within the same country have variances in the data infrastructure quality and are usually less connected to the internet (Salemink, Strijker & Bosworth, 2017). Internet access and proper internet connectivity are necessary for the adoption of online banking (Al-Somali et al., 2009).

Guesalaga and Marshall (2008) discussed that the consumption pattern of lower- income individuals in developing countries was mostly concentrated on basic items such as food, shelter and household goods, with less spending on information and communication technology.

Education and income influence the “digital divide” that exists between the rich and poor (Whitacre, Strover & Gallardo, 2015). Low-income individuals residing in inner cities are particularly digitally excluded (Servon & Nelson, 2001). The informal sector is part of a survivalist approach that permits individuals without considerable formal education to work and earn a living (Yu & Nackerdien, 2019).

5. Results and Findings

Demographic profile of respondents

Participants were informal microenterprise owners found in township communities of Alexandra, Soweto, Tembisa, and Vosloorus. The informal microenterprise owners conducted their businesses either from home, the roadside or taxi-ranks. Participants who operated microenterprises in the Vosloorus township did not possess a senior level basic education and were both in the business of selling food. In the Alexandra area, grade 10 was the highest level of basic education of participants. These participants were also involved in the business of selling food. Only one participant operated a carwash in Soweto obtained a diploma which was the highest level of education amongst all participants. A participant from Tembisa, had completed their senior level of education. The lowest level of education amongst all participants interviewed was grade five.

Table 1: Demographic profile of participants

PSEUDONYM	AREA	DESCRIPTION OF BUSINESS	LEVEL OF EDUCATION
Participant 1	Soweto	Carwash operated next to a petrol station.	Diploma
Participant 2	Vosloorus	Roadside business selling vegetables and biscuits.	Grade 5
Participant 3	Alexandra	Self-made vetkoeks, mixed fruit packs and chips. Sold at the taxi rank.	Grade 7
Participant 4	Tembisa	Ornaments and vases made with wire and sticks. Sold at the taxi rank.	Grade 12
Participant 5	Alexandra	Home-based spaza shop selling vegetables, bread, milk, eggs, cooldrinks, canned food and meat.	Grade 10
Participant 6	Tembisa	Door stoppers, hangers, firewood and charcoal sold at the road intersection.	Grade 5
Participant 7	Soweto	Home-based hair cut parlour.	Grade 10
Participant 8	Vosloorus	Home based chisenyama shop selling braai vleis, pap and chakalaka.	Grade 9

Source: Own Compilation

5.2 Thematic content analysis results

The eight interviewees, who are informal microenterprise owners found in township communities, were asked questions that provided them the opportunity to share their thoughts regarding their perceived ease of use of digital banking tools (research question 1), to share their perspectives on their perceived usefulness of digital banking tools (research question 2) and shed light on their attitudes toward the implementation of digital technology (research question 3). Using an inductive approach for content analysis, three major themes were identified: Education level, income level and financial exclusion.

5.2.1 Education level

Palani and Yasodha (2012) revealed that education was a contributing factor in influencing customer's perceptions about mobile banking services. Similarly, this research found that lower education levels had an impact on the perceived ease of use of digital banking adoption. The majority of the microenterprise owners in the informal sector lacked business skills which were attributable to most of the participants not having completed a grade 12 or equivalent certificate. This lack of business skills was mirrored in the low levels of digital banking adoption in most participants. The participants did not easily understand digital banking, and this impacted the adoption rate. Due to the lower levels of education and the lack of business skills, microenterprise owners are unable to keep abreast with technological changes in the banking sector. These participants depended on relatives and banking staff to assist them in using digital banking channels. While participants did not have adequate business skills to run their microenterprises, they were determined to succeed in making their businesses a success amidst obstacles.

Additionally, a lack of digital skills existed amongst participants. Peterson (2018) argued that poor individuals voluntarily refuse to participate in the formal financial system digitally because of their lack of awareness of digital banking benefits, a lack of understanding on how to use digital platforms specifically for financial activities and not wanting to work with internet service providers. However, this research found that individuals do not adopt digital banking alternatives due to their lack of digital skills. Some participants had never used a computer or smartphone, whilst some were dependent on relatives to assist them in using such devices. Thus, their adoption of digital banking is influenced by their perceived ease of use of digital tools.

The research by Chitungo and Munongo (2013) revealed that service providers such as banks must participate in large community-based education initiatives. This will improve the perceived ease of use of mobile banking and increase usage. Similarly, in this research, the participants mentioned their need for more initiatives by the banking sector in simplifying digital banking.

Microenterprise owners emphasised that they have, to a certain extent, been “forced” to adapt to digital banking as a means of avoiding bank visits and long queues as a result of the COVID 19 pandemic.

Table 2: Direct quotations of responses in relation of educational backgrounds

THEME 1	SUB-THEMES	DESCRIPTION (<i>VERBATIM QUOTES</i>)	PSEUDONYM
Education	Basic Education	“I have a grade 12 and a diploma... I didn’t require any... additional knowledge.”	Participant 1
		“Only went to school for 5 years... I don’t understand how to use them. (Digital platforms) I go to the nearest branch to do my banking”	Participant 2 Participant 3
		“...I stopped going after standard 5... I do not use internet banking...and also, I don’t know how.”	Participant 4
		“I completed my grade 12...I don’t use technology when it comes to banking because I don’t know how.”	Participant 6
		““I completed only standard 3... I take statements and make payments to my club accounts inside the bank. I don’t know how to use the machine to do those things”	
	Lack of business skills	“I didn’t require any experience or additional knowledge to start my business. I just ran with the things as it went along.”	Participant 1
		“There are somethings I don’t understand in business, but I am learning as I am going along.”	Participant 3 Participant 4
		“I ask friends for help, but they don’t always show you the right way to make your businesses successful.”	Participant 5 Participant 8
		“With my little knowledge I am able to run my business well.”	
		“But I can read and write and that’s enough for me to have this shop.”	
	Lack of digital skills	“I can learn more things like using computers and other things. I don’t know how that (computer) works. ... I don’t even know how to use the internet or do my banking on it...what is a smartphone? My phone is only to make phone calls. Nothing else.”	Participant 2
		“...don’t know how to use a computer. I have never used a computer.”	Participant 3 Participant 5
		“My kids bought me a smartphone for my birthday last year. I use it make calls and they are teaching me how to use WhatsApp...I don’t do any banking with my phone. The lady at the bank said she will show me the next time I go there. So, I can learn to do banking on my phone.”	Participant 6 Participant 7
		“I have never used a computer”	
		“... I sometimes go to the internet café to use their computers and learn how to. Yeah, you can say am still learning.”	Participant 8
		“...My son promised to teach me when he will buy one.” (a computer)	
	Lack of knowledge in understanding digital banking platforms	“I think it’s nice for those who understand but for me, it’s hard...”	Participant 2 Participant 3
		“My daughter helps me to make my deposits at the ATMs and draw money.” “It is nice to learn them because as you can see right now it is not safe to go to the banks because of the COVID infections. So, it is important for people like me to learn to use the internet banking to avoid going to the bank. My daughter can teach me but we don’t have internet at home so I can’t learn how to use internet banking.”	Participant 4
		“I don’t know how to use those platforms and prefer to go inside the bank to do my transaction. I know it costs more but if you don’t understand something then you can’t use it.”	Participant 5
		“If there is no one to help me to make payments on the machine I go inside. I don’t deposit on the ATM. I only withdraw at the ATM when my kids are with me. “...I went to the bank the other day and it was so busy. The staff member took me outside and helped me to make a payment on the ATM. It was so quick, and she showed me how easy it is for next time. I liked it very much and I left the bank in 10 minutes. I am 56 years, and I can’t be waiting at the bank and putting myself at risk. The same bank had to close yesterday because some staff members tested positive. So, I think it is very good especially now with social distancing for COVID 19. It is so much safer not to go into the bank.”	Participant 6 Participant 8
		“I don’t know how to use internet banking.”	
		“I don’t do internet banking alone.”	

Source: Own compilation

5.2.2 Income levels

As shown by Woodward et al., (2014) and Chu et al., (2007), informal trading contributes considerably to the income of many homes that are exposed to poverty. Similarly, studies by Yu and Nackerdien (2019) and Potts (2008) demonstrate that informal microenterprises were established in the pursuit of poverty eradication. In this research, the participants interviewed had started their businesses as a mechanism of survival. Most of the participants were just surviving on a daily basis and started their microenterprises as a means to escape poverty.

In this research, the majority of the participants did not have surplus income to acquire digital tools like computers and smartphones. Internet connectivity and accessibility were limited for some participants due to the rural areas that they lived in.

Salemink, Strijker and Bosworth (2017) found that poorer communities had varying data infrastructure quality and lesser internet connectivity. Adequate internet accessibility and connectivity are deemed necessary for online banking to be adopted (Al-Somali et al., 2009). Moreover, it's established that lower-income households spend most of their earnings on essential items such as food, shelter and household goods (Guesalanga & Marshall, 2008). Far less is spent on information and communication technology. Hernandez, Jimenez and Martin (2011) debated that income did not have a central effect on attitudes, perceptions and behaviour of individuals who were familiar with information technology. Contrary to this, this research showed that the participants did not have adequate income to purchase devices like computers and smartphones. Hence, the participants could not become familiar with digital solutions like internet banking and therefore this lowered the perceived usefulness of digital banking.

Participants did not have sufficient money to commute to the closest bank branches. Most banks had closed a vast number of branches in recent years, in the pursuit of driving digital adoption by their customers (Tarrant, 2019). This research showed a similar view since the closest bank branches involved an expensive commute for the microenterprise owner. This has an unfavourable effect since the affected participants instead opted for using their cash revenues in the business instead of banking their proceeds regularly. Louis and Chartier (2017) reflect that geographical exclusion resulting from bank branch closures contributes to financial exclusion. Similarly, this research revealed that informal microenterprises in the townships did not have easy access to bank branches and were not in a position to fully migrate to digital tools. The research by Shevlin (2019) demonstrated a different view that showed customers preferring to use internet banking instead of waiting in long queues at banks. In that research though, bank customers were found to possess suitable knowledge on how to use digital devices and had internet access. This is not the case for informal microenterprises in this research. Table 2 reflects the direct quotations of participants.

Table 3: Direct quotations of responses in relation to income levels

THEME	SUB-THEMES	DESCRIPTION (<i>VERBATIM QUOTES</i>)	PSEUDONYM
2			
Income levels	Survivalist nature of microenterprises in the informal sector	<p>"I needed to put food in my house so the children could eat."</p> <p>"I was working as a domestic but then I lost my job and could not get any other jobs. My children and I needed to eat so that's when I started to make vetkoeks in my kitchen and go to the taxi rank and sell every morning."</p> <p>"I started the business fifteen years ago when I couldn't find any job. I was the only one in my family who could work."</p> <p>"When my husband died, he left us with no money and I had 5 children to raise. So, I started to sell groceries from my home."</p> <p>"I started my business when I lost my job as a gardener. I made the door stoppers and sold them to all my friends and family and then started to sell them at the intersection in Tembisa." "...then I gave up when I couldn't find any job. ... so I decided to just run my business full time. I cut hair from home."</p> <p>"I needed to make money to care for my family so I decided to start this small business in my house some few years ago."</p>	<p>Participant 1</p> <p>Participant 3</p> <p>Participant 5</p> <p>Participant 6</p> <p>Participant 7</p> <p>Participant 8</p>

Lack of access to digital tools	<p>“Sometime there is not sufficient internet coverage in my area...”</p> <p>”My phone is only to make phone calls. Nothing else. I am not sure if I can get connection (internet) at my place. I live in a small shack and I don’t know.”</p> <p>“I don’t have a smartphone. I have an old phone from MTN. “I have never used a computer. I can’t afford to buy one to learn how to use it. It is expensive to get one...” “It is expensive to have internet access and right now I am just trying to live with the little money I make.”</p> <p>“I don’t have access to the internet since data is expensive and I don’t know how to use it.” “I have used my friend’s computer a few times but it is too expensive for me to buy one.”</p> <p>“It is very expensive to buy one”-A computer.</p> <p>“I sometimes don’t have internet signal here...”</p>	<p>Participant 1 Participant 2</p> <p>Participant 3 Participant 4</p> <p>Participant 6 Participant 7</p>
Lack of access to a bank branch	<p>“...I only use the bank branch when I can go to town...Eish it’s far you know. I have to take two taxis to go into the town...The bank closed its branch that was nearer to my house. Now it’s more expensive for me to go into the bank.... I only go every second month. My business doesn’t make so much money for me to spend on taxi fare.”</p> <p>“...sometimes if I don’t have enough money for transport to get to the bank then I just keep the cash with me and use it in the business.”</p>	<p>Participant 2</p> <p>Participant 4</p>

Source: Own compilation

5.2.3 Financial exclusion

This study demonstrated that informal microenterprise owners preferred to use a physical bank branch instead of digital channels. This was attributable to the business owners lacking sufficient knowledge, digital skills as well as accessibility to technological tools. Some of the participants did not want to use digital channels when transacting with larger amounts of money and preferred to visit a bank branch. Even though the participants were aware of the increased costs of using a physical branch channel, they were “forced” into using the branch since they did not understand the digital banking platforms. Lower levels of education and income were key themes that heightened the financial exclusion that digital banking brought to the microenterprise owners. Jain (2015) maintained a similar view in finding that a lack of education exasperated financial exclusion.

Cash was the preferred method of payment for the microenterprise owners that were interviewed. The primary reason for the participants favouring cash was not understanding as well as trusting the safety and security of card machines. In the absence of knowledge on technology and banking, the participants did not have a positive attitude toward banking digitally. As mentioned by Mckane (2018), cash was very popular for payments of smaller value.

Table 4: Direct quotations of responses in relation to financial exclusion

THEME 3	SUB-THEMES	DESCRIPTION (VERBATIM QUOTES)	PSEUDONYM
Financial exclusion	Implicit need to use a bank branch	“I do go to the branch when I need to pay larger amounts since I am not comfortable in paying larger amounts online in case I make a mistake. I also go when I need to pay larger amounts since I am not comfortable in paying larger amounts online in case I make a mistake. I also go to the branch since alot of the times there is no network coverage in my area.”	Participant 1
		“I go to the nearest branch to do my banking...Only deposit my money in the 32 day account and give notice. I take my money out there too.”	Participant 2
		“...prefer to go inside the bank to do my transactions. I know it costs more but if you don’t understand something then you can’t use it...I draw cash at the machine, but I deposit my money inside the bank and I take my statements inside the branch.”	Participant 4
		“Generally, I do everything inside the branch. Payments, deposits, transfers, taking out the money.”	Participant 5
		“I take statements and make payments to my club accounts inside the bank. I don’t know how to use the machine to do	Participant 6
			Participant 7

	those things.” “I only withdraw large amounts inside.”	
Preference to use cash	<p>“The people that come to the carwash generally pay with cash in any case. Also the bank will not give me a card machine facility since I do not run a business account with them. I use my personal bank account.”</p> <p>“Only cash is accepted”</p> <p>“I only accept cash from the people who buy my stuff.”</p> <p>“I only take cash from my customers. I don’t use cards because I don’t know if they are safe and I am not familiar in paying with them...I don’t use technology when it comes to banking cause I don’t know how. I rather keep my cash in my business if I am not sure.”</p> <p>“I don’t accept card payments at my shop. Some customers want to pay with their cards but I don’t like cards. For me I must see my customer’s cash and take it in my hand before I give them their stuff.”</p> <p>“I only take cash. No cards for my business.</p> <p>“I don’t pay with my card when buying things for the shop. I use the cash I get from the customers. My customers pay with cash only here too.”</p>	<p>Participant 1</p> <p>Participant 2</p> <p>Participant 3</p> <p>Participant 4</p> <p>Participant 5</p> <p>Participant 7</p> <p>Participant 8</p>

Source: Own compilation

6. Discussion and conclusion

The purpose of this research was to explore the factors that determine the adoption of digital banking by informal microenterprises in Johannesburg townships, South Africa. In addition, the study used TAM as a theoretical foundation. The results of the study include demographic constructs which would not have been revealed in traditional acceptance studies. The qualitative findings contribute to TAM theory by identifying constructs which play a crucial role the digital banking context. The qualitative approach can be used to build theory for testing quantitatively. Figure 1 below depicts the outcomes of the qualitative research in relation to the theoretical foundation - TAM.

Informal microenterprise owners do not maintain a positive attitude toward digital banking since financial exclusion is exasperated by digital banking alternatives. Lower-income levels and lower education levels contribute to the financial exclusion of informal microenterprises. Informal microenterprises owners generally have a negative perception regarding the ease of use of digital banking and its usefulness for the success of their businesses. This is attributable to their levels of education and income. Lower- education levels and lower-income levels further contribute to the financial exclusion of informal microenterprise owners, as a result, microenterprise have a negative attitude towards digital banking is experienced.

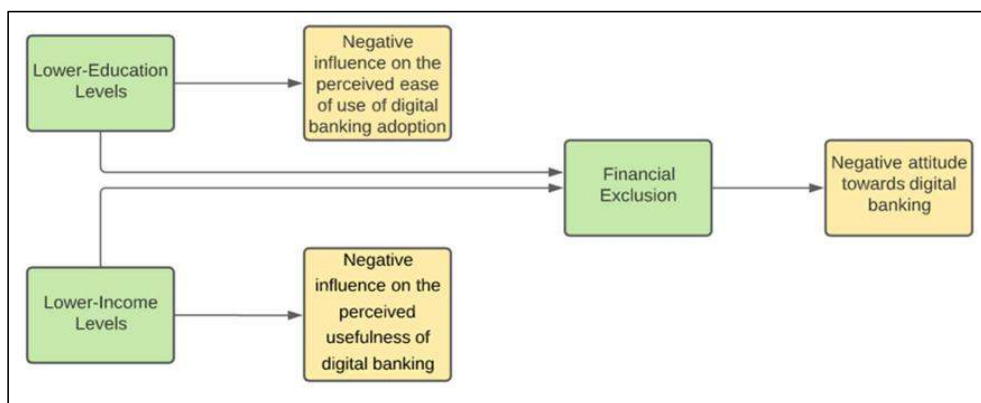


Figure 1: Technology Acceptance model applied to the findings of this research

Recommendations regarding the research can be made as follows: Banking professionals can leverage the insights found in this research. Bank customers who conduct informal microenterprises particularly in the townships require digital banking workshops and interactive learning due to their lower- levels of education. To ensure digital banking is fully entrenched within this segment of the customer base, the banking sector has to adopt a more informative and collaborative approach. Community-based education initiatives around digital banking by banking staff can assist in improving the perceived ease of use of digital banking and ultimately increase usage.

Digital product developers within the financial services industry should consider designing simplified internet banking applications using local township languages such as Xhosa and Zulu with graphic images that can guide customers. Voice-activated tactile screens and instructional videos on internet banking and mobile banking sites can be beneficial to microenterprise owners with low digital skills. Interactive solutions such as voice-enabled robotics could also guide the informal microenterprise bank customers on how to operate digital channels like ATMs. This can assist in increasing the perceived usefulness and ease of use of digital banking as well as positively change the attitude of digital banking by informal microenterprise owners. This will certainly assist in simplifying digital banking and migrating more customers to digital banking alternatives.

This paper makes a significant contribution to an in-depth understanding of what is to bridge the gap from financial exclusion to financial inclusivity – that is access to useful and affordable financial products or services that meet the financial needs of informal microenterprises in a responsible and sustainable way. This research contributes to the knowledge gap that exists in understanding what drives informal microenterprises in adopting digital banking technology.

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Learner - Employer Perspectives On Learnership Implementation In a South African MICT Sector

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Keywords

Learner; Employer;
MICT; Learnerships;
Skills development

Abstract

Youth unemployment continues to be a sticky and persistent challenge in South Africa, and while skills development initiatives are in place, the light at the end of the tunnel is still dim. Post-apartheid in 2001, the ANC led government implemented Learnerships as one of the key policy instruments to address skills shortages and rising unemployment. This study draws on the perceptions of learners, employers and experts to understand Learnership implementation in a Media, Information, Communication and Technology (MICT). The research was designed as a case study and used qualitative research methods. Further to this, document review and analysis was undertaken to further understand learnerships as well as draw insights from other studies and research on Learnerships. A key finding of this study is that learnerships have not been highly effective in reducing unemployment among the youth nor have they catapulted the skills required to advance careers and drive industry growth. This is due to factors such as low demand for certain skill types, a limited number of jobs available and perceptions of learnerships to be inferior to university degrees. The central argument is that the high learner completion results have not been met with an equally robust job creation framework. Over and above this, the expectation placed on learnerships to address unemployment is cumbersome and to a large degree not realistic given that employability is not a function of skill only but of availability and creation of jobs. Learnerships have been effective as a skills development initiative by equipping young people with skills and experience to assist them in finding employment.

1. Introduction

Shortage of skills has been a recurring challenge in South Africa pre-1948, then between 1948 and 1993 under grand apartheid and post-apartheid 1994 to date. The aftermath of the first world war post 1918, was characterised by a flood of semi- skilled labour to 'support' the booming mining and agricultural activities on the African continent, South Africa included (McGrath et al., 2004). This was followed by a chronic skills deficit post the second world war in 1945, as Britain drew on the colonial resources in Africa to supplement men and resources for war purposes (Killingray, 1986). This was due to rapid conscription of military and civilian resources in Africa and Europe to bolster war machinery efforts. The South African mining and manufacturing industry, catapulted into developing semi-skilled labour to sustain its growth, drawing on the existing pool of locals (McGrath et al., 2004). However, from 1948-1993 under apartheid policy, there was contention between state and industry on the purpose and implementation of skills development policy (Akoojee et al., 2008). For the state it's skills development policy, was an instrument for social control in the segregation of Whites and Africans, while for industry they expected the skills development policy to feed their growing skills needs (McGrath, 1998; McGrath et al., 2004). This contention between state and industry resulted in the skills landscape inherited by the ANC government in 1994, which was riddled with skills shortages at all levels i.e. low, intermediate and high skills (Kraak, 2008; Kraak et al., 2006).

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A learnership is outcomes based integrating theory and work-based skills training, which culminates in a qualification recognised in the National Qualifications Framework. Learnerships are a tripartite agreement between a learner, an employer and skills provider accredited by the Qualifications Council for Trade and Occupations (QCTO). A learnership is defined as “a work based learning programme that leads to an NQF registered qualification. Learnerships are directly related to an occupation or field of work, for example, electrical engineering or project management” (Skills Development Act 97 of 1998 amended in 2008). The National Qualifications Framework (NQF) is a comprehensive system for the classification and registration of quality assured national qualifications. Its main purpose is to provide an integrated national framework to facilitate and enhance the quality of education and training in South Africa

Outcomes of these evaluations and ATRs on learnerships show progress has been made in driving skills development targets, as the majority of learners enrolled completed a learnership, with some gaining employment. However the skills crisis remains persistent and high unemployment is prevalent especially among the youth, revealing that learnerships are not producing the right skills, at the right standard and volume to support sustained inclusive economic growth (Bloem, 2015; Goga & van der Westhuizen, 2012; HSRC, 2012). Research conducted to understand the perspectives of employers, learners and SETAs on challenges of implementing learnerships have in the main highlighted capacity challenges of SETAs to effectively manage learnership programmes, mismatch between learnership curriculum and needs of employers, as well as low participation by some employers (Babb & Terry, 2005; Davies & Farquharson, 2004; Grawitzky, 2011; HSRC, 2012; Mummmenthey & Du Preez, 2010; Rowe, 2017; Visser & Kruss, 2009).

The learnership system has churned out a large number of mostly low-level skills that are not aligned with the nation’s industrial strategy. Learners find themselves with a recognised qualification but with limited employability prospects, while employers are left bereft as they find themselves saddled with learners they cannot employ, leaving SETAs at crossroads (Fuller & Unwin, 2003). In its 2019 annual report, the MICT SETA acknowledged that training initiatives needed to follow the high skills digital path, however this needs to be balanced by provision of low end skills to achieve inclusive digital transformation for all. It is against this backdrop that a compelling need emerges to conduct a study aimed at understanding employer and learner perspectives on effective implementation of learnerships.

The evaluation of learnerships against Sector Skills Plan remain relevant in measuring output objectives of the NSDS, however there is an opportunity to contribute to the skills development debate through exploring learner and employer experiences to understand implementation challenges of learnerships (Marock et al., 2008; Rowe, 2017). Assessing learnership programmes at sector and national level is riddled with limitations posed by sectoral differences, persistent patterns of exclusion and complexities in implementation (DHET, 2013; DoL, 2008; Du Toit, 2012; Kruss et al., 2011; NFVF, 2009). This presents an opportunity for further research at a more granular level.

Skills required are different across sectors and past studies have mostly focused on understanding implementation and success at a sector level. There is merit in understanding implementation of learnerships from the experiences and perceptions of learners within a single company. This research seeks to understand the effectiveness of learnerships implemented by a South African MICT firm. Learner tracer studies in the MICT sector between 2011 and 2016 show large numbers of learner throughput. However of concern is the low conversion rate, with 54% of learners absorbed into employment (NSA, 2019). Employers in the MICT sector mostly attribute the low conversion rates to learners graduating in occupations that are not in high demand (NSA, 2019). Current analysis on the low effectiveness of learnerships points to an implementation culture that is preoccupied with numerical targets at the expense of looking at the quality, sustainability and relevance of the learnerships (Marock, 2006; Marock et al., 2008; Wildschut & Kruss, 2018). This effectively limits our knowledge on “whether the current workplace based learning system is functioning as expected” (Wildschut & Kruss, 2018, p.198).

There is evidently a gap in understanding the varied experiences and perceptions of learners and employers who go through the work place based programmes. There is a need to unearth the causal relationships that exist between programmes implemented and skills required by industry (Kraak & Young, 2009; Marock et al., 2008; Rowe, 2017; Wildschut & Kruss, 2018). In addition most studies on learnerships were post-implementation presenting an opportunity to understand issues during implementation.

2. Research purpose and objectives

The purpose of this research is to provide insights into learnership implementation at a South African MICT company. The study seeks the perceptions and experiences of learners and the employer to understand what impedes and facilitates learnership success. This will increase existing knowledge on learnerships as a mechanism for skills development. The study was conducted to provide insights into organisation and sector-related idiosyncrasies and needs, contributing to understanding learnership implementation in the sector. More broadly the study will provides further insights through literature review and information from participants in the study on implementation of learnerships within the work based learning framework. The main objective of the study was to explore the perceptions and experiences of learners and the employer on learnership implementation. Specific objectives are to

- Explore the role of the employer in implementing learnerships and perceived success measures of learnerships within the organisation,
- Gain insights from learners on their experiences and perceptions of how learnerships have contributed to their career growth, development and employment prospects
- Provide further insights through a review of literature, interviewing experts at the MICT sector and training providers

3. Literature review

Skills development has become a term used in a wide range of contexts and it's important for this research to quickly bed down a definition that we will adopt in all discussions in this study. Skills is defined as the ability to satisfactorily undertake a task in something one has been trained in (Heery & Noon, 2008; Ivanovic & Collin, 2006). Skills are also defined by Vorwerk, (2009) as “the embodiment of acquired knowledge, experience and the practised ability to read and respond to changes in the environment”. For purposes of this study, skills development will refer to acquisition and increase in skills levels to satisfactorily accomplish tasks. This implies that there is an expected outcome to skills development.

The context of skills development is informed by this “expected outcome”, which brings us to the importance of skills development. The 2004 World Bank Report on Skills Development in Sub-Saharan Africa considers skills development as a tool for growth and prosperity of the individuals, their community, their place of work, hence their economy. This is supported by the latest report (World Bank, 2021) that asserts that low skills can prolong inequality and poverty if such development initiatives are not implemented right. The right implementation can lower underemployment and lead to higher productivity in the economy. Skills development is linked to the competitiveness of nations on the global stage as it equips economies to harness the opportunities both internal and external to their environment (Johanson & Adams, 2004). This view is augmented by Tabbron & Yang (1997), who postulate that the rapid transformation that developed economies underwent in the 80s and 90s created an intense demand not just for skills but for multi-skilled labour.

A key feature of WBL, is a three way partnership between industry, education institutions and government to develop and implement learning curriculum that supports objectives of industry (Burns & Marshall, 2004). This partnership approach to skills development has been implemented in countries across the globe and is commonly referred to as workplace skills training or work integrated learning (Nottingham, 2017). In South Africa work-based learning is referred to as Learnerships which are supported by a robust legislative framework. A key critique of the integration of education and training approach is that it was not accompanied by a common understanding of terminology. The tension lies

in what Lugg (2009), referred to as a superficial consensus as there did not exist a common understanding of what integrated education and training meant. For others it was an integrated approach that involved key stakeholders and ensured there was reduced exclusion of groups marginalised under apartheid, while for others they viewed it as a practical integration of concomitant bodies and systems in implementation that would ideally bring institutional and resource alignment, building a 'single system' across the value chain of education and work (Lugg, 2009; Mcgrath, 1996; Unterhalter & Young, 1994).

In his analysis of skills shortages in South Africa, Erasmus (2009), shows concern of the role of SETAs and lacklustre performance by SETAs. The SETAs are tasked with identifying the skills needed through current and future needs analysis of skills required by the economic sectors (Erasmus, 2009). However SETAs are preoccupied with reporting on number of people trained through Sector Skills Plans, as they do not have the capacity to conduct robust analysis of the labour market to plan for the market of the future (Erasmus, 2009). Breier (2009) points out the cracks in this intricately woven skills development framework, the jarring reality that skills shortages sit uncomfortably next to a growing pool of unemployed youth. This contradiction points to the shortcomings and disconnects within the skills development strategy. Some of the unemployed youth have completed studies at FETs but are unable to qualify in their technical fields as they struggle to find work place experience which is a core requirement to obtain a qualification (Breier, 2009). In a parallel vein, those that have managed to complete the learnership, remain unemployed as employers perceive the acquired skills to be mismatched to what they require in the workplace (Breier, 2009; Erasmus, 2009). As a result there is growing rift between higher education and the skills required in workplace, which contributes to the crisis of skills shortages and high unemployment.

Empirical evidence shows there has been increased access to skills development opportunities. In its 2019 review of the NSDS III for the period 2011 – 2016, the National Skills Authority (NSA) reported that 23,000 companies out of 300 000 companies registered with SETAs claimed skills development grants, resulting in an enrolment of 1.1million learners through the SETAs, of these learners just over 342,000 were learnerships. In terms of financial contribution to skills development R63billion was collected through skills development levies. In spite of the increased participation and access to skills development shown by the figures above, South Africa is still plagued with high youth unemployment and shortage of skills.

Hattingh (2006), brings in another angle to the lacklustre performance of learnerships, suggesting that learnerships fail as a result of half-hearted attempts by employers in implementing the workplace learning component which constitutes at least 60% of a learnership. This places great focus and emphasis on the role of the employer in achieving successful outcomes from learnerships. However Mumenthey & Du Preez, (2010), are of the view that employers value the concept of learnerships but feel unprepared and unsupported by the SETAs and training providers to capably implement the learnerships.

In a case study that sought the perceptions of employers on learnership implementation, employers expressed high levels of dissatisfaction with the level of information shared by SETAs, with 24% of employers in the construction industry being unaware of the learnership (Mumenthey & Du Preez, 2010). A complimentary angle is provided by Marock (2006) and Fuller & Unwin (2003) who attribute employer dissatisfaction to be in part due to the supply forces (training providers) that are motivated by the financial reward of churning out large numbers of learners. This approach does not consider the demands and needs of the labour market resulting in an oversupply of the "wrong" skills, leaving gaping hole of critical skills needed (Marock, 2006). It's important to note that despite the hard selling of high learner numbers by training providers employers are not necessarily ignorant or innocent in this. There is concrete evidence that in some occupations such as nursing, engineering and finance, learnerships equip students with relevant skills at the appropriate level (Fuller & Unwin, 2003; NSA, 2019; Rickard, 2002). In South Africa as in elsewhere in the world, learnerships or work based learning programmes, were conceptualised or revamped as an extended form of apprenticeship applicable to all sectors (Fuller & Unwin, 2003; OECD/ILO, 2017; Smith et al., 2005). In the UK these were termed

modern apprenticeships extending into sectors such retail, social care and finance (Fuller & Unwin, 2003).

Work based learning in non-traditional sectors such as social care and retail has been described as relying on simply providing exposure to learners and not intentionally providing opportunities to learn (Vorwerk, 2009). However Aderibigbe & Mosia,(2019) dispute this view based on their study on the perceptions of students of business studies at TVET. Interestingly the study revealed that workplace learning seems to provide students of business studies with “better opportunities to learn and prepare them for the workplace” more than classroom based learning (Aderibigbe & Mosia, 2019, p81). The students described their work experience as authentic and meaningful and perceived their work experience as to have contributed to the achievement of the organisations’ goals (Aderibigbe & Mosia, 2019). This is further augmented by the fact that students engaged in a wide range of tasks felt a deep learning experience and were able to see the link between theory learnt in class and the practical tasks carried out in the work place (Aderibigbe & Mosia, 2019; Vorwerk, 2009).

The value of work based learning across sectors is further highlighted by Jackson (2015) who refers to observing an improvement in soft skills such as problem solving, team work and communication through work based learning programmes in Australia. These soft skills are sector agnostic, and this evidence begins to cast a shadow on Fuller and Unwin’s assertion. In an online survey to obtain perceptions of students on work placement, Jackson (2015) found that students from multiple disciplines were of the view that the experience enhanced their ability to solve problems, improved their understanding of corporate responsibility and how technology can be applied to their discipline. It is evident that this was learning they did not assimilate through theory and these learnings are the makings of a professional in the workplace.

However, Vorwerk (2014) offers an alternative perspective citing communities of practice are not restricted to trades but to all occupations. He further elaborates that the education system does not create professionals but instead prepares students to become professionals in their next phase of learning e.g. as articulated clerks, cadets or graduate trainees (Vorwerk, 2014). In contrast to Fuller & Unwin’s view, the discouraging performance of learnerships in particular, is mostly due to a “loss of the apprenticeship culture” (Vorwerk, 2014, p.56).

A key component of the learnership model is for learners to have access to a mentor or coach. Hattingh (2006) avers that an active role by coaches and mentors in the design and implementation of learnerships will greatly assist in solving most the problems that impede learnerships from achieving their intended benefits. The mentor is instrumental in initiating the learner into the work community, using their wisdom and experience to play the role of a trusted advisor (Mummenthey & Du Preez, 2010; Stanz & Mosoeunyane, 2007). When a mentor delivers well on their role, this enhances the learners perception that they are learning and having a deep meaningful experience (Aderibigbe & Mosia, 2019).

The review of past studies on work based programmes has unearthed a plethora of perceptions and evidence on the learnerships implementation. The review of empirical literature has provided a framework in which to couch this case study as there are areas that the research can borrow from as well as close some gaps. It is clear that the increased emphasis on integrating work and learning to achieve learning outcomes of vocational education demands constantly evaluating the effectiveness of this pedagogical strategy (Aderibigbe & Mosia, 2019).

As the review of literature has shown the assessment and evaluation of learnership programmes continue to be predominantly outcomes focused with scant attention paid the process of what, why, how and from whom learners and employers will achieve the skills required to increase employability and availability of critical skills (Aderibigbe & Mosia, 2019; Davies & Farquharson, 2004; Marock et al., 2008). Findings from past studies reviewed, are of significant interest to the this study as they have themes that this research is pursuing. Some employers are unprepared for learnerships, feel inadequately supported by training providers and view some of the skills as redundant to their needs as an organisation (Marock, 2006). Training providers have been found to rely on the ability of employers

to respond to technological advances, training initiatives do not result in reduction of skills shortages and learners were offered limited practical experience (Fuller & Unwin, 2003; HSRC, 2012; Marock, 2006; Mummmenthey & Du Preez, 2010). In addition to this, unique sector specific models are required to meet labour market needs of the different sectors, and in some sectors there are no clearly defined career pathways making growth and transition difficult (HSRC, 2012). Perceptions of learners revealed that they need mentorship and coaching to assimilate into the workplace, as well as some level of preparedness to choose the right courses (Hattingh, 2006; Marock, 2006; Rickard, 2002; Zwane, 2012). Related to this the role, capability and competence of a mentor was underscored as being one of the critical success factors for learnership implementation.

Opposing views have also emerged on the effectiveness of learnerships. The HSRC case studies of 2012, put forward that it was evident that inappropriateness of learnerships to labour needs is not the issue, but that the biggest challenge is effective implementation. However there is a compelling view that research studies undertaken do not satisfactorily explain differences in success from one sector to another and that employer participation needs to be more prominent (Davies & Farquharson, 2004; Mummmenthey & Du Preez, 2010).

Recommendations from these studies centred on improved policy coordination frameworks of the various skills development frameworks, enhancing capacity of SETAs and streamlining their efforts (Davies & Farquharson, 2004; NSA, 2019; Rickard, 2002). In addition Feldman (2016) highlights the need for nuanced sector studies to understand the challenges and opportunities in each sector. These views and findings present opportunities that this research explores, by focusing on perceptions of learnership implementation within a single company in the MICT sector, during implementation as opposed to post implementation. This approach will provide deeper nuanced insights as every organisation is different and the setting allows the study to include current learners, past learners and the employer in one single study. This enables the study to identify relationships in the immediate context that may impact perceptions and experiences of participants in a single case study.

4. Research methodology

The purpose of this study was to provide insights on the implementation of learnership programmes, through the perceptions and experiences of learners and the employer. An MICT company was adopted as a case study for the research as it implements and support learnership programmes as part of its skills development initiatives. In an attempt to understand the learnership implementation at this company pursued three research questions that include: (1) what the employer perspectives and experiences are on how learnership programmes contributed to the skills development needs of the firm? (2) what are the perceptions of employees on how learnerships support career development of existing employees? (3) what are the perceptions of learners on how learnerships facilitated them to obtain permanent and retain employment?

The qualitative method allows the research objectives of the study to be achieved by delving into multiple insights and experiences of participants complimented by review of existing reports. Mason (2002) points out that qualitative research is particularly good at supporting arguments that focus on how processes operate and are structured, which was a core focus of the study. Adopting quantitative methods would have been antagonistic to the purpose of the study, as quantitative research seeks to generalise findings as well as predict outcomes in some instances (Ellis, 2020; Merriam & Tisdell, 2016).

The research design is informed by the purpose, process and context of the study (Wagner et al., 2012). On this premise, given that this study aimed at understanding experiences through engaging with personal experiences of participants within a specific context the research was designed as a qualitative case study. The research was designed as a case study with clear boundaries, focusing on MICT firm, which is the unit of analysis and participants were limited to past and current learners at the company, and experts from the MICT SETA and training providers.

As a case study research design was used to gain insights of learners and the employer on learnership implementation at an MICT company, the case of study-the organisation- will be adopted as the population. This is supported by the views of (Schwandt, 2001) that a case is specific and bounded in time and place, where a phenomena can be studied. This firm is considered a leading entertainment company established almost four decades ago and has grown to be an industry leader with an African footprint, however the case study will only focus on a South African MICT company. Given the nature of its core business of delivering entertainment through various digital platforms, there is a growing and constant need for nurturing and acquiring skills in the key fields of technology, digital transformation and innovation. The intention of drawing a sample in a qualitative research is to find participants who have experience and knowledge of the matter under study (Ellis, 2020). This implies people are selected to take part in research on the basis of their ability to contribute towards the purpose of the research. Therefore the sample method purposively decides who participates to meet the objectives of the research (Ellis, 2020; Merriam & Tisdell, 2016).

Qualitative research design mainly relies on three data gathering techniques namely, interviews, observations and document review (Wagner et al., 2012). These techniques were combined for the study to enrich data and enhance its trustworthiness through triangulation (Bryman, 2012). An interview schedule with semi-structured questions, was the primary data collection instrument designed and adopted for this study. Three questionnaires were developed, one focusing on views of employees representing the employer, one on experts and the other on learners. There were some similar questions on the employee and learner schedules to allow for comparison and cross checking of data collected as well as questions unique to employees and learners.

The online platforms (Zoom and MS Teams) were utilised during data collection. This method of data collection was adopted due to Covid-19 restrictions imposed in the country and the remote working conditions that were enforced as a result of the pandemic. Interviews were selected as they offered the advantage of providing thick vivid descriptions of how learners experience learnership implementation. Bloomberg & Volpe (2016), do allude to some pitfalls of interviews as participants can be uncooperative, share limited views and have varying degrees of articulation. To counter some of these disadvantages, the study made use of document review to increase knowledge on the implementation of learnerships. Primary documents reviewed included company policy on learnership implementation, site visit reports by training providers, assessments of learners by training providers and management reports to the company provided by the training providers.

5. Research findings

Here we present findings from the data collection processes undertaken. The purpose of the case study was to understand the implementation of learnership programmes, through the perceptions and experiences of a sample of learners and employees at a MICT company in South Africa. In addition views of experts and training providers involved in implementation were sought. The emerging and confirmed issues emanating from the study, enhance and deepen the existing knowledge on learnerships as a tool for skills development. In addition findings from the research can be applied in the implementation choices of learnership programmes by similar companies. This section presents findings from 16 interviews conducted with stakeholders involved in the implementation of learnerships at MICT.

The response rate of the various stakeholders for this study was encouraging as a fair number of participants agreed to participate. Participants from past and current learners was less than planned. Participants from employees involved in implementation was achieved as all targeted participants agreed to participate. In addition there was satisfactory participation from training providers and experts. Table 1 below depicts a summary of the participants' response rate. The table shows the actual respondents compared to the proposed sample across the 3 respondent categories. In total 16 interviews were conducted against the 26 planned interviews

Table 1: Participant response rate

Group	Designation	Proposed Sample	Actual Responses
Learners	Current Learners	10	5
	Past Learners	10	6
Experts	MICT SETA	2	1
	Employees Implementors	2	2
Training Providers	Training Providers	2	2
Total		26	16

There was reluctance by some learners to participate as a handful that had initially agreed to the interviews, declined to participate closer to the interview.

5.1 Participant biographical data - Learners

In the introductory questions of the interview, some key information with regards to the age, gender and education level of the Learners participating in the study was sought. The table below depicts this data.

Table 2: Learner biographical data

Age		Gender		Highest Educational Qualification	
<i>18 -24 Years</i>	<i>25- 34 Years</i>	<i>Male</i>	<i>Female</i>	<i>Matric</i>	<i>Occupational certificate</i>
7	4	6	5	5	6

Learner respondents had completed or were undertaking various fields of study in the learnerships. The duration of the learnership was indicated as 12 months by all learners interviewed. This was also confirmed by the training providers and the employer. All past learners had less than 2 years working experience and none of the learners interviewed indicated having work experience before commencing the learnership programme. Biographical data of experts, training providers and employees involved in implementation were not recorded as part of the data collection process. The information obtained from the data was supported by quotes taken from the transcripts. To maintain anonymity of the participants the following naming conventions have been applied to identify the different participant groups, past learners (PL), current learners (CL), employees representing employer (EM) training providers (TP) and experts from MICT SETA (EX). Four themes were established from the analysis and these include embarking on learnership, learnerships perceived to be facilitator into employment; the role of the mentor and finally the applicability of theory to practical work component.

5.2 Embarking on a Learnership

For the most part, the process of applying and starting a learnership appears to be well structured as expressed by learners, training providers and employees involved in implementing learnerships. Almost all participants were able to similarly articulate the process and appeared to show understanding, finding it quite easy to follow. Some direct views are presented below

“I went to the assessment in Roodepoort, I filled out forms, they said they would contact me, I came back for a test and I got the call I could come and start.” (PL)”

“It’s been a simple process, if you meet people who can assist you in applying it’s not a problem at all, you need to know [a] company that helps-they do it for free.”(CL)

“Most of these young people are quite eager to start doing something meaningful and complete the required documentation, however of course others need help to provide all required information and that’s why we are here...to help them as much as possible.” (TP)

“The process requires quite a lot of documentation as a complete file is required to support, the contracting process, but the training providers are very astute in managing the administration requirements, it’s not a pain at all for us” (EM)

“I can even help my friends apply, in fact, I do; it’s so easy just follow and gather all the documents, show up for the tests and you’re in.” (CL)

Concurring with what the other respondents had mentioned, PL further explained “It’s not that difficult, they ask you for your personal information, they give you a portfolio of information, you complete and submit it to the training provider, then you go for an interview”. Conversely, it should be noted that a few learners were not very clear on what was expected of them during the application process and did not fully understand the process even though they managed to get onto the programme. PL commented, “I just wanted to learn and get a qualification, I didn’t know there was a placement, it was a good surprise”. The same sentiment was shared by CL

“I remember the training provider telling me that there was an interview, I didn’t know what for, I just went and was interviewed, then I was doing the learnership...I made it”

However, there were some sentiments from training providers that the vetting process of getting learners on to the learnership was not always thorough and not always in their control. Training providers indicated that they source and recruit learners and sometimes they are given existing learners by a corporate and asked to place them at another host organisation.

In terms of entry criteria, training providers explained that learners are required to have a matric at a minimum to be able to embark on a learnership, and in addition competency in English and Maths Literacy is essential to successfully complete a learnership qualification. However in some instances learners who do not have full requirements get onto the programme and struggle to complete the qualifications. There was a suggestion that some training providers are not as thorough, and the recruitment is subjective to some extent. Concurring with this view was a comment by TP that “matric can be verified it’s a yes or no, but the English and Maths literacy is determined through assessments conducted by the training provider, “therefore, competency becomes subjective and its sad but some who don’t have the ability end up on the programme and they fail” (TP). The importance of vetting for competency and ability is further elaborated in the comments below

“So you know one can’t take for granted because people have matric that they’re going to pass the qualification, so we do a very stringent vetting process. We have telephonic interviews with all the learners, we engage with them by asking them questions about their experience, about you know their general communication because that’s very important because they have to be able to have a basic understanding of English and Maths Literacy to attempt the qualifications and then answer the workplace evidence in the Portfolio of Evidence.” (TP)

“One gentleman was allowed to enrol on project management level 4, but he really should not have been enrolled at all because he did not have the competency level on a Maths and English Literacy level to attempt a level 4 qualification, so you see there are loopholes in the system... eventually he had to be dismissed because he was non-compliant in all his interactions with us...he couldn’t come to the party and it a waste of money for MICT and a wasted opportunity for a competent learner.” (TP)

“it’s very important that such kind of decision-making is made upfront before one embarks on a learning program to give them fair advantage to be able to achieve the competence.” (TP)

“When I say ‘able’ I am not talking about disabled people you know physically, I’m saying able to a pass a qualification and then add value to the host company see that’s also so important, so our role is to find able learners there is yeah there is a lot involved you know.” (TP)

“I personally get involved in this upfront process because I deal with the host companies myself, because it's my credibility also at the end of the day when I'm presenting CVs of learners, I've gotta make sure that they are going to not let that host company down, they're going to be reliable people they are going to arrive at work on time they are going to be compliant.” (TP)

“I really do believe that otherwise it's a disservice to the learner you know to, I mean shame wasting a year of their life for something that you know they can't even obtain because they don't have the necessary skills and knowledge it's very sad and a waste of money for MICT yeah it is a lost opportunity that should have been given to someone else.” (EX)

“you know people need to be competent or have a certain skill level before they go into a new learnership that's an instance of ...you just didn't have the required requisite knowledge to cope shame actually it was a bit sad yeah 'cause you can imagine they'd struggle with the next level.” (TP)

Cementing the above views, there was particular challenges that learners also faced over the lockdown period as a result of COVID-19, when they had to work and study remotely. These challenges were not anticipated during recruitment and some learners struggled with making use of IT services such as Zoom, MS Teams and working remotely. One training provider expressed how they really felt for the learners and organised calls with the learners to assist them. They commented “I just wanted to ... help him, like fly to PE ... but you know I couldn't ... just goes back to vetting learners before they come on learnerships and I think that that is something that needs to be improved”. In addition, there was also mention of fraudulent practices by some learners that present dishonest information on their CV's, “making claims on qualifications they do not have” (TP). Some recruiters are not thorough in their vetting and send inappropriate people to training providers. One such incident was aptly described below

“That's what happened with (name withheld) in Project Management for Durban, she ended up lying on her CV. The recruitment agency did not pick it up and she had swindled two other training providers out of stipends, oh the stories I could tell you...there is a desperation among our youth, there really is a desperation they are wanting opportunities so badly.” (TP)

Further to a near-seamless application process, learners indicated a high degree of satisfaction with the process of onboarding onto the programme and into the workplace, CL expressed that “they [MICT] were ready for us when we arrived, we were given laptops even stationery and I even had a company tag with my face on it, just like their own employees”. This is also in line with what PL commented on “ You know when you arrive, you are nervous, but these people are professionals, they know what must happen, everything is organised for us, we even had lunch and I began to feel better, they were expecting us, it felt good”. CL indicated further that “I realised I am now in corporate, they communicate very well what our programme was and what would happen, I wasn't guessing, and I know who to dial if I needed something, they were prepared for us and it helped me”.

In addition training providers also expressed that “there is a need to understand where some of these kids come from, they are unsure of themselves and some don't pay attention to detail as required. I do find that once you clearly explain even if it's again and again, very few don't complete the documentation, most of them do”. In addition, training providers made recurring observations that even though there is induction some learners just don't follow the rules or behave according to the workplace requirements. The training providers emphasized, “we talk about codes of ethics we talk about professionalism in the workplace that is part of our induction process, but people are just unreliable sometimes, it's the human condition”.

All learners also expressed that they had the resources and support they needed for the learnership, from both the training provider and employer. CL indicated “ they [training provider] give us a tablet with all our study materials so we don't carry books around, they also explain what we need to be doing and I find it easy to follow”. PL explained “Even when we start the work, my supervisor told me what I needed to do, it was already written down, so the following day I knew what to do”

5.3 Learnerships as a springboard into employment

All Learners indicated that before starting their learnership, they had completed matric, were not employed and were seeking an opportunity to either gain employment or achieve a recognised qualification to propel them into employment. Based on participants' descriptions of their expectations prior to applying for their learnership, learners believed learnerships would give them leverage in getting employment. The learners expressed this as follows

“After completing Matric, I couldn’t get into university as the programme I was accepted for-Governance studies, did not qualify for NSFAS funding. I couldn’t afford university and I didn’t want to stay at home and my sister’s friend told me that doing a learnership would help me to get a qualification, so I applied” (PL)

“Eish you know it’s difficult to get a job on your own. When I completed Matric, I heard about learnerships from the Department of Labour and they said it can help you get skills and get employed. I submitted my CV and they contacted me so I could start a learnership, it would help me get a job.” (CL)

“I was very happy to get a job...I mean the learnership, as they pay me a stipend that improves things at home, and I can do things for myself and my family.” (CL)

“As soon as I started the learnership with MICT, I knew my foot was in the door and I started looking for vacancies so I can get employed. Yoh, I applied for many positions on the job portal...and maybe that’s how I was now offered a 6-month contract...they saw I really I wanted a job.” (PL)

“The good thing...you know about a learnership is the work placement, this company neh MICT...they can offer many training opportunities and I went, and I got many skills and even certificates that if I don’t get a permanent job here, I now have more qualification to apply for a job somewhere...they will look at me as qualified.” (CL)

In describing their expectations of getting employment through a learnership, Learners that had completed a learnership and were now employed expressed how the learnership gave them an opportunity as cited by PL, who said “...where would they have known me about me if I had not been their Learner-nowhere”, and also PL who commented, “I now tell all my friends, apply for learnerships; it doesn’t matter what you want to do; do the Learner [ship] and you can get a job sometimes”.

Some of the current Learners expressed that although they were hopeful, they also knew employment was not guaranteed and therefore indicated they were anxious of what would happen. CL stated, “I just hope I am offered a job after I finish, I saw other leaving who had finished...they couldn’t get a job here”. Similar sentiments were offered by CL as one expressed “*I can’t imagine not getting a job here when I finish..yhuuuu, but it happens mos, I am doing my best so I can get a job, I also want to work here and get a permanent job*”.

There were however a few learners that expressed their confidence in the learnership qualification as opening opportunities for them beyond MICT. This indicates Learners had found the experience valuable and felt they had achieved something by being part of the learnership. CL emphasized, “...but you know even after my contract ends, I now have experience and a qualification and with my skills I am now better than someone with Matric, I have a better chance out there”. Echoing similar sentiments, CL stated “I am now similar to a graduate, they will also see I can do the work somewhere else and maybe even the SABC can offer me a job; I now know something about the industry”.

You know having spent almost a year here I have made serious connections, I can call them to ask for advice and I can ask them to refer me when I get a job, that is important. Where I am from, I don’t know someone that can refer me or check [that] my CV is ok, but with the people I know even if they hear of an opportunity, they will buzz me...errr...I mean call me to say man, check this out. (CL)

Existing employees that had completed a learnership, expressed mixed feelings on the opportunities for career development the learnerships awarded them. The different views are as below:

Now I have a learnership or a qualification, but I am still doing the same job, I haven't changed, I mean yes I know more, and they know I can do the job, but it hasn't changed. When I apply for other posts, I don't get them. (PL). It's not easy to get another job, sometimes I ask my manager can I do something else in the team and I am given a report to do, and I am happy, but I have the same post. One of my colleagues said I should apply for a secondment...you know to work in another team ...I applied I am still waiting. (PL). Maybe I will do another learnership, who knows maybe could be something in tech, I see there are jobs there; the one I did- project management I don't see more jobs, just senior ones and I am not there yet. (PL)

The view by past learners also suggests that learners perceive learnerships in specific fields to award more opportunities for career development compared to others. This is echoed by another learner saying, “ you know these things of jobs...depend on the type of learnerships, business administration is hard to get a job, but data analyst or technical support you get a better chance”. An interesting perspective was introduced where other learners did not feel confident enough to start looking for growth prospects as they indicated a need to excel in their current role.

My fear neh, is that I need to be able to prove I can do the job I have first, I need to show I am good, now if I start applying for other jobs what if I can't do them, I want to do what I am doing now so well, then when they move me, or I get another job it will be easy. My uncle said do not lift your head looking for other jobs already, lift your head to learn and keep your head looking down to do your job well. (PL)

Perspectives of training providers and experts echoed similar sentiments as above, highlighting that learnerships were an important tool in skills development for the nation as a whole but the biggest shortcoming is the limited absorption into employment upon completion of a learnership.

MICT SETA is the tool. It provides the right kinds of learnerships, but at the end of the day it's about the absorption of learners. So you know we are addressing skills development, but are those people being employed? That's, that's the big gap with learnerships right now. That is a huge anomaly that is happening in all corporates. It's not just MICT, it's happening everywhere. (EX)

I tell the learners if MICT absorbs you be grateful, be humbly grateful and don't stuff it up. Be at work on time, Show the employer that you are really serious about this opportunity, Yeah, it's like a diamond in the dust. (TP)

As a result of the limited absorption there appears to have emerged serial learners , as learners then move from one learnership to another as they cannot find employment. As a consequence they prefer to stay on the learnership and get the stipend and an education while at it. One learner who was on their second learnership expressed that “ it's better than me staying at home, at least I still get money to support at home”. Another learner stressed that ‘if I don't get a job offer, I will try to get onto another learnership, unemployment is not nice guys, I might as well learn, and they give me money”. In support of the views and experiences of the learners, one training provider provided the following comment

It can be disheartening. I mean a big joke amongst training providers is that you have a group ... called professional learners. People, people who enrol from one learnership to another, just as a source of income. You know, and you can't blame these poor kids. (TP)

5.4 Role of the mentor

An emerging theme from participant responses was the role of the mentor in the learnership programme. It should be noted that the supervisor or line manager also plays the role of the mentor. There were interesting perspectives on this from learners, employees and training providers. Overall there is no doubt on the importance of mentors, but it would appear that sometimes the mentor – mentee relationship is fraught with challenges. The views of the employer and training providers on one hand

begin to allude to the challenges associated with mentorship of learners. Their perceptions suggest the need for structure and training of mentors for the mentor-mentee relationship to be successful. Perceptions and views of learner respondents support the views of employers and training providers, and provide more nuanced detail.

The views of learners, actually bring to the fore the suggestion by the employer that supervisors are not well prepared for the learner and their role in developing a learner. However some learners expressed having had a positive relationships with their mentors as it helped them navigate the workplace. The nature of relationship between mentor and mentee came across as varied as shown by the applicant respondents. Some respondents showed a hesitation to freely express their views and referred to their mentors as “hard”, “tough” or even “strict”. In addition there was a view that as a mentor “ they cannot be friendly, as they are the boss” which suggests that some learners experienced their mentors as more focused and interested in the work-related aspects as opposed to the personal and social well-being of the learner. The views of training providers on the expected role of the mentor, mirror the expectations of the learners. The training providers sometimes have to step in and provide social support to learners as some mentors are not always able to assist.

Based on the above the role of the training provider goes beyond just recruiting and training learners but they take a holistic approach and there were some comments by training providers that for them it's about the “moral obligation” to support learners holistically, as it was “not just about earning revenue, but about the future and growth of the learner, the individual”. In addition training providers expressed that some employees involved in implementing learnerships at MICT, also provided social support to learners as required. One employee at MICT was described as having “incredible emotional intelligence when it comes to connecting with learners and developing reports for the learners”. (TP)

Another perspective provided by training providers alludes to the fact that given that mentors already have full time jobs , expecting them to support or coach young learners is a stretch for them. It is common for a mentor to have three to four learners assigned to them at once. The views above begin to suggest enhancements that can be done in the manner in which learners are mentored or supervised to increase the benefit for both employers and learners.

5.5 Applicability of the theory to practical work component

Most participants expressed that the work placement complemented the theory, with a few instances cited where this was not the case. CL commented that “ when I started the work, hands on part of it, it now made sense in relation to what they were teaching us first”. Similarly a number of learners expressed “feeling ready” and “able to see the link” when asked how they felt about the theory and its applicability in the workplace. In some instances learners felt that the practical actually required “more thinking” as in the workplace “things can change so fast”. Some learners gave specific examples of how the theory and practical augmented each other, CL stated that “ It was good that, they taught us how to write emails and conduct meetings...in the meeting I know what to do and I know how to communicate on email”.

Employers involved in learnership implementation expressed confidence in the suitability of the theory aspect and they believed “It prepares them [learners] for when they land, they have the concepts, now it's just applying and expanding”, (EM). In addition there was mention of a healthy disconnect as technology and the way things are done in the workplace are constantly shifting and therefore learners have to keep pace through the practical work.

There was however, several respondents who mentioned that some learners were found wanting on skills or capabilities on the “softer side” when learners started their work placement. The missing skills were described as “ timeliness, showing up, communicating, and how to carry oneself in the workplace”. There was a comment from the training provider to further explain this, “ you know we should understand it's like joining a family, you don't quite fit in unless you do things the way they do, talk, act and mimic”. Some learners attested to this when they said phrases like “I didn't know 2 minutes late is like already late”, “in this place you have to know how to say things and who to tell

when something happens and you can't be there". It is apparent that some learners realised the areas they were not doing right and in some instances took the time to change. PL expressed that, "sometimes you don't know these things and at least they show you and tell you and you improve". However, according to the training providers, it would appear learners should know these things as they expressed that the "we do an induction at the beginning of the learnership where we talk about codes of ethics we talk about professionalism in the workplace that is part of our induction process for MICT learners and indeed any learners we trained on behalf of other corporate clients".

However training providers and experts from MICT SETA did emphasize that in some instances the practical work did not provide an opportunity to apply the theory learnt on the learnership. This was particularly true, where the hosting was done by a secondary organisation and not the organisation sponsoring the learnership. This was particularly in the case where the "opportunity to practice was limited or not available". For certain courses such as IT support, some learners were not able to be placed in an area that allowed to practice this, instead ending up in a general role. The reasons cited for this by training providers, allude to the fact that employers are sometimes not too trusting of the ability of learners and to minimise risk they place them in general departments sometimes not related to their area of study.

The role of the mentor also came to the fore to support and close the gap, where practical opportunity linked to theory is limited or unavailable. In this case learners need to build their portfolio of evidence by doing a lot of research in the host organisation. Mentors are then required to support learners to build their portfolio of evidence so that they understand how the theory can be applied in the workplace. This is an alternative that the training providers rely upon to close the gap between theory and practical skills learnt

5.6 Results and Findings

The purpose of the case study was to understand the implementation of learnership programmes, through the perceptions and experiences of a sample of learners and employees involved in learnership implementation at MICT. In addition, the views of experts and training providers involved in implementation were sought to provide greater understanding to the case. The intention was to bring together the views, opinions and insights of these multiple stakeholders as one way of further enhancing existing knowledge on learnerships as a tool for skills development in South Africa.

This study is situated in the constructivist paradigm as it sought to understand the experiences and perceptions of employers, learners, and experts on learnership implementation. In line with the constructivist paradigm as noted by Creswell (2009) and Wagner et al., (2012), information gathered during this study was influenced by the context, with multiple realities informing the data collected and discussion of the findings. Data was collected through individual online interviews with 16 participants. Research participants consisted of past and current learners, employees involved in implementation who brought in the voice of the employer and experts from MICT SETA and training providers. The data collected was coded and analyzed and first grouped by perceptions of stakeholders on the questions asked and then categorized into themes in line with the conceptual framework as illustrated in Section 2. The study sought to answer the following 3 research questions (a) What are employer perspectives and experiences on how learnership programmes contributed to the skills development needs of the organisation? (b) What are the perceptions of employees on how learnerships support career development of existing employees? (c) What are the perceptions of learners on how learnerships facilitated them to obtain and retain employment?

5.6.1 Interpretation of findings

While there were some different views from the stakeholders, there was overall consensus in the perception that learnerships were a valuable mechanism to drive skills development and increase the employability of unemployed youth. However, there were almost unanimous views and opinions that, when it comes to enabling the unemployed to gain employment, learnerships had not met expectations for the most part. This then puts into question the sustainability of this skills development intervention. In each of the four themes emanating from the study, the perceptions of learnerships by the different

stakeholders is discussed, providing a comprehensive narrative of their views on learnership implementation at an MICT company.

5.6.2 Embarking on the Learnership

The opening questions of the interviews sought to gain participants' perceptions on the process of choosing and applying for a learnership. This was important in understanding the context and circumstances of the learners, as the context of the study is important in understanding qualitative research. Learners expressed that they first heard about learnerships from family and friends who had been on a learnership or that they knew someone who had attended, and this encouraged them to apply. Related to this, learners expressed that they were not always sure of the process but went along with the requests of the recruiters. This view is confirmed by training providers that proffered that “learners were not always prepared for interviews and seemed to struggle in fully understanding that all documentation is required prior to starting a learnership”. In addition training providers mentioned that there were a number of recruitment agencies that advertised and raised awareness on learnerships. However, only one learner indicated they had responded to these particular adverts by recruiters. Challenges at the onset of a learnership are substantiated by Petersen et al., (2016) who found that limited awareness of key processes such as application and registration cause confusion in learnership implementation.

However from the employers' perspective, it would appear that they found the process of getting learners onboarded quite “stress-free” as they found the SETA and Training Providers to be efficient in enrolling learners. Interestingly, this finding contradicts the views of Pauw et al., (2009) that SETAs frustrate the process with their incompetence and mismanagement. Circling back to the manner in which learners heard about learnerships and their approach to applying, it would appear the learners seem to view learnerships as an almost informal process, open to anyone. This evidenced by learners that indicated they really did not understand the process but went through with it all the same. This is also substantiated by the comments of training providers that the vetting process is not always very thorough, further cementing the perception that it is easy and simple to get onto a learnership. This is consistent with the finding of De Louw, (2009) that some learners do not adequately complete the application forms and do not fully meet the entry criteria but end up being enrolled anyway on the learnership.

However, it should be noted that some training providers, make a meticulous effort to vet the learners they recruit as they are aware that their reputation is at stake when implementing learnerships. As one training provider stated, “it’s my name and the company’s reputation on the line, so we are very careful in our selection process to get candidates with the required competencies and abilities”. This approach is supported by Vorwerk (2014) as he asserts that the successful outcomes of learnerships are also dependant on the caliber of the learners and their ability to execute the tasks. However, Vally & Motala, (2014) strongly assert that the very notion of applying screening criteria and credentials in deciding who participates and does not participate is subjective as it is not a complete predictor of trainability. This suggests that although there is perceived importance in the vetting process, it’s an ability and willingness to learn that should also be considered. In the same vein, it should be stressed that there is a need for a selection mechanism to determine who is in and who is out given that resources are finite and not everyone can participate in a learnership. A case in point is given by one training provider through an example of a gentleman who ended up dropping out of the programme as he did not have the required competencies and ability to carry on with the programme.

It can therefore be surmised that learners’ perceptions of a simple and easy application process, are in part informed by their approach to the application process and exacerbated by recruiting agencies that do not adequately vet learners. Interesting to note is that the employer views the application process as well structured, as the training provider ensures that all the necessary documentation is in place to support the contracting process. One employee did concede that “one of the challenges is when a learner does not submit even one document, this can hold up the process as our legal needs a complete file before we can contract”. Evidently, there are several processes and requirements, that are not the purview of the learner, which the training providers have to complete to ensure contracting is done to

commence the learnership. As Mummmenthey & Du Preez (2010) observed, there is a high administrative burden associated with learnerships, and the training provider is saddled with this.

Following on from this we can deduce that, the reasons learners choose a learnership inform their perceptions of the value of learnerships. Almost all learners indicated that they had found themselves with nothing to do after completing matric, having failed to get into college or obtain gainful employment. One learner commented, “I did not get the place to study at university, and my friend told me about the learnership, so I applied”. This suggests two notions with regards to the reasons why participants ended up on a learnership. The first is that they were encouraged by their friends and family and the second notion is that it is perceived to provide a route out of unemployment. This suggests that learnerships are not perceived to be an ultimate goal but a means to something else. The learners appear to pursue learnerships as an alternative or something they can do until they find what they want to do. This view is consistent with the argument by Vally & Motala, (2014) that vocational training programmes such as learnerships, are not the preferred choice by South African youth, as university-based education is viewed as superior, which infers that vocational education is not seen in a redeeming light.

Over and above this, the learners do not always necessarily choose a specific learnership but rather they are enrolled in a learnership that is available. Such a decision-making process or rather lack of decision making does seem to manifest in the limited commitment of the learner during the learnership. This makes us pause and consider the actual value that learners attach to a learnership. Value of the learnership becomes subjective to the needs and circumstances of the learner at the time, which does not necessarily align with the intended value of learnerships within the skills development framework. These findings are consistent with the results of a learnership tracer study conducted by IQ Business in 2014, in which learners expressed that the learnership had no real value unless it resulted in employment (IQ Business, 2014). This view is countered by Pauw et al., (2009), as they suggest that linking the value of learnerships to the potential for employability is a misguided notion, as there are a host of factors that influence employability beyond attaining a qualification.

The views expressed by the learners on how they felt “welcomed and expected” by the host employer indicate that there is value derived from this aspect. Learners seem to imply that they felt they belonged and were part of a team, which instils confidence and self-esteem which are crucial to learning and productivity in the workplace. These sentiments are echoed by the training provider alluding that, entering a formal workplace environment is an achievement for some of the learners and opens up their minds and lives to a world that is not within reach in the communities they come from.

Through discussing perceptions on the process of applying and enrolling in the workplace, it can be stated that learners and employers perceive the process to be quite easy. This is a testament to the robust framework and coordination role that is fulfilled by the SETA and Training providers. Contrasting views from the literature on this, imply there has been marked improvement in the efficiency of the SETAs and the coordination role played by training providers.

Linked to the finding above is the inconsistent vetting process of potential learners which has resulted in some “unqualified” earners slipping through the cracks and enrolling on a learnership programme they actually do not qualify for. Sentiments by Vally & Motala, (2014) suggest that the vetting process is perceived to be a good selector of talent but that this might not be the case. This view however is supported by examples given by the training provider, of learners who did not have the requisite competencies who end up failing or dropping out of the programme.

Another key outcome from the findings is that learnerships are not perceived by learners, as the preferred pathway post-matric, but rather a backup plan or alternative when students fail to get into university education or find themselves unemployed. In this choice, the value of learnerships is perceived through the employability opportunity and the stipend attached to the learnership. As a result, the work-based learning component and the stipend are perceived to be important and worth the effort

and time of enrolling in a learnership. This leads us into the discussion of the second theme on the perceptions of the applicability of theory to the practical workplace experience.

5.6.3 Applying theory to practice

Views on the applicability of the theory in the workplace, give us insights into how learnerships are perceived to support career growth and meet the skills development needs of the organisation. Some of the learners interviewed had completed a learnership and were now employed, while for others they had continued to be in the same role, therefore it was important to get their perceptions and opinions of what they had gained by pursuing a learnership. In addition, the views of the employer in this aspect allow us to get their perceptions on how learnerships support their skills development needs as an organisation.

There was almost a universal response from participants that the theory taught was applicable in the workplace. Participants suggested that doing hands-on work, brought more understanding and there was a sense of “things coming together and now making sense” as expressed by learners. Similar views were expressed by employers, as they felt that the students were adequately prepared with theoretical concepts to tackle the practical work. Employers did acknowledge that some level of disconnect between theory and practice is expected given the rapid change of technology and ways of working, and this was perceived as healthy.

The findings and perceptions above are consistent with the views of Maclaren & Marshall, (1998), that the gap between theory and practicals in the workplace is closed through knowledge creation which happens during work placement. The merging of theory and work projects is a continuous process, which in itself enhances skill and competency. Klees (2014) supports this view by exposing the short-sightedness of expecting education to supply the skills required, as he posits the development of skill is context dependant, therefore the workplace is supposed to cultivate skill and not just receive skilled people. This view is supported by the assertion of Vally & Motala, (2014) that acquiring skills and knowledge is a social activity and therefore learners should be given space and time to learn.

Employers went further to explain that they believed their involvement and input in the curriculum development process was one of the reasons theory and practice were probably not too disconnected. Though there is merit in the role played by the employer in curriculum development, it's important to be cognisant of not only the rapid change in the workplace but also the delays and long lead times of getting curriculum updated and accredited. Wedekind (2014) further suggests that employers need to realise that they do not have direct control over the curriculum and their interests are mainly on immediate issues that drive productivity, whereas the education system takes a longer-term view of developing wider competence.

Employers and training providers provided some interesting observations on how some learners seemed to struggle with soft skills of timekeeping, communication, etiquette in teamwork, and dealing with pressure. The perception here was that though these concepts were taught in theory, learners are generally found wanting in these competency areas. Kruss et al., (2011) finds these perceptions to be opposed to the nature in which soft skills are acquired. Soft skills are gained and assimilated through interaction with others, therefore it's hardly surprising that these would be missing or lacking at the start of the learnership. This view is supported by Vally & Motala (2014) commenting that generic skills such as a positive can-do attitude are acquired through work-based programmes, in interaction with others and are important as they cut across industries and job types. Augmenting this view, Kruss et al., (2011) found that upon completion, learners were more confident that they had acquired soft skills and rather less sure they had the technical hard skills. This is in line with the view of Hlatshwayo (2014) that technological changes actually deskill most workers while reskilling a small proportion of the workforce. This implies it is actually possible for learners to feel less skilled or unskilled in the technical aspects of their learnership if for example the work they are expected to do has now been automated or mechanised.

The assertion above by Hlatshwayo (2014) concurs with the comments by some learners that they felt there had been no change in their career prospects as a result of completing a learnership. Learners would have enrolled on a learnership expecting a promotion or a change in the role they were doing but evidently, there has not been much success in this aspect for the learners interviewed. It's interesting to note that one learner did indicate having moved to another role. However, the move was facilitated by the previous supervisor and not by the skills they had seemingly acquired on the learnership. The career growth in this instance is supported by the social interactions at work that build networks and communities of trust.

Turning to the perceptions of the employer, even though the organisation would prefer that learnerships support their skills development plans, the reality is that this is not always the case. Contextual realities such as the need to achieve high learner numbers to support BBBEE requirements and implementing learnerships to fulfill social obligations can be in tension with the skills development needs of the organisation. In this study, both employers and training providers alluded to this as the “harsh reality” and “double-edged sword” the company and industry are faced with. This is supported by the findings of Pauw *et al.* (2009) where companies in a similar study on learnership implementation owned up to participating in learnerships to improve their BBBEE levels and benefit from the tax incentive schemes associated with learnership programmes. In the view of the researcher, it's a forgone conclusion that there is a social consideration that informs the support of learnerships. In the communities where corporates like MICT firms operate, there is rampant unemployment and as a corporate citizen, MICT firms have a moral obligation to do what they can to ease the burden of unemployment in communities. However, where feasible there should be an intentional strategy to align learnerships with the broader skills planning of the company.

5.6.4 The role of the mentor

At the core of workplace experience is the ‘learning’ by the student, which happens in the work environment. In this study, all participants comprising learners, experts, and employers alluded to the critical role that the supervisor or line manager plays as the mentor to the student. A number of learners expressed and described their experience at a MICT through the relationship they had with their mentors. It would seem that there is a connection between their view of a MICT firm and their perception of the learnership based on how they experienced the mentor. This perception is in line with the description of Maclaren & Marshall (1998), that work-based learning is a very personal experience and the interaction with the mentor is core to how this experience happens.

Upon entering the workplace for the first time, students expressed being excited and exuding enthusiasm to get started on projects and add value. This energy and eagerness needs to be channelled and managed appropriately. As Maclaren & Marshall (1998) point out the passion and prospect of their relevance can result in students becoming overly ambitious and unrealistic of what can be delivered in the workplace. They, therefore, do need solid support to reasonably plan and execute projects and not self-sabotage. When channelled correctly their learning enthusiasm translates into hard work and creativity that benefits the learner and the organisation. In turn, learners will come to perceive the organisation and the learnership as relevant to their growth and enhance their self-confidence. Equally rewarding, the host organisations will be able to trust learners with bigger projects and responsibilities which further enhances the self-efficacy and ability of learners in the workplace.

In contrast, where the learners did not have a good relationship with the mentor, they felt that the learnership had not added that much value to them and as one training provider expressed “when the relationship with the line manager is not so good, it is common for the learner to drop out or not complete”. This implies that the mentors become a sought of anchor and guide when things get difficult for a new entrant into the workplace. It's safe to assume that the relationship of the mentor is akin to how the learner views and experiences the workplace and the organisation. If a learner feels welcomed by the mentor, it is likely they will perceive the organisation as welcoming as well. This view is supported by sentiments of one learner who expressed that they did not feel they could perform as required in the learnership and had entertained thoughts of dropping out, until they were transferred to another department.

It's understood and substantiated by other studies that supervisors that are unprepared and unwelcoming of learners lead to adverse outcomes for the learners (Hattingh, 2006; HSRC, 2012; Vorwerk, 2014). Students begin to shy away from learning and feel frustrated when supervisors appear busy and impatient with them (Rickard, 2002). One learner in this study expressed how they felt nervous to ask questions and felt that the supervisor did not trust them to get the job done. It can be assumed that out of this experience the learner can question the value of the learnership to help them get experience and skill if they are not given an enabling environment to try and learn. Unintentionally mentors who do not support learners shoot themselves and the organisation in the foot as they not only miss an opportunity to cultivate talent, but they lose an opportunity to learn as well. This view is supported by Feldmann (2016) as he posits that learning is achieved through participating and engaging socially, and it is a two-way process. Maclaren & Marshall (1998) further expound on this by alluding to the mutual benefits of the mentorship relationship as the two parties are immersed in the learning process with each having a stake in a successful outcome. This gives a sense of purpose, accomplishment, and motivation for both the supervisor and the learner.

Hattingh (2006) further adds that the mentor should be a guiding light, and he further suggests that mentors should be actively involved in the design and implementation of learnership programmes. This view is consistent with the comments of training providers, that the supervisor needs to be adequately prepared for the role of mentor and that ideally, it should not just be the mentor supporting the colleague but other colleagues that interact with the learner. This does imply that it can be overwhelming to expect one supervisor to mentor all the learners assigned to them and it also brings to the fore a solution, in cases where a supervisor might be strong in one area and challenged in other.

Discussing this theme has revealed that students' perceptions of career growth and obtaining employment are in part influenced by their relationship with their supervisor or mentor. Learning is personal and happens in the immediate context of the learner therefore their motivation, attitude and self-belief are influenced by the experience they create with the mentor. It has been established that success in the workplace is not just about skills but more and more it's the can-do attitude and self-belief of the learner that enhances their employability in the eyes of the employer.

5.6.5 Absorption of learners' post completion of the learnership

Learnerships were instituted to improve the level of skills in the south African economy as well as enhance the employability of the unemployed to tackle high unemployment. Following from this premise it is not surprising that all participants in the study, candidly framed their main expectations from learnerships as to support employment however there was an acknowledgement of the factors on the ground that result in this expectation not being met in its entirety.

From an employer perspective, it is viewed as "an impossible task to expect a 100% absorption rate or even 50% for that matter". This view was elaborated in the context of an operating environment where the company has to manage costs and do what it can to protect the job security of existing employees without shedding jobs, therefore adding onto existing headcount is not always possible. Married to this is the practicality of the organisation "not needing the skills in such high numbers as learners trained" as stated by one employee. This alludes to the point made earlier with regards to the high number of learners being trained out of a social and moral obligation to play a role in skills development, and not necessarily to absorb the skill. In general, less than 10% of learners supported are absorbed by MICT or the hosting company. This is not unique to MICT but a well-documented phenomenon across all industries.

Learners expressed that they participated in a learnership with the hope of getting a job first and foremost. In some instances, the learners view the learnership as a job due to the stipend they receive for the duration of the learnership. It would appear that skills development is a secondary objective for them, as in some instances learners do not bother completing the qualification upon the realisation that they will not get an offer of employment. This is what Breier (2009) referred to as the uncomfortable reality of learners completing their qualifications but struggling to obtain gainful employment, even in the company they were enrolled for work placement. This reality links back to the question of value and

as McGrath et al., (2004) observed, for a learnership to unlock value it needs to lead to absorption, otherwise as one learner stated, “what’s the point?”.

In addition, there is a perception among learners that obtaining employment is dependent on the area of study of the learnership. Learnership studies in Data analysis and IT support were perceived to award more opportunities for employment compared to Business Administration or Project Management. Now at this point, it’s important to note that this is not particularly the case when considering that some of the learners absorbed at MICT were studying Business Administration and the employer confirmed that they generally supported learners in fields relevant to the organisation. The findings by Pauw et al., (2009) that organisations do not perceive the academic qualification of learnerships to be appropriate for all job types, seems to give credence to the views of the learners however Vally & Motala (2014) counters this thought by asserting that employability is in actual fact driven by generic skills and not technical skills. Taking into account the views and findings above, it would appear the issue of absorption is not a simple discussion as there is more at play concerning supply and demand of skills and how this translates into employment.

At this juncture, our research has come full circle to the state of the labour market today. The effects of apartheid policies on the labour market and the economy cannot be fully addressed by education policies such as learnerships. There is a high degree of believing the impossible and it’s important for research to continue unearthing the stark realities that surround us regarding unemployment. As surmised by Feldman (2016) we do not as yet have a universal way of ascertaining that workplace learning enhances employability. Training needs to happen in conjunction with job creation across all levels of the economy as a starting point to address unemployment.

6. Managerial Implications

In this study, it is revealed that learnerships are not a wasted effort as there is skills development, however the point of departure is the role of learnerships in addressing unemployment and to some extent career growth. The aim of analysing the perceptions of the various stakeholders was to enhance understanding of learnerships as a tool for skills development and tackling unemployment, especially among the youth. Unemployment and skills development are such emotive subjects that participants shared a great deal of information. It was important to keep circling back to the focus and purpose of the study and resist getting lost in the passion of the subject.

Linked to the challenge above was distilling the patterns emerging from data and identifying themes that told a cohesive story on the perceptions of learnership implementation at MICT. This was particularly important as training providers work with multiple organisations and it was key to avoid general remarks and to also make note when a comment was made about the industry in general. The researchers performed cross-analysis of the responses from the different stakeholders and there were no significant incidences of dissent in perceptions based on demographic factors such as age, gender and educational background of the learners. This meant the demographic data collected had no bearing on the analysis and interpretation of findings.

7. Conclusion

The purpose of the case study was to understand learner and employer perspectives of learnership implementation at MICT. In addition, the views of experts and training providers involved in implementation were sought to provide a greater understanding to the case. This study emerged as a result of the continued low conversion rate experienced by learnership programmes and the varied perceptions from stakeholders on how learnerships are implemented. Learnerships were instituted as a policy instrument to address national challenges of a low skills base and high unemployment, especially among the youth. This study was designed as a case study and used qualitative methods of data collection through interviews to enhance our understanding of how learnerships are implemented. The conclusions of the study are based on the themes that emerged from the research questions posed on perceptions of employers and learners on learnership implementation.

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Hedging Climate Change Risks Using Catastrophic Bonds in Southern Africa's Agriculture Sector

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Keywords

Agriculture;
Catastrophic Bonds;
Climate-change;
Disaster-hedging

Abstract

The agriculture sector is one of the key sectors in Southern Africa. However, agricultural production has been highly affected by climate change, threatening food security and business sustainability. Due to underwriting capacity problems, insurers and reinsurers have failed to provide cover for climate change risks. Also, derivatives have failed to provide a reliable option for hedging such risks. Therefore, this paper explores the concept of catastrophic bonds (CAT Bonds) in providing climate change risk finance. By combining money market returns and premiums held in escrow in collateral accounts, CAT Bonds ease disaster-preparedness, disaster risk-reduction, post-recovery initiatives, and sustainable socio-economic agricultural development. Adopting CAT Bonds may assist in coordinating disaster responses, civil and social protection, as well as humanitarian assistance. With respect to agriculture land policies, development, food security, and employment may be enhanced – as well as management policies and disaster risk management frameworks. Well-structured CAT Bonds help ensure sufficient hedge against climate change-triggered risks. Hence, farmers' and agriculture stakeholders' confidence in the viability of the sector can be improved as CAT Bonds provide cover for such risks currently threatening the region. Finally, the paper also discusses how to develop and institutionalise a CAT Bond market, giving agriculture investors another investment option.

1. Introduction

Southern Africa has been known for years as the breadbasket of the African continent. The total agricultural production of South Africa, Zimbabwe, Mozambique, Botswana, and Zambia had been highly significant to the total continental production in past years until the new millennium when climate change moved in (Westermann, 2019). Since 2000, there has been a spat of climate risks in the form of tropical cyclones, droughts, and floods which caused huge agricultural losses beyond the sums insured and insurers' underwriting capacity. Catastrophic (CAT) events have posed significant covariate risks to small and least developed countries (LDCs) (Zimmerman and Carter, 2003:1). The Insurance Information Institute (III) 2019 Report highlighted that the overall losses from worldwide natural catastrophes in 2019 totalled US\$150 billion of which only US\$52 billion losses were insured. The Allianz Risk Barometer 2022 First Quarter (Q1) Report further indicated that according to Swiss Re, the annual insured natural catastrophe losses reached US\$105 billion out of US\$252.1 billion economic losses in 2021, the fourth highest record since 1970.

In the same way, also Southern Africa experienced several catastrophic risks in recent years, leaving devastating effects across the region: The rate of increase in annual natural climate change catastrophe losses is significantly rising and worrisome. Zimbabwe, Mozambique, and Malawi were hit by cyclone Idai in 2019. It claimed at least 1 303 lives, affected more than 3 million others in Zimbabwe and destroyed agricultural production of more than 500 000 ha of crops in Mozambique alone, estimated to be US \$513 million loss (FAO, 2019). In April and May 2022, South Africa's KwaZulu Natal and Eastern Cape provinces were ravaged by floods, claiming 443 lives, leaving approximately

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48 unaccounted for and affecting an estimated 1 386 941 hectares of agricultural cropland (Government of South Africa (GoSA), 2022). Besides this, 4000 houses were destroyed, 8 300 others partially damaged and over 40 000 people displaced by the floods in April alone (European Commission Humanitarian Organisation (ECHO), 2022).

Regular geospatial information for vulnerability and impact assessment in support of climate risk preparedness and response programs take time to be updated. Therefore, all this necessitates the need to find a solution at least to the financial consequences of the climate change risks that are seemingly becoming ubiquitous in Southern Africa. The traditional insurance and risk finance mechanisms are falling short at covering these risks with most insurers undercapitalized to underwrite climate risks, while regional reinsurers have never teamed up to provide cover either. Considering environmental factors such as climate change mitigation and adaptation, preservation of biodiversity, and prevention of pollution, as well as the circular economy, guaranteed future returns are important for many investment decisions, in particular in agriculture. Hence, this paper suggests the use of catastrophic bonds as a concept to hedge against climate risks in Southern Africa.

Financial instruments like derivative contracts in the form of futures and forward contracts, swaps as well as options and option financing have been in use for hedging against risks for a long time (McGuigan, Moyer, Rao & Kretlow, 2012). However, the uncertainty of the time a climate change triggered risk may occur, coupled with its frequency, makes put options, swaps, or futures contract difficult to use. If one party to the contract fails during the period of catastrophic risks, it becomes difficult to finance the risk. This leaves a lot of catastrophic risks difficult to be hedged using derivatives, leaving the government exposed to providing support during and post-disaster periods. Derivatives are not commonly used in Southern Africa which leaves insurance as the most popular risk financing mechanism in the agriculture sector. The challenge of insurance is that it covers general risks, but most policies exclude climate change risks such as tropical cyclones, floods, strong winds, hurricanes, tsunamis, tornados, and so on (Weber, Fecke, Möller & Musshoff, 2015). This is because most of the insurers lack underwriting capacity for high severity risks such as climate change triggered agricultural risks. However, the shortcomings of the use of derivatives and insurance need to be addressed urgently in Southern Africa considering the rate at which the region is experiencing climate change risks for the past three to five years.

2. Problem Investigated

Hedging against agricultural risks and hard times, regardless of the magnitude and severity, in Southern Africa, has commonly relied on a mix of instruments which may include insurance, derivatives, investments into mitigation, and government bailouts. Risk transfer mechanisms to an insurance company in expectation of indemnity is falling short as climate change is triggering high severity risks such as tropical cyclones, floods, and strong winds which are leaving trails of destruction beyond the underwriting capacity of insurers, co-insurers, and reinsurers. The resulting agriculture risks threaten crops, livestock, property, and equipment as well as human life. Should a climate change catastrophic risk strike, insurers' premium pools will be eroded, leaving the insurers with no other option than to close their doors. Hence, while, on the one hand, there are some overambitious insurers and reinsurers who try to develop insurance cover for these risks, on the other hand, their balance sheets scare them from accepting catastrophic risk business, especially in the agriculture sector. Therefore, many of these financial players end up rejecting to insure climatic change-triggered risks.

Alternatively, derivatives such as options and option financing, futures, and forward contracts as well as swaps have been in use to hedge against non-catastrophic agriculture risks. However, employing derivatives to hedge climate change risks is highly risky because of the hazards of trading these financial instruments over the counter with individual financial institutions and the lack of standard regulation in trading and clearing contracts, which makes it difficult to get the contracts fulfilled when a party to the contract fails (McGuigan et. al, 2012). Therefore, "normal" derivatives are far from being ideal when it comes to insuring agriculture against catastrophic risks triggered by climate change.

Due to this increased exposure, the interdependence between the Southern African Development Community in boosting agricultural reserves is under severe threat from climate change risks. While the current method(s) used to manage climate risks in the agricultural sector as insurance and property or commodity hedging may have proved to work in the past, due to low underwriting capacities, they are falling short to match the magnitude of loss or damage caused by catastrophic risks. Therefore, urgent adaptation to climate change and the risks it triggers has become a necessity rather than a want. For this purpose, this paper intends to propose the concept of using catastrophic bonds to hedge against climate change risks in Southern Africa's agriculture sector.

3. Research Objectives

The paper seeks to achieve the following objectives:

- propose the adoption of catastrophic bonds (CAT Bonds) as a new way of financing climate change risks in Southern Africa's agriculture sector
- demonstrate the establishment and institutionalization of a CAT Bond market for agricultural risks in Southern Africa
- show the managerial implications of using CAT Bonds over other agricultural risk hedging techniques in Southern Africa

4. Research Methodology,

The research is carried out as a desktop study. By reviewing the literature on catastrophic bonds, it tries to examine whether adopting them may be a way to finance and hedge climate change risks for the agricultural sector in Southern Africa.

5. Literature Review

Literature on the use of catastrophic bonds (CAT Bonds) in various Southern Africa economic sectors including agriculture, is still in its infancy. The recent increased climate change risks affecting the agriculture sector requires new risk hedging strategies as traditional insurance is failing to cope with the huge financial risks resulting from climate change. Hence, by reviewing the literature on catastrophic bonds, it shall be examined whether adopting CAT Bonds may assist in financing these risks for the agricultural sector in Southern Africa.

5.1 Adopting Catastrophic Bonds (CAT Bonds) in Financing Climate Change Risks for the Agricultural Sector in Southern Africa

In this paper, we investigate the concept of hedging climate change risks using catastrophic bonds (CAT Bonds) in Southern Africa's agricultural sector. Well-structured CAT Bonds can mitigate climate change induced agriculture risks which insurance and hedge instruments like derivatives cannot finance (Miranda and Farrin, 2012; Weber, Fecke, Möller & Musshoff, 2015). Kirk & Pieterse (2019), in their closely related exploratory study on the viability of pandemic CAT Bonds in South Africa, recommended the use of CAT Bonds to reduce insurers' and governments' exposure during catastrophic events like the pandemics. Drifting from the use of insurance and derivatives in hedging catastrophic events like climate change risks in the agriculture sector to the adoption of catastrophic bonds can be done using the disaster risk management cycle. CAT Bonds are high-yield debt instruments designed to raise funds for governments or companies in the insurance industry in times of natural disasters by allowing issuers to receive funding from the bond only if specific conditions such as floods, cyclones, tornados, or earthquakes occur (Cummins & Weiss, 2009).

Different from normal bonds and derivatives, CAT Bonds are insurance linked securities (ILS). They are used as a method of transferring insurance risk to capital markets where their proceeds are invested in nearly risk-free to risk-free assets. In this way, they often generate money market returns and complement the insurer's premium, thereby solving underwriting capacity issues. This allows the CAT Bond to pay a quarterly coupon to the investor with usually a substantial spread above market returns for bonds with equivalent ratings as investors "appear to earn both a liquidity and a 'novelty' premium for taking insurance risk" (Risk Management Solutions, 2012:6-7). In order to do so, this

requires a sponsoring/ceding insurer to establish a special purpose vehicle (SPV) as explained by employing figure 1 below:

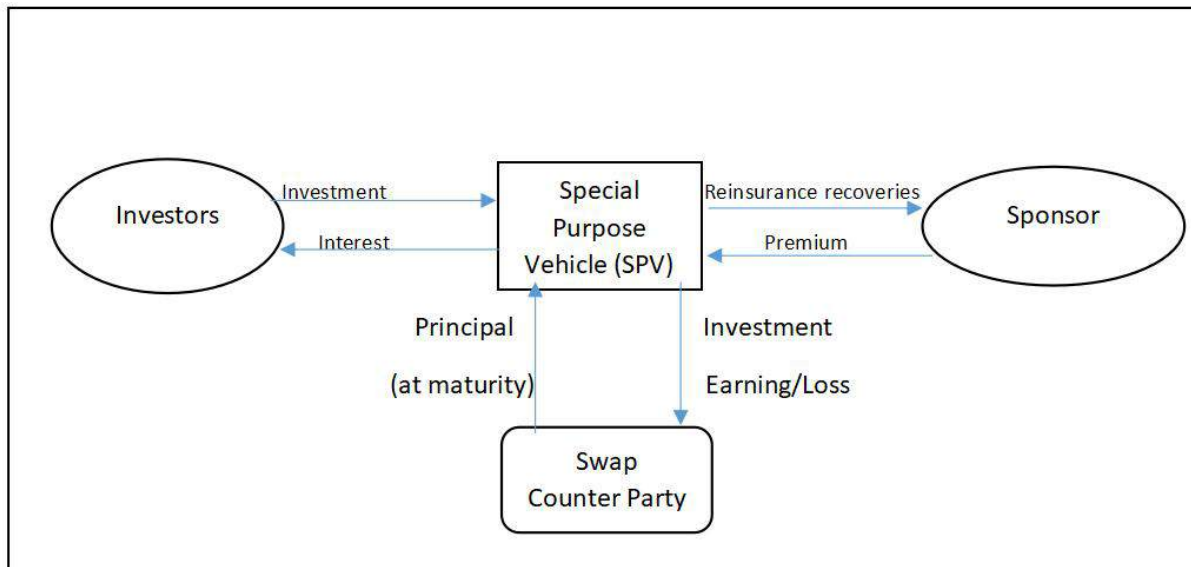


Figure 1: Flow of CAT Bond finances/Structure of a CAT Bond transaction (White and Gambrill, 2020)

This SPV would create a reinsurance agreement with the sponsoring/ceding insurer in a tax efficient jurisdiction. It will also issue a note to investors with default provisions that mirror the terms of the reinsurance agreement, containing trigger events. The funds generated from the sale of the note are managed in a separate collateral account where they generate money market returns which consolidate the insurer’s premiums to cover the agriculture risk/triggered event. Part of the investment funds kept in the collateral account by the SPV can be invested in short-term financial instruments like Treasury Bills (TBs) and Bankers Acceptances (BAs) held by a SWAP counterparty which generates quicker money market returns. These money market returns can help the SPV in paying the agriculture CAT Bond speculative investors’ coupon as well as contributing to reinsurance recoveries requested by the sponsor. The trigger mechanisms need to be balanced to accommodate preferences of the sponsor and the investor. The use of CAT Bonds in hedging against climate change risks in agriculture sector can be done following the Disaster Risk Management (DRM) cycle to determine the stage requiring financing and trigger points.

Reinforcing the Disaster Risk Management (DRM) cycle which shows possible responses to agriculture risks which can be implemented at any stage during post-climate disaster recovery and development can be more effective by use of CAT Bonds. CAT Bonds provide a proactive risk preparedness, response, and post-recovery concept necessary for effective agricultural production projects and programs as shown on Figure 2 below.

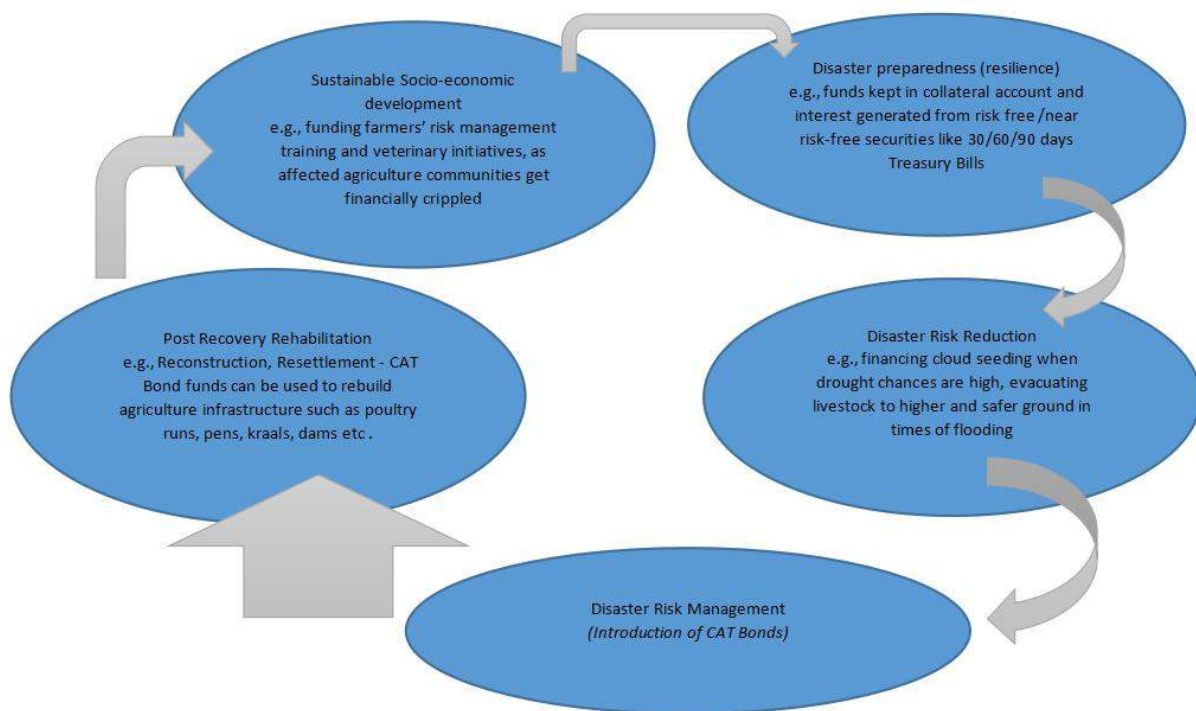


Figure 2: Disaster Risk Management (DRM) Concepts/Cycle – Adapted from Westermann (2019).

Given the above concept for disaster risk management, the adoption of catastrophic bonds (CAT Bonds) can stimulate every stage of the DRM concept, so that climate change risks in Southern Africa’s agricultural sector can be proactively managed: Funds generated from CAT Bond subscriptions’ investment allow for reinforced disaster preparedness as well as the implementation of risk reduction techniques – and by that incentivize production. The post-disaster recovery, rehabilitation, and reconstruction will become much easier since funds generated from investors’ principal amounts may be channeled to the affected farmers and communities, putting them into the same pecuniary positions as before the agricultural loss. Therefore, instead of relying on their own underwriting capacity, the insurers/reinsurers will collect these funds from the special purpose vehicle’s (SPV’s) collateral account as per the underwritten terms of the agriculture CAT Bond (Van Wyk, 2021).

In order to make the CAT Bond attractive to become a tool to cover agricultural risks, the trigger mechanisms for the payout of the bond need to be balanced to accommodate preferences of the sponsor and the investor. Continuing the thought mentioned in the previous paragraph, a trigger may specify for example that the payout from an Agriculture flood CAT Bond is based on actual losses to the sponsor (who will then use the money to pay e.g., the farmers). This will make the Agricultural CAT Bond attractive to the insurer, who do not need to have the underwriting capacity, as well as to the farmers, who are threatened by existential risks from climate change and will value the elimination of basis risk, allowing them to continue with his beneficial agricultural activities without worrying too much about circumstances he cannot influence. “Basis risk” in this context means the difference between the insurers’ (as the sponsor) / farmers’ losses on the one side and the CAT Bond’s payout on the other side when an insured agriculture risk triggers (White & Gambrell, 2020). In determining the trigger types and protection levels through an iterative process with the sponsors (to cover the farmers), a structuring agent may assist. Employing an iterative process makes this concept being adaptable to requirement changes throughout the development of the agriculture CAT Bond’s protection level and trigger types. On this basis and depending on the kind of trigger, an Agric CAT Bond can then be designed in four different ways:

- Indemnity triggers make agriculture loss recoveries based on the sponsors’/farmers’ actual loss exposure.

- Normal loss triggers involve recreating actual climate change event parameters such as floods, tropical cyclones, hail, drought, etc. into the catastrophe model. These shall help to estimate the financial impact on the portfolio of exposure that was originally used in the estimation of the CAT Bond's risk (regardless of whether the portfolio is similar or not to the sponsor's actual exposure).
- Industry loss index triggers are based on actual agricultural losses to the entire insurance industry.
- Parametric triggers are based on objective physical characteristics of the agriculture risk.
- Hybrid triggers are a combination of several of the aforementioned triggers and are used in the issuance of hybrid agriculture CAT Bonds. Hence, they are most suitable for a wide coverage of various climate change risks affecting the agriculture sector – a characteristic that helps in providing cover for most of the risks excluded from insurance policies and other hedging options.³

On this basis, an Agriculture CAT Bond can be customized to have different event parameters such as flood, cyclone, wind, hail, and drought being covered. Applying the different triggers introduced above, this may lead to the following modelling as in Table 1 below:

Table 1: Authors' Model of Agric CAT Bond trigger level structuring for Climate Change Risks

Type of Agric CAT Bond	Triggers & Event Parameters	Level (examples)
(i) Flood CAT Bond	Indemnity trigger (e.g. CAT event parameter - Flood)	*Min Destruction of 300 ha of crops or min destruction cost of R50 million whichever happens first and damage in KwaZulu Natal (KZN) capital, South Africa, from 11 April – 01 May 2022; *Death or bodily injuries to livestock of at least R15 million within 1 week of flooding in KZN; *Agric Equipment & Property Damage of at least R20 million within a week of flooding in KZN.
(ii) Cyclone CAT Bond	Parametric trigger (e.g. CAT event parameter - Cyclone)	*Min of 200mm rainfall, min destruction of R15 million within radius from 50km radius of Chimanimani, Zimbabwe; or *Livestock deaths of minimum R6 million in farms surrounding Eastern Cape's Cradock town
(iii) Wind/Hurricane CAT Bond	Industry Loss trigger (e.g. CAT event parameter - Wind/Hurricane)	Minimum windspeed of 90 knots causing an aggregate loss of at least R200 million
(iv) Hail CAT Bond	Indemnity trigger (e.g. CAT event parameter – Hail)	Leaf crop or fruit/tuber damage of at least R7.5 million in Gauteng between 01-15 June 2022.
(v) Drought CAT Bond	Normal Loss Trigger (e.g. normal loss parameter – Drought in low rainfall regions/provinces)	Annual drought induced agriculture loss in predetermined low rainfall areas of a minimum of R10 million
(vi) All-Risks CAT Bond (Hybrid Agriculture CAT Bond)	Can be a hybrid trigger (combination of parametric, indemnity and industry loss triggers depending on stated CAT risks) Any climate risk affecting Agriculture Hurricane, Drought, Cyclone, Flood, Hail etc	Minimum destruction on crops, livestock, farm equipment & property of +R450 million

To establish trigger levels for event parameters as mentioned in Table 1 above, a calculation that combines all parameter readings/recordings is done. This requires that the recordings relate to the CAT event covered by the bond. Then, an index formula may help to solve the confusion arising in determining whether a CAT Bond has been triggered by a CAT event or not. Therefore, at the issuance of the agriculture risk CAT Bond, the structuring agent will define weights w_i for each of the CAT event parameter levels ρ_i :

w_i : Predefined weights in relation to the distribution of the sponsor's exposure

³ It should be mentioned that the characterization as "hybrid" is ambiguous since literature also uses this attribute to describe a CAT Bond that is combined with a financial derivative to protect the bond against volatility in the collateral. For example, Barriou & Louberge (2009:547) propose to combine "the transfer of cat risk with protection against a stock market crash", employing simultaneously zero-premium digital calls and puts from the index options markets.

ρ_i : Agriculture CAT event parameter (Flood, cyclone, hail or wind, etc.) measurement at each of x recording stations

Using the Index Formula: $I = f(w, \rho)$,

the index value calculated can then be compared to the pre-defined trigger level I_{Tresh} . If the index is above the predefined trigger level I_{Tresh} (seen as a threshold), then the agriculture CAT Bond is triggered. If it is even beyond the exhaustion threshold I_{Exh} , the CAT Bond is exhausted, and the investors lose the invested principal completely.

5.2. Establishment and institutionalization of a CAT Bond Market for agricultural risks in Southern Africa

5.2.1. The idea of setting up a CAT Bond Market for agricultural risks in Southern Africa

The stakeholders for the CAT Bond market are sponsors, speculative investors, and regulating authorities, i.e., in this case the Financial Sector Conduct Authority (FSCA) and JSE Debt Market in South Africa. In principle, an Agriculture CAT Bond can be structured in the same way as a reinsurance contract. An Agriculture CAT Bond contract is needed; it will also insulate the bond from coupon and currency (rand) fluctuations. Cumulative principal amounts invested into the agriculture CAT Bond and premiums from the sponsor(s) are kept in a collateral account by the SPV, which may invest a part of the funds on the money market to generate short-term returns. Effectively, the SPV becomes a fully collateralized reinsurer with the sponsor(s) as its only client(s), and it is financed by proceeds from the Agriculture CAT Bond subscribers (investors) (White & Gambrell, 2020). Already this similarity may give an indication, that existing agriculture normal loss insurers and reinsurers have a huge role to play in the setting up of the agriculture CAT Bond market:

Obviously, the reinsuring SPV will not be bankrupted by any other catastrophic event than the contractually specified agriculture climate change triggered risks. This gives existing insurers and reinsurers the ability to enhance their underwriting capacity by issuing the CAT Bonds – hereby creating an agriculture CAT Bond market. Alternatively, insurers and reinsurers may issue CAT Bonds on behalf of government or local municipalities to cover national or provincial climate change risks for their agriculture sector. This phase will be the piloting stage.

After the assessment of the CAT Bond's success, the government, through the respective agriculture ministry and agents, can design an appropriate statutory instrument to launch a Catastrophic Risk Exchange (CARTEX) for climate change risks. This will allow the trading of Agriculture CAT Bonds not only by the use of SPVs, but also on an active secondary market. There, the CAT Bonds may be offered publicly, and speculative investors can bid for them, thereby raising capital to finance climate change risks in the agriculture sector. The concept of such a CARTEX may follow the one used to establish a “normal” stock exchange such as the Johannesburg Stock Exchange (JSE); private players may be incorporated by means of a public private partnership (PPP).

The advantage of using the CARTEX include, inter alia, the ease of generating several intermediaries support who will bring buyers and sellers together while concurrently availing indicative bid and offer spreads on all traded CAT Bonds (Risk Management Solutions, 2012). Instead of struggling to seek reinsurance, which – in the wake of climate change triggered agriculture risks – may need extra protection from retrocessionaires, a proper institutionalized market for CAT Bonds provides an easier and safer option. In addition, the development of a climate linked index (CIX), that may be used to structure agriculture CAT Bonds, would provide a further mechanism to secure capital market financing at the CARTEX.

Once, such a market is set up is made, the agriculture CAT Bonds can be extended to the Southern African region at various levels. In the end, the concept of a CARTEX market would allow for the exchange climate change risks with other countries within or outside Southern Africa.

The adoption of CAT Bonds in Southern Africa's agriculture sector can be done using various alternatives, possibly starting on small jurisdictions to observe their feasibility ahead of regional roll-out.

5.2.2 Alternative Ways for setting up a CAT Bond Market for agricultural risks in Southern Africa

Catastrophic bonds have never been used in Southern Africa, but the concept has been in use in Europe and America (Steve, 2019; Van Wyk, 2021). Transferring it to Southern Africa, in principle, the hedging of climate change risks using CAT Bonds can be done at provincial, country/national, and regional level with an option of introducing hybrid (all-risks) trigger binds in future.

(i) Provincial Level Agricultural CAT Bonds

CAT Bonds can be designed to cover provincial climate change related agriculture risks. In this case, the sponsoring insurers can work with municipalities to ensure that climate risks that threaten their jurisdiction are hedged against. Parametric CAT Bonds are more suitable for this category. For example, Limpopo province can design its own parametric bond against event parameters such as floods that may come through the overflow of the Limpopo River. Another example can be of Mozambique's Cabo Delgado province designing a cyclone parametric to cover farming activities in the province as the area has experienced consecutive climate change risks in the past 3 years such as Cyclone Idai 2019, Tropical Storm Chalane 2020-2021, and Tropical Storm Ana 2022 (Government of Mozambique (GoM), 2022).

(ii) Country-level Agricultural CAT Bonds

Since most of Southern African countries rely on agriculture industry for food security (FAO, 2019), country-specific agriculture CAT Bonds may provide sufficient protection to guarantee highest agricultural production. In this case industry loss agriculture CAT Bonds may work best as they guarantee increased cover because the entire insurance industry is aligned to the sponsoring company's portfolio (RMS, 2012). In some cases, indemnity CAT Bonds can also work. The country can establish a secondary market where indicative bid and offer spreads on all traded CAT Bonds can be provided and deals can be on a matched trade basis.

(iii) Regional Level Agricultural CAT Bonds

Agriculture risks can also be regional, for example, the Southern Africa Development Community (SADC), may be affected by a climate change CAT risk/event at the same time. The effects of climate change may affect more than one country's agricultural output. This, therefore, affects trade significantly among the countries and also stifles bilateral relations. The adoption of CAT Bonds as a new concept leverages the stability and growth of the agriculture sector regionally as all the effects of climate change are hedged against as long as the agriculture risk CAT Bond receives sufficient subscribing investors. Indemnity CAT Bonds and Industry Loss CAT Bonds are much more suitable for hedging regional climate change risk as Parametric CAT Bonds may be affected by geographical location and territorial trigger limits.

(iv) All Risks Agricultural CAT Bonds

Another option would be to issue an All-risks or Hybrid Agriculture CAT Bond. This will allow all climatic and non-climatic agricultural risks to be covered if they are triggered. This type of CAT Bond however has disadvantages in attracting speculative investors because, increasing with the number of triggers, the risk of losing a part or even all of the investment principal are very high. However, it still depends on the CAT Bond's indenture: if professional underwriting skills are used in designing the terms and conditions, even an all-risks CAT Bond may work in achieving sustainability in financing agriculture in Southern Africa.

Finally, as a variant, CAT Bonds may also be modified in a way that the SPV is given the opportunity not only to invest into more or less risk-free investments, but also into the stock market. This would bring in the advantages of diversification as stock market returns can be generated to consolidate the value of the funds held by the SPV in the collateral account. By doing so, CAT Bonds can offer

higher coverage and higher coupons to investors. To protect not only against the climate change risks, but also against the additional risks coming from such investments in non-risk-free assets (but also against movements in the interest rates in case of the short-term financial investments), one may further think about the combination with financial derivatives.

5.3. Practical Usage of CAT Bonds in the South African Agriculture Market

Considering the importance of the agriculture sector to the economy in Southern Africa as well as the high severity of climate change risks, CAT Bonds can contribute to restoring confidence, and ensure capabilities in the agricultural sector, hence, increase production. The government may work together with insurers and reinsurers to establish SPVs, thereby assisting to achieve sustainable civil protection for all farmers and reducing pressure on the different role players (including government itself) during climate change disasters. By involving the different role players, CAT Bonds may assist in

- managing agriculture risks (as the earlier described flood and drought risks) through enhanced disaster preparedness and reduction techniques such as holding pooled funds in escrow, financing cloud seeding initiatives and urgent evacuation of livestock to higher/safer places during flooding and help as well as
- recovery and rehabilitation after a catastrophic event.

Furthermore, while agriculture insurers and reinsurers in South Africa may use CAT Bonds as an extension of reinsurance protection (increasing their underwriting capacity), on the other hand, CAT Bonds provide for interest/coupon payments to investors from investment earnings in the SWAP counter party.

5.4. Example: Structuring an Agriculture CAT Bond Transaction to Hedge against a Tropical Cyclone and Flooding Risk

Having discussed the different types of (structuring) CAT Bonds and how they might be used in Southern Africa, the following shall exemplify the usage of a catastrophic bond in hedging against a tropical cyclone and flooding risk at South Africa's Indian Ocean coast:

The South African Civil Protection Department may need to hedge against the flood risk in KwaZulu Natal. The Coast Municipality, as the issuer, may issue a Flood Catastrophic (CAT) Bond to the tune of R200 million, with a coupon rate of 14% for the 3 years from 01 December 2022 to 30 November 2025. This coupon rate may constitute the money market interest rate ($x\%$), insurance premium ($y\%$), and (small) risk adjustment ($z\%$). The risk adjustment will be small because the insurance premium ($y\%$) is already factored in separately, which may make the risk adjustment small or even nil. The whole coupon rate may be found as follows:

$$\begin{aligned} \text{Coupon rate} &= \text{Money market rate} + \text{Insurance premium} + \text{small risk adjustment} \\ \text{Suppose, money market rate} &= 9\%; \text{insurance premium} = 3\%; \text{small risk adj} = 2\% \\ \text{Then, Coupon rate}_{14\%} &= x\% + y\% + z\% = 9\% + 3\% + 2\% = 14\% \end{aligned}$$

Investors or sponsors will then subscribe to the bond by paying funds to the Coast Municipality before the commencement of the CAT Bond duration on 01 December 2022. These funds will be held in escrow in a secure collateral account either until the risk is triggered or until the maturity of the CAT Bond on 30 November 2025.

The structuring of the CAT Bond may specify:

- a. The investors buy the bond for R200 million on 01 December 2022. For reason of simplicity, it shall be assumed that:
 - the index $I = f(w, \rho)$ be expressed just in the monetary damage in Rand, and
 - the predefined trigger level is set at $I_{\text{Tresh}} = \text{R}10$ million.

- b. In case a flood occurs, the damage according to the index value I will be compared to the predefined trigger level I_{Tresh} :
- 1 If damage $I < I_{Tresh} = R10$ million, the Coast Municipality will pay for the damage alone, and the investors will not lose anything.
 - 2 If damage $I_{Exh} = R210$ million $\geq I \geq I_{Tresh} = R10$ million, the CAT Bond is triggered, and the investors will lose from their invested principal of R200 million the portion that is needed to finance the R10 million exceeding part for the Coast Municipality.

Obviously, as long as the invested principal of R200 million is not completely exhausted, the CAT Bond can be triggered more than once, but the maximum total loss to the investors is capped by their invested principal of R200 million.

- 3 If damage $I \geq I_{Exh} = R210$ million, CAT Bond is exhausted and the investors will lose their invested principal of R200 million completely. The Coast Municipality will receive these R200 million quasi as an insured amount.
- c. As long as the flood risk is not triggered, the Coast Municipality will pay to the investors R28 million on 30 November of each year until 30 November 2025. The R28 million will comprise of money market return 9% = R18 million, insurance premium 3% = R6 million and small risk adjustment 2% = R4 million. At maturity, i.e. on 30 November 2025, the investors will also receive their invested principal of R200 million back.
- d. In case b2 (CAT Bond is triggered, but not exhausted), the investors still get the interests and the payback according to c, but relative to the remaining capital after having paid out to the Coast Municipality.

Hence, as long as it is not triggered, the CAT Bond is very similar to any other bonds as the investors render a credit to the Coast Municipality (in this case of R200 million) and receive interest and paybacks at pre-defined dates. However, once it is triggered, the CAT Bond serves as an insurance for the Municipality, that allows it to cover the R10 million exceeding amount up to R210 million. With this money it can finance the exceeding damages caused by the flood risk such as evacuation costs, temporary shelter provision, food, renovation or reconstruction/replacement costs, etc., with any remaining funds being returned to the investor(s) at maturity.

6. Managerial Implications

Adopting CAT Bonds has several managerial implications for all the possible players for such a contract:

1. Insurers may increase their underwriting capacities.
2. (Speculative) investors may receive higher returns than from other bonds.
3. Farmers and agricultural managers can plan proactively for climate change induced risks. Management policies can be informed by this concept and disaster risk management frameworks stand to be guided by this policy especially on areas farmers struggle to get protection due to insurers' incapacitation. Therefore, the concept can be useful in achieving sustainable agriculture production despite the effects of climate change.
4. The gained safety for production contributes to increased contribution of the agriculture sector to the Gross Domestic Production (GDP), food security and employing security in Southern African countries.
5. The government may profit from easier coordinating disaster preparedness and reduction programs.

In particular, CAT Bonds can be structured for specific climate change risks affecting the agricultural sector. This makes it easier for managers to identify triggers and event parameters as well as setting trigger levels that enable effective hedging against climate change risks in agriculture. Thus, CAT Bonds can be designed, pretested, and adjusted to suit specific climate change risks in specific

physical farming areas and agriculture branches such as crop husbandry, animal husbandry, horticulture, aquaculture etc.

7. Conclusion

Given that agricultural production in Southern Africa has experienced significant shocks from climate change risks, the adoption of catastrophic bonds (CAT Bonds) provides a guarantee that climate risks beyond insurers/reinsurers' underwriting capacity will be financed as the capital market returns consolidate insurers' premiums to fund the agriculture CAT risks. Thus, the underwriting capacities of insurers will no longer be threatened by the magnitude and severity of climate risks as CAT Bonds transfer risks to investors. The capital raised by issuing agriculture CAT Bonds lower insurers', governments', municipalities', or other issuers' out-of-pocket costs for natural disaster coverage. This means that CAT Bonds make it easier to raise capital for climate risks. They may even attract speculative investors as they provide higher coupon rates than other fixed-income securities depending on how they have been structured.

Climate change disaster risk management in the agriculture sector can be significantly enhanced by the use of such bonds as they help to be prepared for a possible disaster and allow for both proactive and reactive risk reduction as well as spearheading sustainable socio-economic development. In doing so, farmers' climate change risk management initiatives may be funded to help boost productivity and ensure a sustainable contribution to the Gross Domestic Product in Southern African countries. Therefore, adopting CAT Bonds in the Southern Africa's agriculture sector may assist in addressing capacity and policy gaps around coordinating disaster responses, civil and social protection, humanitarian assistance, agriculture development, management, and sustainability, as well as land policies.

The setting up of a CAT Bond Market for agricultural risks in Southern Africa can bring together all the stakeholders such as sponsors, speculative investors and regulating authorities together for the smooth flow of CAT Bond finances. Considering the rate of climate change and its shocks witnessed in Southern Africa's agriculture sector, the adoption of CAT Bond financing may help ensure productivity, food security and employment.

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Synthetic Measure of Socio-Economic Development for African Countries

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Keywords

Comparative studies;
Synthetic measures of
development;
Taxonomic distance;
African countries

Abstract

Socio-economic development is a complex process that cannot be described by a single characteristic and must be considered in multidimensional terms. Therefore, for the purpose of comparative studies, various indicators are applied that take this complexity into account. Good examples of such measures are the Human Development or Poverty Indexes evaluated by the UN. They are global in nature, which implies their low sensitivity (and therefore their usefulness) when comparing objects of the same class or objects characterized by similar levels of diagnostic characteristics, which is typical for regional comparisons. Thus, our objective is to construct measures of socioeconomic development for African countries and examine its applicability. Various aspects of quality of life and level of development were considered: (1) human security, (2) population trends, (3) health outcomes, (4) educational achievements, (5) national income and resource structure, (6) labor and employment, (7) mobility of people and capital. The proposed measures were constructed using taxonomic distance between an object and a benchmark (real or hypothetical). Based on the evaluated measures, African countries were clustered into homogeneous classes. The applicability of the proposed approach for comparing the socio-economic development of African countries has been confirmed.

1. Introduction

Socio-economic development and its examination are crucial issues for economies at any scale - of the globe, continents, regions or states, their administrative units and unions. And even though economic aspects come to the fore in the research on transformation in the economy, they cannot be isolated from social aspects and the mutually causal role of these factors. Socio-economic progress is made up of processes caused by both internal and external factors which determine the course and direction of the development. These processes do not work in isolation from other actions, and they are usually preceded by, or are consequences of, other processes. The course and direction of the socio-economic development depends on the set of conditions also caused by a concrete historical and geographical situation in which socio-economic changes take place (Chojnicki, 2010).

Therefore, socio-economic development cannot be described by one characteristic since it is a complex process which requires to be considered as a multidimensional issue. Different organizations, e.g., the World Bank, the United Nations, the Mo Ibrahim Foundation, etc., construct special indicators that take into account these complexities and enable comparisons between countries and regions. A good example of such a measure is the Human Development Index (HDI) which is evaluated by the UN and widely used to rate and compare the level of development of countries

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around the world⁴. It based on a multidimensional analysis of three fundamental components of human development: (1) healthy life expectancy, (2) education, and (3) a decent standard of living (Roser, 2014). However, global indicators tend to have limited applicability due to the wide range of countries that are considered in the process of estimating these measures. This is because if a group of countries from a particular region or similar (to some extent) countries are compared, these indicators are not sensitive enough to indicate the differences between the analysed objects.

Africa is the second largest (30 million km²) and most populous (1.3 billion people) continent, consisting of 54 sovereign states. African population is the youngest amongst all the continents – the minimum median age among all African states is 15.2 and maximal 37.5 years. In terms of socioeconomic development as measured by the HDI index in global scale, only one African state (Mauritius) is recognized as a state with very high human development, eight countries are classified to the class of high human development, fourteen to the medium human development class, and the rest (i.e., 31 states) is recognized as low human development countries. The question arises as to whether such a classification reflects well the relationship between African countries in terms of socio-economic development.

Thus, the purpose of presented research is (1) to construct synthetic measures of human development addressed to African countries and (2) to verify their applicability by

- (2a) comparing rankings of countries based on the constructed taxonomic measures, and
- (2b) examining the sensitivity of these taxonomic measures to changes in the weights describing the variability in the strength of selected aspects of socio-economic development.

Research is provided using so-called taxonomic distance measures. Selection of countries and considered phenomena are associated with data availability for the year 2019 which is the last year before pandemic.

2. Popular indicators for comparing the level of development of African countries

The standard of living in different countries cannot be measured and compared directly. Thus, interchangeably, available development indicators are used. The basic measures used in comparative studies are Gross Domestic Product per capita and/or Gross National Income per capita, which provide general information about the value of all goods and services produced in a region (usually per year), averaged per person. These *par excellence* economic indicators do not include characteristics from the field of social and economic well-being, such as human health and its protection, the environment and sustainable development, education, human rights, security, equality, the position of women in society, etc. That is why other, more advanced metrics like the Human Developed Index, which additionally includes some aspects of life and education, are being reached.

To compare the assessment of African countries made using GNI (or GDP) per capita and HDI, all countries are grouped into homogeneous classes based on both measures. Assuming that the overall measure of development of the i -th country in the t -th year is denoted by SMR_{it} , which either is GNI per capita or HDI (of the i -th country in the t -th year), the homogenous classes of development are constructed as following (Kompa & Witkowska, 2009; 2010):

- I – very high level of development for $SMR_{it} \geq SMR_t + S_{SMR_t}$;
 - II – high level of development for $SMR_t + S_{SMR_t} > SMR_{it} \geq SMR_t$;
 - III – average level of development for $SMR_t > SMR_{it} \geq SMR_t - S_{SMR_t}$;
 - IV – low level of development for $SMR_{it} < SMR_t - S_{SMR_t}$,
- (1)

⁴ The UN Development Programme also provides other multidimensional composite indices, such as Multidimensional Poverty Index (MPI), Inequality-adjusted Human Development Index (IHDI), Gender Inequality Index (GII) or Gender Development Index (GDI) among others (Composite Indices, 2022)

where $i=1, 2, \dots, N$, N denotes count of compared countries, while SMR_t and S_{SMR_t} – average value and standard deviation of measures of development calculated for all countries, respectively, i.e.:

$$SMR_t = \frac{1}{N} \sum_{i=1}^N SMR_{it} \quad (2)$$

$$S_{SMR_t} = \sqrt{\frac{1}{N} \sum_{i=1}^N (SMR_{it} - SMR_t)^2} \quad (3)$$

Applying the above methodologies to comparisons of the level of development of African countries leads to the conclusion that the evaluation of the standard of living in African countries strongly depends on the measure used, the dispersion of the classification is large and fundamentally different for both classifications. These conclusions arise from the summaries presented in Table A1 and Table A2 in Appendix 1.

Table A1 contains ratings of African countries according to GNI per capita and HDI in 2019. The first place in ranking means the best position. There are only three distinguished classes in classification provided due to GNI. It is visible that the dispersion is bigger for GNI per capita clustering (102%) than for HDI (19% with a flat volatility coefficient in each class). There are 10 states in the first class, and nine of them are recognized as very high developed countries by both measures. Only Morocco and Equatorial Guinea are classified to this class only by one measure. The second class contains 12 countries according to HDI and only 6 of them due to GNI per capita. Among states being classified to the second class, Cabo Verde, Namibia, Eswatini and Angola are recognized as the members of this class by both measures. One may also notice that among African states, Mauritius and Seychelles are outliers if GNI per capita is considered. It is also visible that there are four countries i.e., South Africa, Egypt, Gambia, and Central African Republic, which keep the same position in both rankings.

The biggest differences in positions are observed (Table A2) for Djibouti for which the difference in both rankings equals 17 positions, for Eritrea, Mali, and Sudan for which these differences are 13 places (better position due to GNI than to HDI) together with Madagascar and Uganda which are higher ranked according to HDI than to GNI per capita by 14 places. Further analysis of Table A2 also leads to the application-useful conclusion that countries with a positive classification gap are growing faster in economic terms than in socio-economic terms, and vice versa.

3. Concurrent methodology applied for African countries comparisons

Socio-economic indicators should cover many areas of life. Among them, researchers usually name: social inequality, employment, income and consumption, environment, public safety and crime, health, education, social and political participation, etc. The process of selecting a set of indicators for each of these life domains involves several steps, consisting in the choice of objects and diagnostic variables (i.e., measurement dimensions) and in data collecting, see the following research (Avdiushchenko & Zajac, 2019; Kompa & Witkowska, 2009, 2010, 2021; Khan, 1991; Nermend, 2010; Noll, 2002, 2014a, 2014b; Mo Ibrahim Foundation, 2018, 2019; Singh, 2015; Udjo, Orkin, et al, 2000; and Udjo, Simelane, et al, 2000) among others. In our research we consider following aspects of quality of life and level of development (see Table 1):

- quality of life (10 variables),
- health and environment (6 variables),
- education (4 variables),
- economic development (8 variables).

Features representing all mentioned above aspects will be included in the synthetic measures as diagnostic variables. It is worth mentioning that among diagnostic variables we distinguish stimulants and destimulants. The former are variables whose rise in quantity indicates an increase of the socio-economic development level. The latter are variables whose decrease in quantity indicates an increase of development level.

Table 1. Diagnostic variables

Life domains	Variables		Description of variables
	groups	type	
Health and environment	Health	S	Healthy life expectancy at birth 2019 (years)
		S	Current health expenditure 2017 (% of GDP)
		S	Physicians 2010-2018 (per 10,000 people)
	Environment	D	Carbon dioxide emissions Production emissions per capita 2018 (tonnes)
		D	Mortality rate attributed to household and ambient air pollution 2016 (per 100 000 population, age-standardized)
		D	Mortality rate attributed to unsafe water, sanitation and hygiene services 2016 (per 100 000 population)
Education		S	Mean years of schooling 2019 (years)
		S	Literacy rate adult (% ages 15 and older) 2008-2018
		D	Primary school dropout rate 2008-2018 (% of primary school cohort)
		D	Pupil–teacher ratio, primary school 2010-2019 (pupils per teacher)
Economic development		S	Foreign direct investment, net inflows 2019 (% of GDP)
		D	Total unemployment rate 2019 (female to male ratio)
		S	Exports and imports 2019 (% of GDP)
		S	Employment to population ratio 2019 (% ages 15 and older)
		D	Employment in agriculture 2019 (% of total employment)
		S	Employment in services 2019 (% of total employment)
		D	Unemployment total 2019 (% of labour force)
		D	Unemployment youth 2019 (% ages 15-24)
Quality of life	IT	S	Internet users total 2018 (% of population)
		S	Mobile phone subscriptions 2018 (per 100 people)
	Women situation	S	Share of seats held by women in parliament 2019 (%)
		Safety	D
	S		Stock of immigrants 2019 (% of population)
	Level of life	S	Gross domestic product (GDP) per capita 2019 (2017 PPP \$)
		S	Ratio of education and health expenditure to military expenditure (2010-2017)
		D	Working poor at PPP\$3.20 a day 2019 (% of total employment)
		D	Youth not in school or employment 2019 (% ages 15-24)
		S	General government final consumption expenditure 2014-2019 total (% of GDP)

Source: own elaboration based on analysis the database
<http://hdr.undp.org/en/content/download-data>

In our investigation we construct the synthetic measure of development proposed by Hellwig (1968). This measure uses the concept of taxonomic distance from the defined pattern. In other words, all objects (countries) are compared with the distinguished pattern. Therefore, it is necessary to determine such a pattern (benchmark) which might be either the really existing object (country) or the hypothetical one.

The value of the taxonomic measure SMR_i for the i -th ($i=1, 2, \dots, n$) country, is defined as by Kompa and Witkowska (2009):

$$SMR_i = 1 - \frac{q_i}{\max\{q_i\}} \tag{4}$$

where q_i is the distance of the i -th object from the benchmark:

$$q_i = \sqrt{\sum_{j=1}^k \nu_j (z_j^i - z_j^0)^2} \tag{5}$$

evaluated for the weights ν_j and standardized variables z_{jt}^0, z_{jt}^i that describe the benchmark and the i -th investigated state, respectively. The pattern is defined as:

$$z_{jt}^0 = \begin{cases} \min_{i=1,2,\dots,n} \{z_{jt}^i\} & \text{for } x_{jt}^i \in D \\ \max_{i=1,2,\dots,n} \{z_{jt}^i\} & \text{for } x_{jt}^i \in S \end{cases} \quad (6)$$

$$z_{jt}^i = \frac{x_{jt}^i - \bar{x}_{jt}}{S_{jt}^x} \quad (7)$$

where, for each period t , z_{ij} denotes standardized variables of the j -th feature in the i -th country, x_{jt}^i - observations of the j -th raw feature in the i -th country, \bar{x}_{jt} , S_{jt}^x - average and standard deviation of of the j -th raw feature, respectively, D, S - sets of de-stimulants and stimulants, respectively, k - count of variables employed for the measure construction, \bar{q}_t , S_{qt} - the average and the standard deviation of distances q_{it} , respectively:

$$\bar{q}_t = \frac{1}{n} \sum_{i=1}^n q_{it} \quad (8)$$

$$S_{qt} = \sqrt{\frac{1}{n} \sum_{i=1}^n (q_{it} - \bar{q}_t)^2} \quad (9)$$

Value of the weight v_j determines the importance of the j -th variable in the aggregated measure. Evaluation of weights is one of the most important and the most difficult problems that must be solved by the measure constructor. If $v_j > v_h$ then the j -th variable has bigger share in the SMR evaluation than the h -th variable. Another words, introducing bigger values of v_j for the particular variable causes strengthening the influence of that variable. It is worth mentioning that to define the hierarchy of diagnostic features, from the most to the less important, is relatively easy but it is extremely difficult to evaluate the mutual relations among weights determined for variables. Therefore, values of weights are often the same for all considered variables, for instance:

$$v_j = \frac{1}{k} \quad \text{for } j = 1, 2, \dots, k \quad (10)$$

This approach ensures that each variable equally influences the synthetic measure. However, to construct an aggregated indicator, a large number of aspects, represented by groups of different variables, are taken into account. If the count of variables describing each group is not equal than the aspect, that is represented by the bigger number of features, influences the aggregated indicator SMR more than others. Therefore assuming that each group of variables G_l (where $l = 1, 2, \dots, g$) is to influence the synthetic measure to the same degree, the distance of the i -th object from the benchmark should be evaluated as:

$$q_{it} = \sqrt{\frac{1}{g} \sum_{l=1}^g \frac{1}{k_l} \sum_{j=1}^{k_l} (z_{jt}^i - z_{jt}^0)^2} \quad (11)$$

where, g - count of groups of variables considered in the aggregated measure construction, k_l - count of variables describing the l -th aspect of investigated object ($l = 1, 2, \dots, g$), $k = \sum_{l=1}^g k_l$.

Approach introduced by (11) ensures that each considered domain is equally represented in the synthetic measure, regardless the number of variables that are used for the aspect description. In our research, to evaluate socio-economic development of African countries, we apply both approaches and the aggregated indicator SMR is evaluated for equal weights determined:

- for each variable x_j , then the synthetic measures are denoted by $SMRI_{it}$ and are calculated due to formulas (4) – (10), and

- for all groups of variables, then the synthetic measures are denoted by SMR_{2it} and are calculated due to formulas: (4), (11), (6) – (9).

In our study, we also separately analyze each of the distinguished aspects of socio-economic development that are used in the aggregate SMR measure. Therefore, using formulas (4) - (10), we construct "sub" measures for each group of variables.

It is worth mentioning that values of synthetic measure of development (4) belong to the interval [0;1]. They have no economic interpretation, and they are used only to order objects. The bigger value of SMR_i (4), evaluated for i -th object (country), means better position of this object. In other words, taxonomic measure shows the position of the i -the object (country) among other considered objects for the certain set of characteristics which are used for its construction.

In the taxonomic measure construction, the crucial issue is data availability because in multidimensional analysis missing data, which appear in the database, may eliminate either objects or variables (used for the indicator construction). Therefore, the initial step of our research is to preprocess the data to check the completeness of the database and eliminate variables that are

- (1) almost stable i.e., their variability coefficients are smaller than 10%, and
- (2) strongly correlated i.e., the absolute value of Pearson coefficient evaluated for two diagnostic variables is bigger than 0.9.

In the former case, we remove variables that do not differentiate objects strongly enough. However, in practice, measure developers often retain such variables, especially when data availability is poor. The latter case allows us to eliminate variables that duplicate the same information. Preserving highly correlated variables strengthens the impact of the information provided by these variables and may be a deliberate action.

Among 53 African states which are classified by HDI, we excluded from further analysis eight states with the highest number of lacking observations i.e., Comoros, Congo, Djibouti, Eritrea, Libya, Sao Tome and Principe, Seychelles, and South Sudan, together with Mauritius which is the only African state classified as very high human development country. In other words, in further analysis we consider 44 African states representing 97.67% of African population.

In our investigation we started from 77 potential diagnostic variables which might be used for the taxonomic measure construction and 53 African countries. However, for some features, number of missing observations concerns even more than half of countries e.g., freshwater withdrawals 2007–2017 as percentage of total renewable water resources, homicide rate 2013-2018 per 100,000 people, fossil fuel energy consumption 2013–2015 as percentage of total energy consumption. Such variables were deleted from the set of characteristics since it was impossible to complete the missing data in a reliable way. The final set of diagnostic variables contains 28 uncorrelated features among which only healthy life expectancy at birth might be classified as quasi-stable variable (variability coefficient 8%) but it is usually used in the indicators' construction.

All selected diagnostic variables are described in Table 1 together with information on whether they are stimulant (S) or de-stimulant (D). It is visible that apart from the distinguished life domains: "health and environment", and "quality of life", there are several groups of variables (separately "health" and "environment" as well as "IT", "situation of women", "safety" and "level of life"), which might be treated as separate aspects of socio-economic development.

4. Empirical results

Applying described methodology, we rank 44 analyzed countries according to synthetic measures of development and cluster them into four classes (Table 2) using the same method of classification which was described previously (and applied in Table A1). It is worth noting, that the ranking of countries made according to HDI, which is presented in the last column of Table 2, differ from the

one presented in Table A1 by the list (and number) of analyzed African countries. As one may notice, excluding states being outliers let us cluster analyzed states into four classes.

Table 2. Clustering by values of synthetic measure of development SMR and HDI

No.	Class	SMR1 evaluated for equal weights for all variables		SMR2 evaluated for equal weights for 4 life domains		HDI
1	I	Cabo Verde	0.428	Cabo Verde	0.584	Algeria
2		Equatorial Guinea	0.372	Tunisia	0.558	Tunisia
3		Tunisia	0.372	Algeria	0.540	Botswana
4		Gabon	0.372	Botswana	0.540	South Africa
5		Botswana	0.346	Morocco	0.526	Egypt
6		Zimbabwe	0.343	Namibia	0.508	Gabon
7		Algeria	0.339	Eswatini	0.495	Morocco
8		Namibia	0.339	Ghana	0.487	Cabo Verde
9		Morocco	0.336	Zimbabwe	0.486	Namibia
10	II	Ghana	0.322	Egypt	0.485	Eswatini
11		Eswatini	0.313	Kenya	0.472	Ghana
12		South Africa	0.288	Equatorial Guinea	0.466	Kenya
13		Lesotho	0.280	Tanzania	0.445	Equatorial Guinea
14		Mozambique	0.272	South Africa	0.445	Zambia
15		Liberia	0.272	Gabon	0.436	Angola
16		Kenya	0.269	Lesotho	0.401	Zimbabwe
17		Zambia	0.267	Gambia	0.392	Cameroon
18		Cameroon	0.266	Côte d'Ivoire	0.390	Mauritania
19		Egypt	0.264	Sudan	0.370	Benin
20		Senegal	0.254	Mauritania	0.352	Uganda
21		Rwanda	0.253	Guinea	0.331	Rwanda
22		Côte d'Ivoire	0.252	Burkina Faso	0.329	Nigeria
23		Madagascar	0.252	Senegal	0.324	Côte d'Ivoire
24	III	Gambia	0.240	Zambia	0.320	Tanzania
25		Mauritania	0.237	Nigeria	0.304	Madagascar
26		Tanzania	0.236	Guinea-Bissau	0.300	Lesotho
27		Guinea	0.231	Rwanda	0.285	Togo
28		Malawi	0.217	Mali	0.275	Senegal
29		Burkina Faso	0.202	Malawi	0.264	Sudan
30		Togo	0.201	Niger	0.263	Gambia
31		Angola	0.200	Togo	0.250	Ethiopia
32		Benin	0.196	Liberia	0.245	Malawi
33		Uganda	0.195	Benin	0.206	Congo (Dem. Rep.)
34		Sudan	0.191	Congo (Dem. Rep.)	0.201	Guinea-Bissau
35		Ethiopia	0.189	Cameroon	0.182	Liberia
36		Sierra Leone	0.182	Mozambique	0.176	Guinea
37		Guinea-Bissau	0.176	Burundi	0.173	Mozambique
38		Congo (Dem. Rep.)	0.176	Madagascar	0.158	Burkina Faso
39		Burundi	0.173	Ethiopia	0.133	Sierra Leone
40		Mali	0.169	Uganda	0.125	Mali
41	IV	Nigeria	0.166	Angola	0.102	Burundi
42		Niger	0.129	Central African Rep.	0.086	Chad
43		Chad	0.089	Sierra Leone	0.021	Central African Rep.
44		Central African Rep.	0.000	Chad	0.000	Niger

Source: Own calculation

Among the highest developed countries, Cabo Verde, Tunisia, Botswana, Algeria, and Morocco are recognized by all three indicators (i.e., SMR1, SMR2 and HDI). Whereas among the least developed states, Chad and Central African Republic are recognized by all three measures. It is worth mentioning.

Table 3. Clustering by values of synthetic measure of development SMR3, and “global” IAG

No.	Class	SMR3 evaluated for equal weights for 8 variable groups		“Global” IAG for equal weights for 5 life domains	
1	I	Tunisia	0.571	Cabo Verde	73.14
2		Algeria	0.564	Tunisia	70.44
3		Cabo Verde	0.558	Botswana	66.50
4		Namibia	0.548	South Africa	65.80
5		Botswana	0.530	Namibia	65.06
6		Morocco	0.519	Ghana	64.32
7		South Africa	0.511	Senegal	63.18
8		Egypt	0.499	Morocco	60.96
9	II	Eswatini	0.472	Rwanda	60.52
10		Zimbabwe	0.467	Benin	58.58
11		Equatorial Guinea	0.452	Kenya	58.50
12		Tanzania	0.450	Algeria	56.16
13		Gabon	0.449	Gambia	55.88
14		Kenya	0.448	Burkina Faso	54.00
15		Ghana	0.439	Côte d'Ivoire	53.90
16		Sudan	0.387	Tanzania	53.04
17		Côte d'Ivoire	0.380	Lesotho	52.30
18		Lesotho	0.375	Zambia	52.02
19		Mauritania	0.352	Uganda	51.82
20		Gambia	0.351	Malawi	51.56
21		Senegal	0.349	Sierra Leone	50.98
22		Guinea	0.330	Togo	50.32
23	III	Burkina Faso	0.313	Mozambique	49.00
24		Rwanda	0.302	Liberia	47.88
25		Zambia	0.293	Niger	47.80
26		Guinea-Bissau	0.277	Gabon	47.66
27		Nigeria	0.273	Egypt	47.44
28		Mali	0.255	Ethiopia	46.60
29		Niger	0.244	Mali	46.58
30		Malawi	0.241	Zimbabwe	46.12
31		Togo	0.224	Nigeria	45.54
32		Liberia	0.192	Madagascar	44.42
33		Cameroon	0.184	Eswatini	43.82
34		Burundi	0.184	Cameroon	43.48
35		Benin	0.180	Guinea	42.48
36		Mozambique	0.170	Mauritania	41.64
37	IV	Congo (Dem. Rep.)	0.156	Guinea-Bissau	41.40
38		Ethiopia	0.152	Angola	40.00
39		Uganda	0.132	Burundi	36.90
40		Angola	0.127	Chad	33.88
41		Madagascar	0.126	Sudan	32.50
42		Central African Rep.	0.080	Congo (Dem. Rep.)	31.68
43		Sierra Leone	0.006	Central African Rep.	30.68
44		Chad	0.000	Equatorial Guinea	28.70

Source: Own calculation

that both SMRs are calculated using the same 28 variables however they differ by system of weights. SMR1 was calculating using formulas (4)-(5) and (10) whereas SMR2 using (4) and (11) for $g=4$. The former approach let all variables have the same influence while the latter causes the same influence of the groups of variables describing different life domains.

As, it was already mentioned, using 28 variables described in Table 1, it is possible to distinguish eight instead than four selected life domains, i.e., health (4 variables), environment (3 variables), level of life (5 variables), application of IT (2 variables), safety (8) and situation of women (one variable).

Therefore, we also evaluated synthetic measure of development SMR3 for the equal weights for 8 groups of diagnostic variables, i.e., SMR3 is calculated using formulas (4) and (11) for $g=8$. We also evaluated the “global” Ibrahim Index of African Governance (IIAG), assuming the equal meaning of five distinguished life domains, i.e., human development, foundation for economic opportunity, security & rule of law, overall governance and participation, rights & inclusion, assuming the same weight for all these aspects of socio-economic development distinguished in IIAG⁵ (see Mo Ibrahim Foundation 2020). Country rankings due to the SMR3 and “global” IIAG are presented in Table 3.

Analyzing country classification presented in Table 3 one may notice that using SMR3 and “global” IIAG, six countries are classified to the first class (Tunisia, Cabo Verde, Namibia, Botswana, Morocco, and South Africa), and three (- Angola, Chad and Democratic Republic of Congo) are recognized in the fourth class. It means that both measures recognize socio-economic level of development in similar way although both measures use different variables and not the same data sources. Comparing SMR1 and SMR2 to “global” IIAG, it is visible that only four or five states are classified identically to the first class and two or three to the last class.

Table 4. Majority Voting Clustering (MVC) according to SMR1, SMR2, SMR3 and HDI classification

MVC	Country	Frequency in cluster				MVC	Country	Frequency in cluster			
		I	II	III	IV			I	II	III	IV
I	Algeria	4				II	Lesotho		3	1*	
IV	Angola		1*	1	2	III	Liberia		1	3*	
III	Benin			4		IV	Madagascar		1	1*	2
I	Botswana	4				III	Malawi			4	
II	Burkina Faso		1	2	1*	III	Mali			3	1*
III	Burundi			2	2*	II	Mauritania		2	2*	
I	Cabo Verde	4				I	Morocco	4			
III	Cameroon		2*	2		III	Mozambique		1	3*	
IV	Central African Rep.				4	I	Namibia	3	1*		
IV	Chad				4	III	Niger			2	2*
III	Congo (Dem. Rep.)			3*	1	III	Nigeria			3*	1
II	Côte d'Ivoire		3	1*		II	Rwanda	1	3*		
I	Egypt	3*	1			II	Senegal		2	2*	
III	Equatorial Guinea	1	3*			IV	Sierra Leone			1	3*
III	Eswatini	1	3*			II	South Africa	2*	2		
III	Ethiopia		2*	2		II	South Sudan		2	2*	
II	Gabon	2*	2			II	Tanzania		2	2*	
II	Gambia		2	2*		III	Togo			4	
III	Ghana	1	3*			I	Tunisia	4			
II	Guinea		2	2*		III	Uganda			3*	1
III	Guinea-Bissau			4		III	Zambia		2*	2	
II	Kenya		4			I	Zimbabwe	2	2*		

Source: own calculation

Note * denotes classification also by HDI

As it is visible in Tables 2 and 3, changes of weights influence values of SMR, and the belongingness to the certain class of development. Therefore, to decide about the position of the country in the distinguished group we apply majorization rules which let us classify the certain object to the class which is recognized the most often for the particular country (Kompa, Witkowska 2021). Therefore, Table 4 contains information about country’s classification to the one of four distinguished classes by three synthetic measures of development evaluated for 28 variables but for different weight systems (i.e., SMR1-SMR3) and by Human Development Index (which is denoted in Table 4 by *). We assumed that HDI is the weakest measure since it uses only 4 variables (which are also employed in SMR construction), thus for the same number of recognitions in the same class we decided to classify the country into the one where HDI classification is absent.

⁵ Global” IIAG was calculated as unweighted arithmetic average of IIAG of five life domains.

We also calculate synthetic measures of development for four distinguished life domains, assuming the same weights for each variable in the group (Tables 5 and 6). As one may notice only Cabo Verde belongs to the first class in all four life domains. There are no such countries which belong to the same class more often than three times in four partial SMRs classifications. Countries belonging three times to the same class are as following:

- to the first class - Gabon and Tunisia,
- to the second class - Morocco, Lesotho and Zambia,
- to the third class – Benin, Burkina Faso, Burundi, Côte d'Ivoire, Ethiopia, Gambia, Guinea-Bissau, Liberia, Malawi, Mali, Mauritania, Senegal, Togo, and Uganda
- to the fourth class - Central African Republic, Chad, and Niger.

In other words, 23 countries are classified to the same class at least for three life domains. Gabon and Tunisia are recognized as the best developed states in three life domains, although the former is evaluated as the second-class country in general classification (see Table 4). One may also notice that both counties (i.e., Gabon and Tunisia) belong to the third class in economic development.

Let us pay more attention to the countries classified to the first class by the majorization rule which are not recognized as very high developed in the majority of distinguished life domains i.e., Algeria, Botswana, Egypt, Morocco, Namibia, Zimbabwe, and South Africa, which (similarly as Gabon) is not classified to the first class in Table 4 since having two “votes” for the first class, the one of them belongs to HDI which we treat as a weaker measure than SMRs.

Algeria is recognized in the first-class by the general measures and by SMR evaluated for two domains - education and health and environment, whereas it belongs to the second class for quality of life and to the last class in economic development. Botswana is the first-class country in general evaluation together with partial measures of education and health and environment, the second-class in quality of life and the third-class in economic development. Morocco is the first-class country in general classification and due to health and environment and it belongs to the second class in the rest of life domains. Egypt is classified to the first class in general, and also in - education together with health and environment. However, it belongs to the third class in quality of life and to the last class in economic development. Namibia, South Africa, and Zimbabwe belong to the first class if education and quality of life are considered. But Namibia and Zimbabwe belong to the third class in economic development, and to the second class in health and environment. Whereas South Africa are recognized as the third- and fourth-class country in health and environment, and economic development, respectively.

Central African Republic, Chad and Niger are recognized as countries with the lowest level of development in health and environment, education, and quality of life. Whereas employing majorization rule (see Table 4), the first two countries are classified in the same way by general measures, and Niger as the third-class state.

In the last stage of our investigation, we compare all measures in terms of their variability, because only well-diversified indicators are able to recognize countries representing the certain level of development. Such comparison is presented in Table 7, where arithmetic mean, standard deviation and variability coefficient of global indicators (SMR1-SMR3, “global” IAG and HDI) together with partial components of SMR and IAG are shown.

Table 5. Clustering on values of SMR measure calculated for “education” and “economic development”

No.	Class	Education		Economic development	
1	I	Botswana	0.893	Mozambique	0.467
2		South Africa	0.803	Liberia	0.416
3		Algeria	0.799	Cabo Verde	0.392
4		Tunisia	0.760	Ghana	0.372
5		Namibia	0.740	Equatorial Guinea	0.313
6		Egypt	0.729	Sierra Leone	0.291
7		Gabon	0.725	Guinea	0.276
8		Eswatini	0.724	Senegal	0.268
9		Ghana	0.720	Chad	0.262
10		Zimbabwe	0.714	Lesotho	0.255
11		Cabo Verde	0.711	Madagascar	0.255
12		Kenya	0.687	Benin	0.244
13	II	Equatorial Guinea	0.646	Malawi	0.243
14		Morocco	0.628	Zambia	0.224
15		Lesotho	0.611	Rwanda	0.224
16		Zambia	0.545	Gambia	0.223
17		Nigeria	0.529	Cameroon	0.216
18		Tanzania	0.516	Congo (Dem. Rep.)	0.200
19		Congo (Dem. Rep.)	0.516	Morocco	0.194
20	III	Mauritania	0.430	Zimbabwe	0.190
21		Côte d'Ivoire	0.414	Mali	0.190
22		Sudan	0.414	Côte d'Ivoire	0.189
23		Togo	0.413	Kenya	0.181
24		Madagascar	0.409	Tunisia	0.177
25		Cameroon	0.409	Botswana	0.173
26		Uganda	0.403	Burkina Faso	0.164
27		Gambia	0.395	Gabon	0.163
28		Liberia	0.379	Guinea-Bissau	0.161
29		Senegal	0.329	Mauritania	0.155
30		Burundi	0.304	Niger	0.150
31		Rwanda	0.301	Togo	0.149
32		Malawi	0.293	Eswatini	0.144
33		Angola	0.292	Uganda	0.143
34		Benin	0.275	Nigeria	0.136
35		Guinea-Bissau	0.261	Ethiopia	0.132
36	IV	Mali	0.221	Namibia	0.121
37		Burkina Faso	0.216	Tanzania	0.120
38		Mozambique	0.215	Central African Rep.	0.112
39		Sierra Leone	0.214	Algeria	0.075
40		Guinea	0.199	Angola	0.064
41		Niger	0.197	Sudan	0.042
42		Ethiopia	0.163	Egypt	0.029
43		Chad	0.005	South Africa	0.005
44		Central African Rep.	0.000	Burundi	0.000

Source: Own calculation

Table 6. Clustering on values of SMR measure calculated for “health and environment”, and “quality of life”

No.	Class	Health and environment		Quality of life	
1	I	Algeria	0.561	South Africa	0.565
2		Tunisia	0.503	Equatorial Guinea	0.490
3		Egypt	0.457	Gabon	0.451
4		Morocco	0.448	Namibia	0.436
5		Gabon	0.437	Cabo Verde	0.430
6		Cabo Verde	0.427	Tunisia	0.407
7		Botswana	0.398	Zimbabwe	0.400
8	II	Namibia	0.368	Algeria	0.383
9		Eswatini	0.364	Botswana	0.383
10		Zimbabwe	0.362	Rwanda	0.367
11		Madagascar	0.338	Eswatini	0.360
12		Angola	0.336	Morocco	0.358
13		Zambia	0.312	Côte d'Ivoire	0.347
14		Mauritania	0.303	Lesotho	0.340
15		Sudan	0.302	Kenya	0.324
16		Cameroon	0.279	Ghana	0.321
17		Tanzania	0.273	Cameroon	0.313
18	III	Guinea-Bissau	0.248	Mozambique	0.310
19		Ethiopia	0.247	Senegal	0.300
20		Senegal	0.238	Gambia	0.299
21		Burundi	0.233	Togo	0.297
22		Guinea	0.230	Egypt	0.292
23		Burkina Faso	0.216	Guinea	0.292
24		Ghana	0.216	Burundi	0.292
25		Equatorial Guinea	0.212	Uganda	0.292
26		Malawi	0.202	Burkina Faso	0.287
27		Kenya	0.201	Tanzania	0.282
28		Gambia	0.192	Ethiopia	0.280
29		Liberia	0.191	Liberia	0.277
30		Mozambique	0.188	Mauritania	0.268
31		Côte d'Ivoire	0.185	Angola	0.267
32		Rwanda	0.178	Zambia	0.263
33		Congo (Dem. Rep.)	0.165	Malawi	0.259
34		Lesotho	0.162	Benin	0.255
35	Mali	0.158	Sierra Leone	0.243	
36	Benin	0.128	Sudan	0.240	
37	South Africa	0.128	Madagascar	0.235	
38	IV	Niger	0.103	Mali	0.223
39		Togo	0.103	Nigeria	0.221
40		Uganda	0.100	Guinea-Bissau	0.201
41		Sierra Leone	0.085	Niger	0.189
42		Central African Rep.	0.075	Chad	0.164
43		Nigeria	0.060	Congo (Dem. Rep.)	0.156
44		Chad	0.000	Central African Rep.	0.000

Source: Own calculation

Table 7. Comparison of indicators

Measure	Arithmetic mean	Standard deviation	Variability coefficient (%)
SMR1	0.2469	0.0814	32.95
SMR2	0.3279	0.1525	46.50
SMR3	0.3207	0.1562	48.71
education SMR	0.4578	0.2264	49.46
“economic development SMR	0.1932	0.1005	52.04
health & environment SMR	0.2480	0.1262	50.89
quality of life SMR	0.3036	0.0953	31.37
global IIAG	50.1177	10.6376	21.23
human development IIAG	52.5932	9.9446	18.91
economic opportunity IIAG	49.3705	11.6714	23.64
security & rule of law IIAG	51.3295	12.7288	24.80
overall governance IIAG	50.1205	10.6490	21.25
participation, rights & inclusion IIAG	47.1750	13.5653	28.76
HDI	0.5506	0.0956	17.36

Source: Own calculations

The most diversified indicator is SMR “economic development” (52%). Partial measures representing “health & environment” and “education” are also diversified (50.9% and 49.5%, respectively). Among three “global” SMRs, the SMR3 differentiates analyzed countries the most. IIAG indicators are less diversified (from 18.9% to 28.8%), although they seem to better differentiate states than HDI (17.4%). The reason of such results depends on the set of countries and the set of variables which were considered in the measures construction. HDI is worldwide indicator, IIAG includes 54 African, also outliers (Mauritius and Seychelles). It is worth mentioning that it is impossible to make direct comparisons between IIAG measures and SMR because life domains are defined in both indicators in different way. One may also notice that the IIAG indicators are built using 237 variables⁶, whereas for SMR construction we use only 28 quantitative features.

5. Managerial Implications

Comparisons of economies are crucial for management in the sphere of international finance and economic policies. For a long time, the dominant opinion was that single-factor comparisons are enough for the mentioned issues. This view now is being displaced by the multi-factor approach. However, many aggregate indicators fail to examine how economic development supports the social development of countries and regions. There is how it supports development understood not only in economic terms, but also in terms of the well-being of the society. And, how much economic growth drives itself, and how much social development, which is in synergy with the economy. As a result, composite indicators have emerged in the practice of the World Bank, the UN, many international rating agencies or non-governmental organizations (such as the Mo Ibrahim Foundation), taking into account factors that indicate the level of human development in addition to economic aspects.

Our research is a part of this trend by proposing synthetic measures of development for comparative research. Our synthetic measures of socio-economic development are distinguished by their wide range of applications, easy construction, intuitive use, and simplicity of interpretation.

The measures we propose are also strongly related to the "social development management" stream of research, which appears in literature in recent years (Mokate, Saavedra, 2011; Kapur, 2018; Bobrovska et al., 2021) and is a field of practice and knowledge focused strategically on the promotion of social development. The area of management of social development seems to be a response to the prevalence of the main problems of poverty, inequality, illiteracy, unemployment and over-population. It targets to make sure that the community policies will support the properly selected goals and the properly selected facilities. This is also the application area of our methodology.

⁶ IIAG concerns 372 different measures of governance for any given country or group in any given year across ten years (Mo Ibrahim Foundation, 2020).

6. Conclusion

Assessment of socio-economic development is a very complex issue which requires profound investigations and proper selection of methodology. In our research we constructed several synthetic measures based on taxonomic distance to describe selected countries. We also state the rules for selecting explanatory variables and verify our models using publicly available data delivered from the collections of the World Bank, United Nations Development Programme and Mo Ibrahim Foundation. However, we had to eliminate several countries and features from our analyses because of lacking observations which is the weakest point of our investigation. We also realize that the level of national statistics and data collection may differ among African countries thus some of used data might not be reliable.

Nevertheless, we attempted to construct aggregated measures and evaluate level of socio-economic development of selected aspects of human activity. Investigated African countries are clustered into homogenous classes which let us point out the most and the least developed countries. It seems that economic development and health & environment are two life domains which differentiate African countries the most. Whereas quality of life seems to be less diversified among considered countries.

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APPENDIX 1.

Table 1. Clustering of African countries by HDI and GNI per capita ratios in 2019

Class	Rank	Country	HDI	Country	GNI
I	1	Mauritius	0.804	Seychelles	26 903
	2	Seychelles	0.796	Mauritius	25 266
	3	Algeria	0.748	Botswana	16 437
	4	Tunisia	0.740	Libya	15 688
	5	Botswana	0.735	Equatorial Guinea	13 944
	6	Libya	0.724	Gabon	13 930
	7	South Africa	0.709	South Africa	12 129
	8	Egypt	0.707	Egypt	11 466
	9	Gabon	0.703	Algeria	11 174
	10	Morocco	0.686	Tunisia	10 414
II	11	Cabo Verde	0.665	Namibia	9 357
	12	Namibia	0.646	Eswatini	7 919
	13	Sao Tome and Principe	0.625	Morocco	7 368
	14	Eswatini	0.611	Cabo Verde	7 019
	15	Ghana	0.611	Angola	6 104
	16	Kenya	0.601	Djibouti	5 689
	17	Equatorial Guinea	0.592	Ghana	5 269
	18	Zambia	0.584	Mauritania	5 135
	19	Angola	0.581	Côte d'Ivoire	5 069
	20	Congo	0.574	Nigeria	4 910
	21	Zimbabwe	0.571	Kenya	4 244
	22	Cameroon	0.563	Sao Tome and Principe	3 952
III	23	Comoros	0.554	Sudan	3 829
	24	Mauritania	0.546	Cameroon	3 581
	25	Benin	0.545	Zambia	3 326
	26	Uganda	0.544	Senegal	3 309
	27	Rwanda	0.543	Benin	3 254
	28	Nigeria	0.539	Lesotho	3 151

	29	Côte d'Ivoire	0.538	Comoros	3 099
	30	Tanzania	0.529	Congo	2 879
	31	Madagascar	0.528	Eritrea	2 793
	32	Lesotho	0.527	Zimbabwe	2 666
	33	Djibouti	0.524	Tanzania	2 600
	34	Togo	0.515	Guinea	2 405
	35	Senegal	0.512	Mali	2 269
	36	Sudan	0.510	Ethiopia	2 207
	37	Gambia	0.496	Gambia	2 168
	38	Ethiopia	0.485	Rwanda	2 155
	39	Malawi	0.483	Burkina Faso	2 133
	40	Congo (Dem. Rep.)	0.480	Uganda	2 123
	41	Guinea-Bissau	0.480	South Sudan	2 003
	42	Liberia	0.480	Guinea-Bissau	1 996
	43	Guinea	0.477	Sierra Leone	1 668
	44	Eritrea	0.459	Togo	1 602
	45	Mozambique	0.456	Madagascar	1 596
IV	46	Burkina Faso	0.452	Chad	1 555
	47	Sierra Leone	0,452	Liberia	1 258
	48	Mali	0,434	Mozambique	1 250
	49	Burundi	0,433	Niger	1 201
	50	South Sudan	0,433	Congo (Democratic Republic of the)	1 063
	51	Chad	0,398	Malawi	1 035
	52	Central African Republic	0,397	Central African Republic	993
	53	Niger	0,394	Burundi	754

Source: own elaboration based on <http://hdr.undp.org/en/content/download-data>

Table A2. Comparison of countries' positions in rankings based on HDI and GNI per capita

Country	HDI rank	GNI rank	Difference GNI - HDI	Country	HDI rank	GNI rank	Difference GNI - HDI
Algeria	3	9	6	Liberia	42	47	5
Angola	19	15	-4	Libya	6	4	-2
Benin	25	27	2	Madagascar	31	45	14
Botswana	5	3	-2	Malawi	39	51	12
Burkina Faso	46	39	-7	Mali	48	35	-13
Burundi	49	53	4	Mauritania	24	18	-6
Cabo Verde	11	14	3	Mauritius	1	2	1
Cameroon	22	24	2	Morocco	10	13	3
Central African Rep.	52	52	0	Mozambique	45	48	3
Chad	51	46	-5	Namibia	12	11	-1
Comoros	23	29	6	Niger	53	49	-4
Congo	20	30	10	Nigeria	28	20	-8
Congo (Dem. Rep.)	40	50	10	Rwanda	27	38	11
Côte d'Ivoire	29	19	-10	Sao Tome (...)	13	22	9
Djibouti	33	16	-17	Senegal	35	26	-9
Egypt	8	8	0	Seychelles	2	1	-1
Equatorial Guinea	17	5	-12	Sierra Leone	47	43	-4
Eritrea	44	31	-13	South Africa	7	7	0
Eswatini	14	12	-2	South Sudan	50	41	-9
Ethiopia	38	36	-2	Sudan	36	23	-13
Gabon	9	6	-3	Tanzania	30	33	3
Gambia	37	37	0	Togo	34	44	10
Ghana	15	17	2	Tunisia	4	10	6
Guinea	43	34	-9	Uganda	26	40	14
Guinea-Bissau	41	42	1	Zambia	18	25	7
Kenya	16	21	5	Zimbabwe	21	32	11
Lesotho	32	28	-4				

Source: own elaboration based on Table 1

Antecedents of Supply Chain 4.0 Success for Manufacturing SMEs in South Africa

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Keywords

Supply Chain; Industry 4.0; manufacturing; small and medium enterprises; technology

Abstract

Purpose: A significant component of small and medium enterprises also struggle with gaining awareness regarding how to take advantage of technological development and, as such, are primarily overwhelmed when making technological decisions. With the advent of the fourth industrial revolution, there has been significant scholarly evidence supporting the notion that for manufacturing enterprises to prosper in the future, they should adopt emerging technologies. In this regard, this study sought to investigate the critical antecedents of Supply Chain 4.0 among small and medium enterprises in South Africa.

Design/methodology/approach: The current study employed a combination of a systematic, content-centric literature review and Interpretive Structural Modeling to extract the Supply Chain 4.0 success antecedents. Out of a pool of fifteen experts who participated in the selection interviews, four were excluded due to their lack of conversational competence, familiarity with the Industry 4.0 concept and the industrial implications supply chain, or withdrew before the expert opinion extraction.

Findings: There are thirteen critical antecedents of supply chain 4.0 success, and these should form the centre of focus for small and medium enterprises. There is a need for these institutions to receive adequate support for developing these factors to incorporate supply chain technologies better.

Research limitations/implications: The results obtained were based on the opinion of a few experts and the conduct of a literature review. In addition, the methodology employed is more subjective than a quantitative methodology. As such, further studies need to employ objective methodologies to verify the validity of these factors.

Practical implications: Supply chain management and supply chain 4.0 are interesting phenomena critical for developing small and medium enterprises. Under the umbrella of the fourth industrial revolution, a business must strive to provide for the acquisition and use of technology in their supply chains. Small and medium enterprises need to enhance their technological capabilities to attain an acceptable level of information, digital, operations, and cyber readiness.

Originality/value: This study's contribution to the existing literature is two-fold: firstly, the research findings provide a helpful reference on factors to consider when seeking to improve Supply Chain 4.0 adoption decisions among manufacturing firms. In addition, while these factors have been studied before, the current study empirically examines these factors in a different context, using the theoretical lens of the Technology-Organisation-Environment framework.

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1. Introduction

Worldwide, small and medium enterprises (SMEs) are regarded as engines for economic growth and employment, which has been the case in South Africa. According to Maduku, Mpinganjira and Duh (2016), in South Africa, the definition of an SME is derived from a combination of the number of employees, turnover, and gross assets, excluding fixed property. Notwithstanding the contribution that SMEs make to many economies, they still face limited sustainability owing to a lack of financial and human resources, technology infrastructure insufficiency, and stiff competition (da Silva et al. 2020). Most importantly, in the current era, business success is highly correlated with adopting information technologies (Haseeb et al., 2019). As stated by Haseeb, Hussain, Ślusarczyk and Jermisittiparsert (2019), the Fourth Industrial Revolution technologies include big data (BD), internet of things (IoT), and intelligent manufacturing. These can resolve technological challenges currently being faced by SMEs, ultimately increasing their sustainable business performance. In recent years, the business environment has transformed significantly as both the pace and magnitude of adoption of the Fourth Industrial Revolution (Industry 4.0) continue to grow considerably (deSousaJabbour et al., 2018; Luthra & Mangla, 2018). This has led to advances in manufacturing systems (Li, 2018; Sung, 2018) and an increase in debate and discussion over the technological changes affecting the business environment. The central arguments have been that there is inevitably a surgency in novel technologies whose adoption will be central to attaining competitive advantage, especially among manufacturing companies (Doh & Kim, 2014; Kusiak, 2018). Part of the discussions has been centred around how SMEs have participated in this revolution that has hit the global business environment.

Unlike multinational corporations (MNCs), SMEs face resource constraints resulting in the mismatches between the current Industry 4.0 theory and SMEs' capabilities (Moeuf, Pellerin, Lamouri, Tamayo-Giraldo, & Barbaray, 2018; Kaartinen, Pieskä & Vähäsöyrinki, 2016; Vrchota, Volek & Novotná, 2019). Industry 4.0, from which Supply Chain 4.0 is traced, has its origins in Germany in 2011 as a tool to promote manufacturing development (Yin et al., 2018). The term "Supply Chain 4.0" defines the relationship between Industry 4.0 and the supply chain by reiterating how the former facilitates the latter's exploration and clarification of crucial supply elements (Frederico, Garza-Reyes, Anosike, & Kumar, 2019). In this regard, Industry 4.0 technologies significantly transform supply chain processes upstream, downstream, and midstream, thereby uplifting supply chain resilience and visibility (Xie et al., 2020). Industry 4.0 has been characterised by various technologies, including augmented and virtual reality, robotics, and advanced simulations (Egger & Masood, 2020; Malik et al., 2020). There is tangible evidence showing that the advent of Industry 4.0 is creating intelligent factories powered by cyber-physical systems (CPS), IoT, and cloud computing (Zhong et al., 2017). SMEs, accounting for a significant portion of the business world globally (World Bank, 2020), have occupied a central position in the formulation of strategies to achieve inclusive growth (Lukonga, 2020). These organisations can benefit significantly from incorporating these advanced digital technologies into their supply chains (Büyükoçkan & Goçer, 2018; Choi, Wen, Sun, & Chung, 2019). Although most of SMEs' owners and managers are beginning to recognise Industry 4.0 and the subsequent Supply Chain 4.0 as the lynchpin to corporate success, a thin majority of the SMEs have adopted it (Fatorachian & Kazemi, 2018; Luthra, Kumar, Zavadskas, Mangla & Garza-Reyes, 2020).

2. Problem Investigated

Since the beginning of the fourth industrial revolution, there has been significant scholarly evidence supporting the notion that for manufacturing SMEs to prosper in the future, they should adopt emerging technologies. Given the strong supply chain and manufacturing relationship, adopting these technologies will improve approaches, such as Supply Chain 4.0. As the business environment continues to undergo significant transformation and revolutionize production and operational processes, there is a growing need to understand what SMEs ought to achieve Supply Chain 4.0 (deSousaJabbour et al., 2018; Luthra and Mangla, 2018). Undoubtedly, Supply Chain 4.0 technologies facilitate real-time supply chain optimisation and the development of products and services along the supply chain (Bag, Telukdarie, Pretorius & Gupta, 2018; Banyai, 2018). However, owing to limited resources, SMEs cannot match larger firms' performance in supply chain management practices (Moeuf, Pellerin, Lamouri, Tamayo-Giraldo, & Barbaray, 2018). Emerging technologies will contribute considerably to SMEs' ability to overcome supply chain challenges effectively, assist them

in collaborating and interacting effectively, and improve overall performance (Xu, Xu & Li, 2018; Ghobakhloo & Ching, 2019). This study, therefore, predominantly sought to investigate the antecedents of Supply Chain 4.0 successful adoption and development among manufacturing SMEs in South Africa. Supply Chain 4.0 is primarily related to the exploitation of new digital technological developments to increase interaction and efficiency among supply chain actors (Büyüközkan & Göçer, 2018; Makris, Hansen & Khan, 2019). In supply chain operations, manufacturing as a midstream activity is a critical activity that directly impacts performance, and as such, this study focused on manufacturing SMEs. According to Ali (2019), although there is considerable evidence of the benefits of the Industry 4.0 applications, SMEs in emerging economies have reluctantly embraced Supply Chain 4.0. The current research sought to remedy this position by methodically outlining the antecedents for Supply Chain 4.0 success. Successfully applying Supply Chain 4.0 technologies requires financial commitments, which most SMEs in emerging economies can essentially not meet. This study was carried out to assist Supply Chain 4.0 implementation amid a scarcity of empirical studies. This study's contribution to literature in two ways: firstly, the research findings provide a helpful reference on factors to consider when seeking to improve Supply Chain 4.0 adoption decisions among manufacturing SMEs. Secondly, while such antecedents have been examined in existing literature, this study empirically chose a different context and also a different theoretical lens of the Technology-Organisation-Environment (T-O-E) framework. Many studies have remained confined to the technology adoption model (TAM), the unified theory of acceptance and use of technology (UTAUT), or the Theory of Diffusion of Innovation.

3. Research Objectives

. It sought to achieve the following research objectives:

- a) To conduct a systematic, content-centric literature review to identify the critical antecedents for successful Supply Chain 4.0.
- b) To perform interpretive structural modeling to establish the interrelationships among success antecedents identified.
- c) To develop a model guiding manufacturing SMEs to develop Supply Chain 4.0 successfully.
- d) To discuss the managerial implication of this research.

4. Research Questions

the following research questions were formulated:

- RQ1. What are the critical determinants of the maturity of Supply Chain 4.0?
RQ2. What is the relationship between identified critical success antecedents of Supply Chain 4.0?
RQ3. What are the managerial implications emanating from this research?

5. Literature Review

While supply chains have integrated emerging technologies in most developing economies, developing economies are still lagging, with simple linear interactions from suppliers through producers and distributors to customers and back. Scholars have raised several antecedents of supply chain development, including the level of trust, top management support, government support, and external environmental factors (Flynn, Chan, Zhu & Yu, 2017; Raut, Narkhede & Gardas, 2017; Vargas, Mantilla & de Sousa Jabbour, 2018). However, most of these studies were carried out in developed economies.

5.1. Theoretical Framework

The current study is grounded on the technology, organisation, and environment (TOE) theoretical framework propounded by Tornatzky, Fleischer and Chakrabarti (1990). The technology-organisation-environment (TOE) framework is described in Tornatzky and Fleischer's *The Processes of Technological Innovation* (1990). The TOE framework explains technology adoption among firms by clearly describing the technological, organisational, and environmental context influencing the adoption and implementation of technology. The TOE framework represents the segment of the technology adoption process involving the contextual influences of the adoption and implementation

of innovations. In this theory, both the human and non-human perspectives are integrated into the adoption and implementation process, making the theory more relevant.

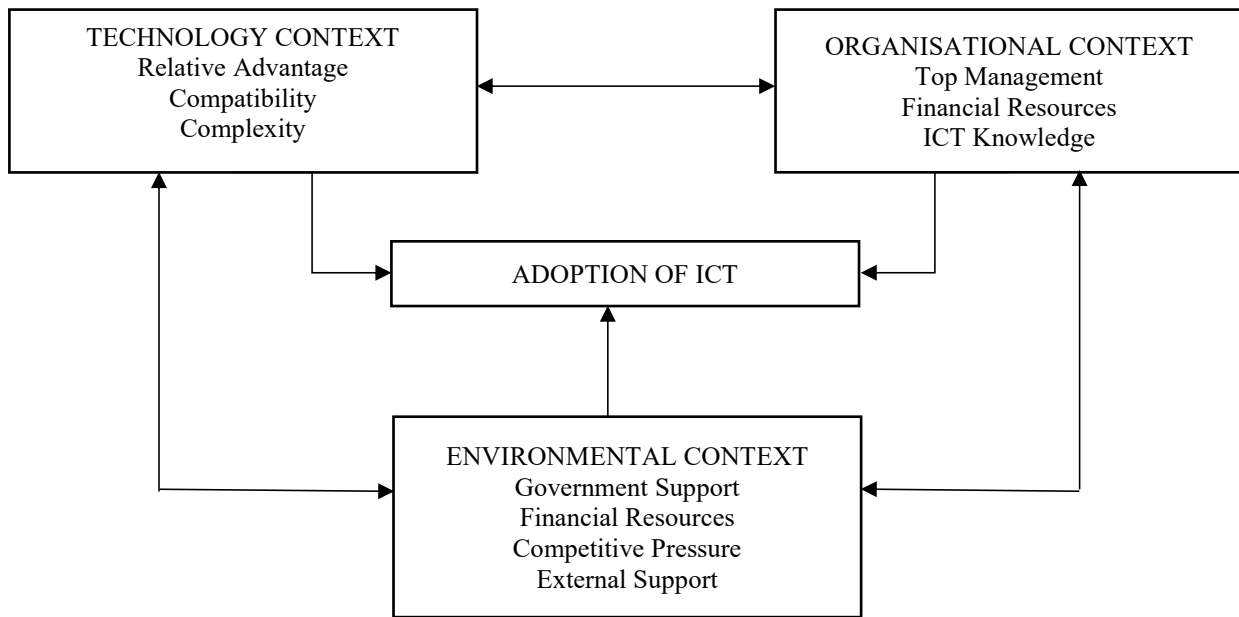


Figure 1. The Technology, Organisation and Environment Framework
Source: Tornatzky et al. (1990)

According to Awa Ukoha and Emecheta (2016), the theory handles the illusion of accumulated traditions and techno-centric predictions in other technology adoption theories. Such theories that the T-O-E framework tends to subordinate in this regard include the technology acceptance model (TAM) (Davis, 1989), the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980), the theory of planned behavior (TPB) (Ajzen, 1991) and the innovation diffusion theory (IDT) (Rogers, 2003). Figure 1 above represents The TOE framework, widely recognised and used in the study of the adoption of business analytics (Kumar & Krishnamoorthy, 2020), cloud computing (Gui, Fernando Shaharudin, Mokhtar & Karmawan, 2020), and big data (Park & Kim, 2021). This makes the valuable framework for studying the antecedents of Supply Chain 4.0 success.

5.2. Industry 4.0 and Smart Manufacturing

The fourth industrial revolution, also referred to as Industry 4.0, relates to the collection of technologies such as artificial intelligence, robotics, cloud computing, the internet of things, and 3D printing. These technologies have made it easier for Industry 4.0 makes it easier for businesses to build a flexible, smart, cost-effective, environment-friendly and socially responsible business ecosystem, especially in manufacturing (Wang et al., al.,2016a; Metallo et al., al., 2018). The dawn of this digital and technological transformation era is changing the way products are developed, services provided, and business operations. According to Onu and Mbohwa (2021), the 4IR era has unveiled remarkable technological capabilities enabling industries to be more organised, efficient, sustainable, and autonomous. In this regard, the emergence of 4IR technologies such as cyber-physical systems (CSP), the Internet of Things (IoT), and big data have seen a remarkable move towards sustainable manufacturing. The result has been the emergence of smart manufacturing, which implies real-time orchestration and synchronization of manufacturing resources, information, and processes inside factories and the entire supply chain (Bogle, 2017; Lohmer & Lasch, 2021). Large and small companies that have successfully incorporated smart technologies have also managed to attain operational flexibility, craftsmanship, and better service delivery, leading to a competitive advantage (Bar, HerbertHansen, & Khalid, 2018).

The advent of 4IR has seen the fusion and blurring of lines between the physical, cyber, and biological systems, resulting in massive cost reduction, operational performance improvement, human safety, and faster production processes. The development highly signifies the integration of

computing with the physical processes, forming the cornerstone for industry 4.0 implementations (Fuchs, 2018). The term IoT relates to the technological advancement that has enabled the independent system to communicate autonomously to each other creating volumes of big data. This has become a critical piece of technology enabling the digital transformation of the manufacturing supply chain processes. By definition, IoT relates to the progression in technology allowing for the linkages among objects and devices over the internet (Dalenogare, Benitez, Ayala & Frank, 2018). IoT has also been defined as the connection of sensors and actuators to computing systems through networks allowing the collection and analysis of data in real-time (Zhang & Yue, 2019). Eloranta and Turunen (2018:745) point out that “IoT increases the availability of data and opens up opportunities for process optimization, collaborative value creation, business model innovation and consequently the restructuring of existing industries”. The IoT technology has predominantly formed a more comprehensive methodology for collecting, aggregating, and analyzing big data about potential consumers from different paces, using real-time analytics. This has allowed for a quicker and better understanding of consumer purchasing behaviors and the flighting of relevant promotions to the consumer (Manyika et al., 2015).

5.3. The Emergence of Supply Chain 4.0

Companies are beginning to acknowledge and implement roadmaps to integrate 4IR concepts into their operations, opening up opportunities for an opportunity to Supply Chain 4.0. With the worldwide supply chain networks growing increasingly solid, robust information and communication technologies and infrastructure would significantly enhance supply chain management (Sawik, 2020; Mazzei et al., 2020). Ultimately, Industry 4.0 has great potential to influence supply chain management, leading to improved business models and processes (Duarte and Cruz-Machado, 2017). According to Makris, Hansen, and Khan (2019), Supply Chain 4.0 relates to a supply chain involving the close collaboration of stakeholders powered by digital technologies such as internet technologies, cloud computing, and the Internet of Things. Manufacturing SMEs are immersed deeply in this revolution, altering their entire supply chain (Ghobakhloo, 2020; Strozzi et al., 2017). The application of digitalisation and automation systems to the supply chains has enabled players to communicate in real-time and autonomously (Ghadimi et al., 2019). The mere fact that Industry 4.0 technologies allow for horizontal, vertical, and end-to-end digital integration (Bag et al., 2021), provides a basis upon which Supply Chain 4.0 can be successfully developed (Luthra et al., 2020). This will help develop and enhance the business's social, economic, and environmental outlook, leading to sustainable supply chains (Luthra and Mangla, 2018). In South Africa, supply chain integration and coordination have rarely been automated, and the incorporation of 4IR technologies has remained limited. However, as supply chains continue to increase in complexity and size, emerging technologies to increase the volume and speed of supply chain processes management become necessary (Bibri, 2018).

5.4 Relevance of Supply Chain 4.0 to SMEs

It is empirically accepted that SMEs can benefit significantly Supply Chain 4.0, which will enable effectively procurement, sale, and delivery of goods, while minimizing supply chain disruptions. Successful implementation of SC4.0 implies that the use of Industry 4 technologies to improve supply chain performance standards and achieve strategic goals (Frederico, 2021). According to Ferrantino and Koten (2019:104), the Supply Chain 4.0 notion relates to “the re-organization of supply chains – design and planning, production, distribution, consumption, and reverse logistics – using technologies that are known as Industry 4.0”. It is therefore, predominantly about managing supply chains based on advanced technologies such as Internet of things and big data analytics to achieve different objectives. However, despite the widespread acceptance of the significance of Industry 4.0 on supply chains, studies in the SMEs context are still limited (Li & Li, 2017; Frederico et al., 2019). As such, this study seeks to contribute to existing literature by empirically investigate the antecedents of SC4.0 success.

6. Research Methodology

It has been observed that there seems to be a disconnect between Supply Chain 4.0 and SMEs' capabilities, and most of the studies conducted on the prerequisites of Supply Chain 4.0 characteristics have been developed for large MNEs. With their limited resources and focus on costs and short-term

benefits, SMEs find adopting Supply Chain 4.0 difficult. Most SMEs also struggle with gaining awareness of the benefits of technological development and are primarily overwhelmed when it comes to making technological decisions. To fill in these gaps in existing literature, this study employed a combination of a systematic, content-centric literature review and the Interpretive Structural Modeling (1982).

6.1. Systematic, content-centric literature review

This study employed a systematic literature review to establish the factors influencing successful supply chain 4.0 adoption and implementation. To ensure objectivity in the research findings, the literature search included an initial determination of relevant and applicable publications to Industry 4.0 and Supply Chain 4.0.

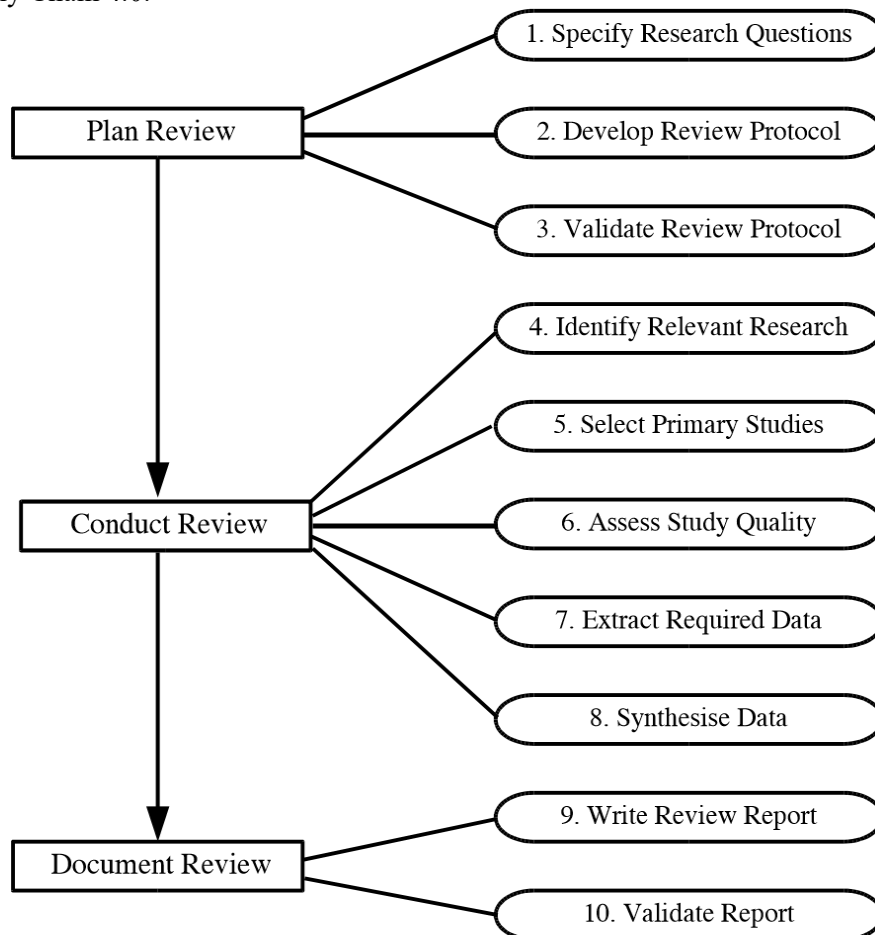


Figure 2. Systematic Literature Review Process
 Source: Adapted from Xiao and Watson (2019).

Several scientific databases such as EBSCO, ScienceDirect, Scopus, and Google Scholar were shortlisted for search, and eventually, Scopus and ScienceDirect provided adequate journal articles for analysis. Martín-Martín et al. (2018) and Tober (2011) recommend Scopus and ScienceDirect as competitive and trusted databases for literature review. Literature screening was conducted by reading the abstracts and findings of the study and removing the articles where supply chain and Industry 4.0 were not thematic areas.

6.2. Interpretive structural modelling (ISM)

The ISM, first proposed by J. Warfield in 1973 to analyze complex socioeconomic systems, is a standard method used to establish relationships among variables relating to a specific problem. It is a graph-theoretic data analysis tool that examines inter-relationships between research constructs, eventually transforming the identified relationships into a graphical presentation (Warfield, 1982). According to Sushil (2012) this method is interpretive in that the selected individuals' judgment

decides on the existence of relationships between variables. The author adds that is technique is “structural in that an overall structure is extracted from the complex set of elements based on relationships, and modeling in that the specific relationships and overall structure are portrayed in a digraph (directed graph) model”. The ISM technique has been used in determining the factors that determine project success factors (Hughes, Rana & Dwivedi, 2020;), the determinants for supply chain resilience (Attri, 2017), and the implementation of supply chain transparency in food logistics systems (Shankar et al., 2018). The ISM technique as applied in this study is represented in Figure 3 below and was developed following the standard procedures widely accepted within the ISM literature (Hughes et al., 2020; Kaswan and Rathi, 2019; Warfield, 1982).

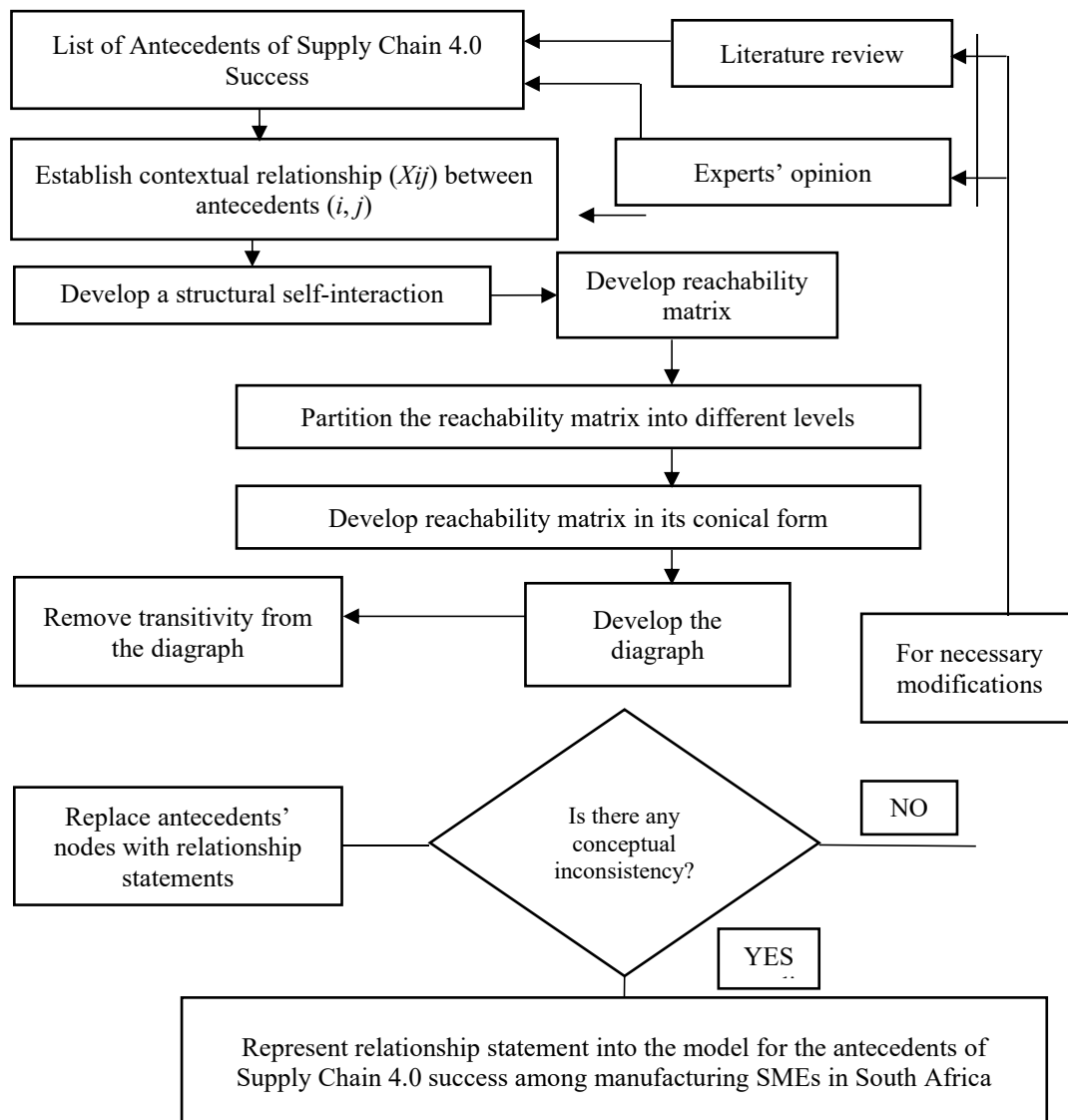


Figure 2. The ISM Implementation Procedure
 Source: Adapted from (Hughes et al., 2020; Kaswan and Rathi, 2019; Warfield, 1982).

The ISM implementation procedure highlighted above represents the road map that the researcher followed in the conduct of data analysis in this study, leading to the answers to the research questions. The procedure has been generally accepted as a standard procedure in extracting relationships using the ISM technique.

7. Results and Findings

The results presented below are based on the systematic review of the literature, and the above is based on the steps followed in implementing the ISM technique.

7.1. Results from Systematic content-centric Literature Review

A systematic literature review was conducted from Scopus and ScienceDirect, and the initial search yielded 66924 journal articles on Supply Chain 4.0 among SMEs, published from 2000 to 2022. However, upon examination, a total of 18991 papers were eliminated owing to duplications in the databases, leaving 47933 journal articles eligible for primary screening. The primary screening of titles and abstracts resulted in 315 articles being considered for full-text reviewing. Finally, the inclusion/exclusion criteria were applied to the articles selected, and 129 articles were selected and considered for review. The results from the systematic literature review are presented in Table 1 below.

Table 1. The thematic antecedents from Systematic content-centric Literature Review

No.	Critical Antecedent	References
1	Technology acquisition partnership	Benitez et al. (2021); Mentzer et al. (2000).
2	Cybersecurity competency	Wong et al. (2022); Kiss & Muha (2018); Sobb et al. (2020).
3	Change management capabilities	Park & Koh (2015); Tavčar et al. (2018).
4	Supply chain 4.0 readiness	Sony & Aithal (2020); Makris et al. (2019);
5	Supply chain 4.0 external support	Sony & Aithal (2020); Ivanov & Dolgui (2021).
6	4IR technology expertise	Manzini (2021); Jacome (2021).
7	Long-term orientation and growth	Geissdoerfer et al. (2018); Kim, Chiou & Calantone (2018).
8	Mutual trust	Park & Kim (2021); Jermsittiparsert & Pithuk (2019).
9	Total quality management	Sriyakul, Umam & Jermsittiparsert (2019).
10	Organisational Culture	Prasanna & Haavisto (2018); Bae & Grant (2018).
11	Technology readiness	Frederico et al. (2019); Haseeb, et al. (2019).
12	Managerial competency	Harvey & Richey (2001); Derwik & Hellström (2017).
13	Resource availability	Gulley, McCullough & Shedd (2019); Tom et al. (2021).

From the literature review, a total of thirteen critical antecedents were derived, presented in Table 1 above. The literature review aided in identifying the critical antecedents for Supply Chain 4.0, while the ISM process was used to transform, refine, validate and create relationships

7.2. Results from Interpretive structural modelling

The ISM process was conducted following the nominal group technique (NGT), a widely used technique due to its robustness and collaborative decision-making technique (Harvey & Holmes, 2012). In total, the participants held three sessions via Zoom Meetings, and to ensure validity and reliability, execution steps propounded by Ghobakhloo (2020) were followed.

7.2.1. Collecting expert opinion

To start data collection and analysis, expert opinion was sought to identify the relationships among these antecedents, forming an integral component of the ISM procedures. The procedure prescribed by Hertzum (2014) in the selection of experts was applied. This is essentially a two-step approach starting with identifying a pool of experts in supply chain management and then applying the expert retrieval model. This model employs generic tools like semi-structured interviews to evaluate the experts' availability, commitment, and knowledgeable-ness. The procedure is applied predominantly to ensure the validity and reliability of the ISM outputs. Table 2 lists the demographic properties of participating experts who refined and validated the success antecedents of Supply Chain 4.0.

Table 2. Demographic properties of participating experts

No.	Country	Job Title	Academic Qualification
1	South Africa	Procurement Manager	Diploma in Supply Chain Management
2	South Africa	Associate Professor	Ph.D. in Business Management
3	South Africa	Lecturer	Masters in Computer Science
4	Poland	Data Scientist	Master in Data Science
5	Zimbabwe	Human Resources Manager	BSc in Human Resources Management
6	South Africa	Change Management Specialist	BCom in Business Administration
7	Zimbabwe	Director of Logistics	BCom in Logistics and Transport
8	South Africa	Strategic Procurement Manager	MPhil in Supply Chain Management
9	South Africa	Demand Planning Manager	Diploma in Operations Management
10	Namibia	Logistics Analyst	Diploma in Supply Chain Management
11	South Africa	Operations Manager	Masters in Business Administration

Source: Authors' Compilation

Four were excluded from a pool of fifteen experts initially selected in the first selection interviews. This was so because either they lacked conversational competence, understanding of the Supply Chain 4.0 concept and its industrial implications, or withdrew before the expert opinion extraction. In line with the COVID-19 restrictions on movement and physical contact, the expert opinion extraction sessions were conducted via Zoom Meetings. Semi-structured interviews were developed to ensure conversational competence and that the participants remain within the realms of Industry 4.0 and Supply Chain 4.0. this was also done to avoid "Yes" or "No" replies in favour of detailed answers. The refinement and validation of success antecedents was done within the first meeting.

7.2.2. Identifying the contextual relationships

Following the leads of the T-O-E framework and a systematic review of literature, a total of thirteen determinants were established, and the coding system highlighted below was applied to develop the Structural Self-Interaction Matrix (SSIM) on a pairwise comparison of variables. . Table 2 presents the SSIM for the study, which is a result of the selected experts' opinions. The results obtained from the analysis are presented in Table 3 below.

Table 3. The structural self-interaction matrix (SSIM) of barriers

No.	Critical Antecedent	13	12	11	10	9	8	7	6	5	4	3	2	1
1	Technology acquisition partnership	V	V	V	V	V	V	V	V	V	V	V	V	
2	Cybersecurity competency	V	V	V	V	V	V	V	V	V	V	V		
3	Change management capabilities	V	V	V	V	V	V	V	V	O	V			
4	Mutual trust	V	V	V	V	V	V	O	V	O				
5	Supply chain 4.0 external support	V	V	V	V	O	V	O	O					
6	4IR technology expertise	V	V	V	V	V	V	X						
7	Long-term orientation and growth	V	V	V	V	V	V							
8	Supply chain 4.0 readiness	V	V	V	V	A								
9	Total quality management	V	V	V	O									
10	Organisational Culture	V	V	V										
11	Technology readiness	V	O											
12	Managerial competency	V												
13	Resource availability													

Source: Authors' Compilation

There relationship between variables was expressed using the following four symbols denoting the direction of the relationship between the parameters *i* and *j*.

- “V – Parameter *i* will lead to parameter *j*”
- “A – Parameter *j* will lead to parameter *i*”
- “X – Parameters *i* and *j* will lead to each other”
- “O – Parameters *i* and *j* are unrelated”

From the results presented, it can be concluded that the factors obtained during the literature review significantly influence the adoption and implementation of Chain 4.0. The extent of significance in determining Supply Chain 4.0 was presented to magnify the strategic priority of the factors under consideration.

7.2.3. Reachability matrix

In line with the steps in ISM, the SSIM was converted into the initial reachability matrix, a binary matrix created by substituting *V*, *A*, *X* and *O* with 1 and 0 as the case may warrant. This process of the substitution of 1s and 0s is done in line with the following rules:

- “If the (i, j) entry in the SSIM is *V*, the (i, j) entry in the reachability matrix becomes 1 and the (j, i) entry becomes 0”.
- “If the (i, j) entry in the SSIM is *A*, the (i, j) entry in the reachability matrix becomes 0, and the (j, i) entry becomes 1”.
- “If the (i, j) entry in the SSIM is *X*, the (i, j) entry in the reachability matrix becomes 1, and the (j, i) entry also becomes 1”.
- “If the (i, j) entry in the SSIM is *O*, the (i, j) entry in the reachability matrix becomes 0, and the (j, i) entry also becomes 0”.

Table 4 below shows the initial reachability matrix emerging from implementing the above rules. Table 4 was further developed into the final reachability matrix shown in Table 5 by incorporating the transitivities described in Step 4 of the ISM procedure.

Table 4 Initial reachability matrix

No.	Critical Antecedent	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Technology acquisition partnership	1	1	1	1	1	1	1	1	1	1	1	1	1
2	Cybersecurity competency	0	1	1	1	1	1	1	1	1	1	1	1	1
3	Change management capabilities	0	0	1	1	0	1	1	1	1	1	1	1	1
4	Supply chain 4.0 readiness	0	0	0	1	0	1	0	1	1	1	1	1	1
5	Supply chain 4.0 external support	0	0	0	0	1	0	0	1	0	1	1	1	1
6	4IR technology expertise	0	0	0	0	0	1	1	1	1	1	1	1	1
7	Long-term orientation and growth	0	0	0	0	0	1	1	1	1	1	1	1	1
8	Mutual trust	0	0	0	0	0	0	0	1	0	1	1	1	1
9	Total quality management	0	0	0	0	0	0	0	1	1	0	1	1	1
10	Organisational Culture	0	0	0	0	0	0	0	0	0	1	1	1	1
11	Technology readiness	0	0	0	0	0	0	0	0	0	0	1	0	1
12	Managerial competency	0	0	0	0	0	0	0	0	0	0	0	1	1
13	Resource availability	0	0	0	0	0	0	0	0	0	0	0		1

Source: Authors’ Compilation

According to Cherdantseva et al. (2016), “the reachability matrix of a graph and its partitioning may be used to separate the components that are more likely to be impacted from those that are less likely to be impacted.” The final reachability matrix exhibits two significant components; each variable's driving power and dependence. In ISM methodology, the driving power relates to the total number of variables, including itself, which it may help to achieve. On the other hand, dependence refers to the total number of variables, including itself, which may help in achieving it.

Table 5. Final reachability matrix

No.	Critical Antecedent	1	2	3	4	5	6	7	8	9	10	11	12	13	Driver Power
1	Technology acquisition partnership	1	1	1	1	1	1	1	1	1	1	1	1	1	13
2	Cybersecurity competency	0	1	1	1	1	1	1	1	1	1	1	1	1	12
3	Change management capabilities	0	0	1	1	0	1	1	1	1	1	1	1	1	10
4	Supply chain 4.0 readiness	0	0	0	1	0	1	0	1	1	1	1	1	1	9
5	Supply chain 4.0 external support	0	0	0	0	1	0	0	1	0	1	1	1	1	6
6	4IR technology expertise	0	0	0	0	0	1	1	1	1	1	1	1	1	8

7	Long-term orientation and growth	0	0	0	0	0	1	1	1	1	1	1	1	1	8
8	Mutual trust	0	0	0	0	0	0	0	1	0	1	1	1	1	5
9	Total quality management	0	0	0	0	0	0	0	1	1	0	1	1	1	6
10	Organisational Culture	0	0	0	0	0	0	0	0	0	1	1	1	1	4
11	Technology readiness	0	0	0	0	0	0	0	0	0	1	0	1	1	2
12	Managerial competency	0	0	0	0	0	0	0	0	0	0	1	1	1	2
13	Resource availability	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	Dependency	1	2	3	4	5	6	7	8	9	10	11	12	13	86

Source: Authors' Compilation

7.2.4. Formation of ISM

From the final reachability matrix resented in Table 5, this study's structural model was generated by employing nodes and lines of edges. In this instance, where there is a relationship between antecedents *i* and *j*, this is represented by an arrow pointing from *i* to *j*. This results in creating a directed graph or digraph, which is later converted into a ISM model by removing transitivities in following the ISM methodology steps. The resulting ISM graph is as shown in Figure 3 below.

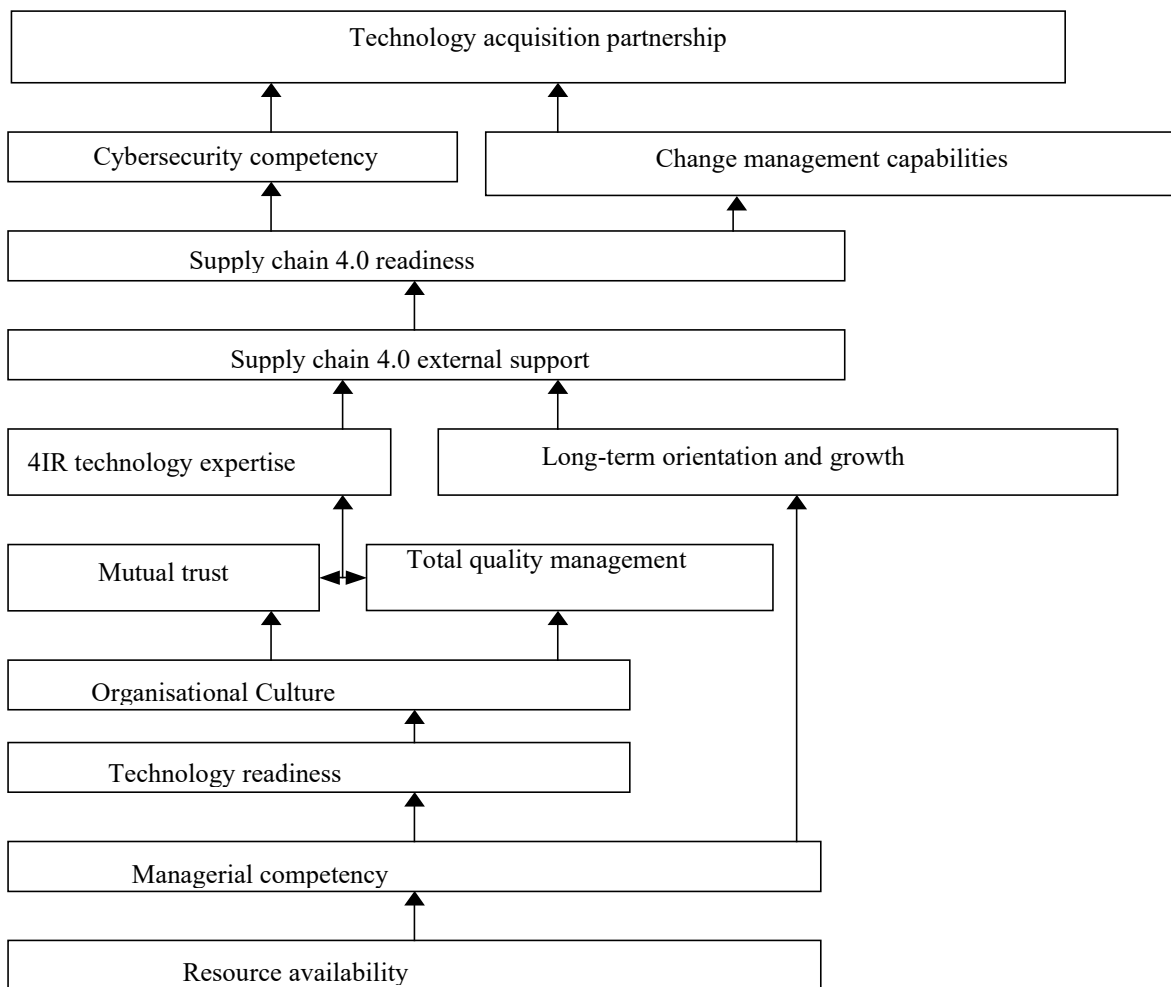


Figure 3 The Structural Model for Antecedents of Supply Chain 4.0 Success

The factors that influence success in Supply Chain 4.0 are presented in the figure above and this diagram illustrates the interrelationships between the factors. These factors are discussed in relation to Supply Chain 4.0 in the paragraph following.

8. Discussion of Findings

From the analysis conducted in this study, it can be noted that for SMEs in the manufacturing sector to implement Supply Chain 4.0 competitively, there is a need to work on organisational characteristics such as resource availability, managerial competencies and organisational culture. This will form the foundational characteristics that enhance the successful adoption of technologies needed to empower Supply Chain 4.0. It is interesting to note that the factors that SMEs need to take cognisance of manifest themselves at both strategic and operational levels. Further factors such as supply chain 4.0 readiness, external support, and 4IR technology expertise have also been uncovered as structurally significant prerequisites to the success of Supply Chain 4.0. Consequently, this provided the much needed answer to RQ1, which questioned, “What are the critical determinants of the maturity of Supply Chain 4.0?” In the ISM model, the factors are presented in the hierarchy of actions SMEs need to take to enhance success in adopting Supply Chain 4.0. through systematic literature review and the ISM model, RQ2, which dealt with “What is the relationship between identified critical success antecedents of Supply Chain 4.0?” was answered. These results are supported by Wong et al. (2022), who argued that factors such as cybersecurity capabilities and technological competencies are essential in enhancing the development of supply chains. Generally, unwarranted cyberattacks have been seen as a cause for the inability of organisations to generate revenue consistently. In line with the results from this study, other scholars such as Manavalan and Jayakrishna (2019), have maintained that 4IR readiness, among other technology capabilities, should be made available only during the adoption and implementation of Supply Chain 4.0 but also during the ongoing management and evolution of the supply chains. RQ3 on “What are the managerial implications emanating from this research?” was answered in the subheading following.

9. Managerial Implications

This study presents an overview of the factors that drive Supply Chain 4.0 success among manufacturing SMEs in South Africa. Managers tasked with running SMEs in South Africa's manufacturing sector must commit to integrating the technical and non-technical factors into their strategies to influence the adoption and success of Supply Chain 4.0. Since the current study focused on manufacturing SMEs, due care should be observed when generalising the current study's results to a broader population. To enhance the success of Supply Chain 4.0, SMEs need to gunner for technological partnership and external support for the emerging phenomenon. Concerning technologies, firms need to work on strategies to enhance 4IR technology adoption. As stated by Tripathi and Gupta (2021) “technologies such as IoT will facilitate global SC with sensors to automate, coordinate and synchronize the flow of information and goods, and enhance SC efficiency”. Managers and owners of SMEs also need to pay attention to organisational factors such as change management capabilities and mutual trust, as these have been found to augment successful transformation to Supply Chain 4.0. Small and medium enterprises need to enhance their technological capabilities to attain an acceptable level of information, digital, operations, and cyber readiness.

10. Conclusion

In South Africa, manufacturing SMEs are lagging in adopting Industry 4.0, let alone supply chain 4.0. The current study examined the factors influencing the success of Supply Chian 4.0 adoption and implementation among manufacturing SMEs under the Industry 4.0 agenda. This provides an opportunity for SMEs to leapfrog their current challenges and adopt technologies and systems that will drive Supply Chain 4.0. The thirteen Supply Chain 4.0 success antecedents determined through a systematic review of literature and ISM are essential for the success of SMEs. Owners and managers of SMEs much take cognisance of these factors to succeed in this era of technological advancement. This ISM model developed in this study lays the foundation for future quantitative studies on the development of Supply Chain 4.0 in South Africa. This study's contribution to the existing literature is two-fold: firstly, the research findings provide a helpful reference on factors to consider when seeking to improve Supply Chain 4.0 adoption decisions among manufacturing firms. In addition, while similar antecedents have been examined before, this study chose a different context to examine these factors and used different lenses of the T-O-E framework rarely used in such studies.

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LEADERSHIP AND ETHICS



An Analysis of EPMS, Motivation, Career Advancement, and Development Levels of Employee Performance

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Keywords

EPMS; Motivation;
Career advancement;
Development

Abstract

Contemporary businesses face unprecedented challenges. Shareholders want higher returns on their investments, while companies want increased efficiency and lower costs. On the other hand, employees expect both financial and non-financial rewards to motivate them to perform. Organisations are integrating staff health programmes, support programmes, learning and development, and integrated reward systems in order to stay up with the demands of their environment. The study sought to find out if there is relationship between Employee Performance Management System (EPMS), motivation and career advancement and development levels on employee performance. An alcoholic beverage producer in South Africa was used as a case study. Data were obtained by the use of an online survey instrument or CSAQ (Computer-Assisted Self-administered Questionnaire) from people who were knowledgeable about the topic. SPSS Version 26 was used to analyse the data from 153 participants. EPMS, motivation, career advancement, and development showed a statistically significant (p -value <0.05) positive correlation. As a result, the hypothesis was rejected. The findings cannot be applied to other businesses because the study was conducted in a single company.

1. Introduction

Organisations come in all shapes and sizes and often possess more differences than similarities. However, one common factor amongst them is that their success or failure depends on the skills, knowledge, and experience of their employees (Mohammedi, 2013). Human capital is one of the most important resources an organization can have in its possession; this is because human capital is a significant competitive factor due to its potential for uniqueness (Al-Sada, Al-Esmael & Faisal, 2017). Employees are valuable assets to the organization because they are the one factor that cannot be imitated by competitors (Anitha, 2014).

Scarcity of resources (human and financial) and aggressive competitors are among the factors that compel organizations to consider strategic approaches of satisfying employees and keeping them motivated (Al-Sada et al., 2017). The performance of employees is a key driver in the attainment of organizational goals. Modern-day organizations depend on measurements and analysis of performance to succeed (Boateng & Agyen-Gyasi, 2014). Most organizations utilize an Employee Performance Management System (EPMS) to measure and analyse employee performance. The primary goal of EPMS includes performance measurement and providing feedback on employee performance, linking the activities and outputs of employees to the strategic objectives of the organization (Kanfer, Chen & Pritchard, 2008). Elorza, Harris, Aritzeta, and Balluerka's (2016) research on strategic human resource management found that there is a positive correlation between organizational performance and its systems.

EPMS is described by Boateng (2015) as a formal process utilized by organizations to assess employee's performance against a pre-set criteria and organizational objectives. Armstrong (2009) defines EPMS as a systematic process for improving organizational performance by developing the performance of individuals and teams, and getting better results by understanding and managing performance within an agreed upon framework of planned goals, standards and competency requirements. Motivation, career advancement, EPMS and development are critical management tools that correlate employee performance and performance of the company to strategy (Vieira, O'Dwayer, & Schneider, 2016). Viera et al. (2016)

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further state that the EPMS assists companies to focus on critical key performance areas and key performance indicators. Research has demonstrated that EPMS is a great tool that enhances performance owing to its feedback element (Sono, 2014; Hendricks, 2015).

Some scholars (Hendricks, 2015; Sono, 2014 and Bulawa, 2012) researched extensively the challenges faced by organizations in implementing the EPMS system in various sectors. The study by Sono (2014) found that feedback from EPMS played a major role in motivating operational-level employees. He further pointed out that EPMS helped to enhance operational-level employees' performance. However, the study was limited to the steel production company and cannot be generalized to other organizations in South Africa.

At the organization under study, the EPMS was implemented in 2016. The reasons for implementation was to derive the following benefits; it is a major contributor in the alignment between the organizational, team, and individual goals, it can track and communicate corporate, team and individual performance and it helps in meaningful rewarding/compensating of teams and/or individuals. The EPMS system is also used to determine training and development needs; it plays a crucial role in talent management and staff retention. Lastly, the EPMS assists in the corrective action process and in the termination of an employee's service.

2. Problem Investigated

At the organization under study, there are numerous personnel concerns with regards to EPMS. These include relatively high staff turnover and low climate survey scores. In the year under study, the climate survey was 69% satisfaction. Climate survey is defined as a measure or predictor of job satisfaction. It is often linked to employee engagement, which measures the employee perceptions on the impact of their work environment on their wellbeing (Huang, Zhou, Lv, & Chen, (2020).

At the organization reviews are fused with career planning, training and development needs. The fusing of these processes might result in the process being ineffective because during performance appraisals, employees are less receptive to development and are more geared toward a good review score. As a result, this might have a negative implication on the motivation of operational level employees. There is no clear evidence on how the EPMS and career advancement and development process influence the motivation of operational employees. This study will attempt to understand the influence of EPMS and career advancement and development on the motivation of operational level employees.

3. Research Objectives

- To determine if there is a positive and significant correlation between EPMS and motivation.
- To determine if there is a positive and significant correlation between EPMS and career advancement and development.
- To determine if there is a positive and significant correlation between career advancement and development and motivation.

4. Hypotheses

The following hypotheses were formulated for the study:

- H₁: There is no significant positive correlation between EPMS and motivation.
- H₂: There is no significant positive correlation between EPMS and career advancement and development.
- H₃: There is no significant positive correlation between career advancement and development and motivation.

5. Literature Review

The literature review covers the 3 main constructs of the study, namely EPMS, career advancement and development and motivation. This is presented next.

5.1. Employee Performance Management System (EPMS)

Zhang (2012) define EPMS as a process of ensuring that employees concentrate on their duties in ways that contribute to the attainment of the organizations' strategic mission. EPMS is a progressive process predominantly concerned with employee and system development to deliver sustained high performance (Armstrong, 2009). Armstrong and Baron (2014) defined EPMS as a "strategic and integrated approach to

increase the effectiveness of the organization by enhancing the performance of the employee who works in them and by developing the capabilities of teams and individual contributors.” The integrative nature of the EPMS is deemed necessary because it facilitates the achievement of organizational strategic objectives with simplicity (Anitha, 2014). The integrated approach provides employees with a realistic view of their performance and, on the other hand, it serves as a useful framework for devising and implementing an effective EPMS. Armstrong and Baron (2014) state that a performance management system is often utilized by the managers to align the goals of the organization to those of their employees, thereby ensuring productivity. EPMS is a progressive process predominantly concerned with employee and system development to deliver sustained high performance. They further defined performance management by depicting the characteristic of a performance management system, see table 1, below.

Table 1. The characteristics of a performance management system

<p>Characteristics of a performance management system:</p> <ul style="list-style-type: none"> • It communicates a vision of its objectives to all its employees. • It sets departmental, unit, team and individual targets that are related to wider objectives. • It conducts a formal review of the process towards these targets. • It uses the review process to identify training, development and rewards outcomes. • It evaluates the whole process in order to improve effectiveness. • It defines a managerial structure to look after all the characteristics above, so that the individual staff and managers are assigned specific responsibilities to manage the performance management system. <p>In addition, the performance management organisations</p> <ul style="list-style-type: none"> • express performance targets in terms of measurable outputs, accountabilities and training/learning targets; • use formal appraisal procedures as ways of communicating performance requirements that are set on a regular basis; and • link performance requirements to pay, especially for senior managers.
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Source: Armstrong and Baron (2014:45)

Choong (2014) filched different definitions by different scholars and describe EPMS as an accounting system that help analyse and interpret information, undertakes strategic and management accounting activities, measures business performance and reports on business activities, measures key performance indicators; check the validity of the cause-and-effect relationships among the measures; detects variance, operating mechanism that enables a business to plan, measure and control its business and people performance to ensure that there is alignment with business strategy to create shareholder value. EPMS measures and provides feedback and control mechanisms to the business.

EPMS is a set of activities adopted by organizations to enhance employee performance by providing employees with ongoing feedback formally and informally (Sowa & Selden, 2011). Sowa and Selden (2011) further state that feedback from the EPMS process and recognition play a vital role in motivating employees. The definition adopted for this study is by Sowa and Selden (2011); this definition covers most of the elements that are going to be researched by this study. It emphasizes the point of EPMS being a leading stimulus that enhances the performance of employees, moreover; the definition confirms the importance of ongoing formal and informal feedback from the EPMS process. The approach comprises inclusive conversation with the employee, employee development to be future-fit, and taking corrective action where necessary. Lastly, the definition by Sowa and Selden (2011) recognizes and highlights that there is a link between EPMS processes and employee motivation. The above definition confirms Chubb, Reilly, and Brown's (2011) argument that EPMS is both forward and backward-looking. Backward-looking approach entails structured reviewing employee past performance and identifying performance gaps. Forward-looking approach involves taking cognisance of changing business scenarios, shortened cycle times, and the changes in employee demographics due to globalization.

5.1.1. Benefits of implementing an EPMS

Organizations are made of different stakeholders; such as shareholders, customers, management and employees of the organization and communities that they serve. The focal point for this study is only management and employees. Management structures are made of different levels, namely: strategic, which comprises of executive, tactical level consisting of middle management and operational level, which is made up of lower-level management level. The vision, mission, and strategic objectives are devised at the strategic level and then cascaded into the tactical level and ultimately filtered down to the operation level for implementation.

To enable seamless implementation of strategic objectives, the short-and long-term goals of the organization should be translated into business units' goals and also be further converted into each employee's goals and objectives (Serakwane, 2005). The day-to-day activities of the organization should support the strategic objectives for the organization to be successful and outperform its competitors (Serakwane, 2005). Communication is the golden thread that keeps these stakeholders together.

Although there is a divergence in scholars' views regarding the EPMS effectiveness, there is substantial evidence supporting the strategic role of the EPMS in organizations and its benefits of enhancing employee performance, which results in sustainable competitive advantage. There is a symphony of compliments for the EPMS system, from improved communication between management and employees (McGilloway, 2005). The improved communication has several benefits:

- Core pillar in the alignment of organizational strategic objectives and team, individual goals.
- EPMS saves time by empowering employees to make their decisions
- It eliminates misunderstandings between employees as to who handles which task.
- It assists in decimating the error rate and employee mistakes by identifying causes of error.
- It helps in driving out inefficiencies caused by repetition due to a lack of clarity on the path of employees.
- An exponential increase in performance is realized.

To add to the symphony of benefits by (McGilloway, 2005), different scholars also highlighted additional benefits of EPMS. Paile (2012) says EPMS promotes trust through joint planning, constant communication, and ongoing feedback. The value of joint planning ensures that the organization experiences less wastage because deviations are identified and corrected faster. Open and constant communication ensures that efforts are not duplicated, which results in wastage. The feedback from EPMS reinforces and enhances employee performance and it is also known to be informative and lift employee morale. It is through the EPMS process that clarity is shared on performance expectations and performance standards (Hendricks, 2015). Goals that are derived from organizational objectives are set and monitored through the EPMS processes to ensure that activities carried out by employees conform to the expected organizational standards (Ramataboe, 2015). EPMS processes are geared to ensure that the employees acquire the right skills, knowledge, and competency to carry out their activities/tasks, which eliminates mistakes proactively (Hendricks, 2015). EPMS identifies the areas of improvement timeously and imparts the required skill, which will build employee confidence or self-esteem. Hendricks (2015) states that if an employee is confident, the performance is enhanced automatically.

5.1.2. Challenges in implementing the EPMS

Although EPMS is praised for managing employee performance, on the contrary, some scholars argue that there is evidence suggesting that the 360-degree tool used to build a picture of an employee's performance is distorted and ill-used. Davis (2012) argues that anonymity in the EPMS system allows for subjectivity in the EPMS process. The system's reliability and validity are still being questioned by its opponents (Gupta & Kumar, 2013). Davis (2012) pointed out seven factors that impede a smooth implementation process. These are:

i. Direct biasness

Serakwane (2005) supports the views of Davis (2012) and maintains that EPMS have an element of subjectivity; the subjectivity might stem from factors such as favouritism, inadequate evidence, or manager lack of system knowledge.

ii. Indirect biasness

Dangol (2021) supports the views of Davis (2012) and postulates that poorly designed EPMS system lead to indirect bias. He states that there is a tendency to focus more on the weakness of an employee instead of strengths, which create friction between the employee and manager.

iii. Competency

To add to Davis (2012) view, Serakwane (2005) pointed out that most managers are not formally trained to use the system (EPMS) or don't know how to conduct performance appraisals. Therefore, when it's time to conduct performance reviews and to have development discussion, line managers go through the process to just tick the boxes and complete it without going into a deeper conversation with employees. This type of behaviour erodes the credibility of the system and also lessens the trust employees have in the system.

He further highlights another dilemma, which is that of line managers having to contend with being a specialist in their respective fields/disciplines. He further elaborated that line managers are result and deadline-driven and that may weigh down the attention given to the EPMS by these managers.

In a recent study, Kim and Holzer (2017) found that employees were not completely satisfied with the rating from their supervisor, whereas, on the other hand, the supervisor perceived EPMS as a distasteful chore, because it conflict with other chores. The study also found that the employees were left with a sense of dissatisfaction because they believed they were unfairly rated. The negative perception towards EPMS causes resistance by employees due to supervisor/manager competency; in some cases, it leads to underperformance because of motivational level.

iv. Devolution

According to Davis (2012), EPMS is designed by the HR department however, the implementation is done by line managers. The consequence of this action is that there is little or no buy-in at all from the line managers and that gets rolled down to employees without robust engagements with them. According to Serakwane (2005), one major challenge of EPMS is flexibility. It is conducted at a prescribed time and has a preconceived procedure and format. The obstinate format channel the discussion and does not allow for in-depth and rigour deliberations which might be more relevant for the discussion.

v. Authoritarianism

Authoritarian leaders emasculate employee confidence and that may lead to employees resorting to leaving the organization because of poor treatment (Pulakos, 2009). The lack of training has been identified as the biggest challenge faced by organizations and it leads to improperly implemented EPMS and thus the reluctance from employees to trust the system. Coupled with the lack of training for managers, it's the lack of training for employees to participate in the EPMS session (Davis, 2012).

vi. Informal and incidental appraising

Gomez-Mejia, Cruz, Berrone, and De Castro, (2011) concurs with Davis (2012) and state that employee development and performance enhancement discussion fused together with salary increase discussion are ineffective because at that moment employees are less receptive to development and more geared towards a better salary increase. Unsubstantiated and negative feedback provided in an improperly conducted EPMS review session damages the sense of fairness towards the EPMS by employees (Gomez-Mejia, et al., 2011). The other challenge with EPMS is what is referred to as "short-termism". The phenomenon results in dysfunctional consequences and damaging impact on employees. The absence of robust discussion, lack of competency on the path of managers, lack of career path leads to EPMS being considered another one of those tools that are invaluable to an organization.

vii. Information collection

Due to EPMS not being a priority to line management, they are often on the bottom of the radar or the "To-do list" they are considered an unpleasant process and time-consuming (Serakwane, 2005). Therefore, they are considered time-consuming, the EPMS process is done hastily with little or no preparation at all. They are completed to meet the deadline set by the organization's HR department, just a tick box exercise. In this case, from the above review, how does EPMS relate to motivation? The above arguments should all be about the relationships.

5.2. Personal development plan

Personal development is defined as a strategy that empowers staff with learning proficiency both internally and externally in the workplace, which enables the organization to achieve its envisaged strategic objectives (Arogundade et al., 2015).

The personal development plan is implemented to stimulate employees to undertake learning and development activities (Arogundade et al., 2015). The need for training is identified by both the manager and employee during the performance review discussion. The training intervention needed is documented in a personal development plan report; this report is then submitted to the HR department for capturing and procuring of services. Training is undertaken to reinforce and improve existing skills and knowledge of employees whilst employee development is future-focused.

5.2.1. Personal development and motivation

According to Baldwin et al. (2014), personal development is a crucial motivational factor. He defines personal development as a strategy that empowers staff with learning proficiency both internally and externally in the workplace, which enables the organization to achieve its envisaged strategic objectives. According to Baldwin et al. (2014) the training and development of employees is not only considered being a key driver of sustainable competitive advantage but also a motivational strategy that harnesses innovation and blue-sky thinking. A personal development plan is a skills development plan/document which outlines the development plan for an employee, agreed to by both the employee and his/her manager. The involvement of employee in the discussion of their development and career planning provide employees with a sense of ownership which motivates employees (Kuhil & Michael, 2019). This useful document is then used to track training and development progress.

The personal development plan is furthermore used as a stimulus for the employee to undertake learning and development activities, which in turn is presumed to improve professional expertise and growth (Eisele et al., 2013). Research has shown that training and development is a crucial factor in improving employee engagement because training improves service accuracy and it enhances performance (Anitha, 2014). According to Baird, Schoch, and Chen (2012) training is a planned program designed to enhance employee knowledge, attitude, skills, and most importantly, changes in behaviour. Baird, Schoch, and Chen (2012) further states that training is essential in overcoming employee resistance to change. Moreover, Baird, Schoch, and Chen (2012) said training played an instrumental role in the success of new projects. According to Wood and West (2015), there are many ways in which training and development can be conducted. All these methods, such as Demonstrations, Simulations, On-the-job training, Coaching, E-learning, Job rotation, all help to skill, empower and motivate the employee. For example, job rotation is an effective and proactive way of imparting skills to new employees by actually doing them (Wood & West, 2015).

A personal development, firstly acts as a training need analysis, plan focuses on the shortcoming of an employee which might hinder his/her career progression and secondly it is future focused (Kuhil & Micheal, 2019). Future focus entails employee discussion with the manager and formalizing the discussion through a process known as career planning. Career planning discussion leads to employee motivation and possible retention.

5.2.2. The value of career development and advancement

Human resource policies and systems that support modern-day businesses are of great importance to an organization's human resources retention strategy (Callakoppen, 2016); because employees are considered a key strategic asset to the organization (Boateng & Agyen-Gyasi, 2014). The lack of career development and advancement is a major contributor to employee dissatisfaction and staff turnover (Davis, 2015). Staff turnover of key personnel in an organization can have a disproportionate impact (Armstrong & Baron, 2014). In a recent survey conducted in Australia, it was found that out of 205 employees that were surveyed, 69% postulate that lack of career opportunities is one of the major reasons why employees leave the organization (Davis, 2015). Employee dissatisfaction is often linked to low commitment levels and high staff turnover, which subsequently affects employee performance and motivation negatively (Sharma & Sharma, 2017). The inability of an organization to retain high-potential

and talented employees poses a huge threat to strategy implementation (Letchmiah & Thomas, 2017). When employees leave the organization, they take with them valuable knowledge and skills.

Career planning is a structured exercise undertaken to identify an employee's career aspirations in line with organizational objectives. It is the vital part of career management which deals with shaping employee progression or job upward mobility within the organization (Armstrong & Baron, 2014). Armstrong and Baron (2014) further pronounce that career planning involves the charting of employee career paths within an organization. Career planning and management is not a retrospective process, but a future-focused process. It is concerned with ensuring that the organization's talent bench is occupied by employees with appropriate skills, knowledge, and abilities, in short talented employees. Moreover, career planning and management focus on succession planning. It is an ongoing process through which employees set out their professional career objectives and identify and devise the means to achieve them. The career plan helps both employees and managers to take stock of where the employee is, where they are going in terms of their career, qualifications, competency, and readiness for promotion. This motivates employees to develop a skill that they don't have and work harder because they have a goal in mind to achieve. Consequently, this enables a company to retain talent because their morale has been boosted by this process. The one common way of successfully planning an employee's career is through employee and manager career planning discussion. Davis (2015) recommends that career planning should be isolated from performance review discussion to elevate its status and avoid confusion. The absence of skills audit, career planning, and succession planning exacerbate the misalignment between talent management and EPMS driven by human resources planning (Davis (2015)).

5.3. Motivation

Motivation is defined as the "degree to which an employee wants and engages in certain stipulated behaviour" (Al-Sada et al., 2017). In performing duties; what propels employees is motivation. Motivation helps stimulate employees to want to achieve more, be productive, and have harmonious relationships with fellow colleagues.

Motivation helps stimulate employees to want to achieve more, be productive, and have harmonious relationships with fellow colleagues. Research has shown that employees perform at their best when they perceive their job to be meaningful, perform work that leverages their personal strength and aspirations (Ong, & Jambulingam, 2016). Alghazo and Al-Nani (2016) postulate that it has been proven that there is a strong correlation between achievement and employee motivation. They maintain that motivated employees are highly likely to be top achievers. This is because motivation is intricately entwined with human emotions (Crumpton, 2013).

Crumpton (2013) recommends active coaching to motivate employees. He endorses 6 active coaching techniques:

Reward excellent performance at all times

Crumpton (2013) supported the view that says given the pivotal role rewards play, while Taylor proposed "a fair day's pay for a fair day's work" to induce motivation because he believed that money motivates employees (Armstrong & Baron, 2014). Good wages may lead to greater intrinsic motivation because an employee may consider themselves competent.

Giving positive feedback and recognize efforts publicly

To raise employee self-esteem Crumpton (2013) vouch for positive feedback and recognition. Gomez-Meija et al. (2011) states that positive feedback is a stimulus for employee motivation and it also drives performance however, negative feedback has an adverse result on employees' performance. He further states that positive feedback activates good behaviour, which is highly likely to be repeated by employee whilst negative feedback yield no result and leads to a drop in performance.

Use non-monetary rewards to incentivise good performance

Different scholars support Crumpton (2013) in using non-monetary rewards as incentives for good performance. Harunavamwe and Kanengoni, (2013) argue that the significance of money as the main motivator has always been downplayed by behavioural scientists such as Herzberg who pointed out that the value of constructive feedback (EPMS), challenging job, teamwork, and non-monetary factors act as

stimulants to motivation. Bowden et.al., (2016) advocate for promotion, career support, and recognition to motivate employees. Another scholar, Gordon, (2017) commends autonomy as the incentive to motivate employees. He states that giving an employee the right to make decisions motivates them. From the above statement it is clear that employees are not only motivated by money. There are, therefore, other elements that managers have at their exposure.

Listen carefully and understand to respond appropriately

Davis (2012) recommends the following training for managers and employees to successfully participate in EPMS session; listening skills, communication skills which enhance engagement and negotiation skills which assist each party to reach consensus in appraisals.

Show empathy and interest by asking questions to clarify details

The most striking trait of empathy is care, attention, and understanding (Molokomme, 2013). Molokomme (2013) further states that empathy is the consequence of a manager's willingness to understand employees and pay undivided attention. The concept of empathy encapsulates a customized solution for each employee.

Lead by example and demonstrate collaboration

The most important characteristic of a leader is to lead by example, this is because leadership is defined as competencies and processes essential to empower and enable an ordinary employee to do extraordinary things (Arnold, 2007). In addition, leadership is about persuading employees not controlling them.

5.4. EMPS, Career advancement and development and motivation

Motivation is such a complex concept because if an employee lacks the ability, training intervention can be employed to skill the employee. If the work environment is problematic, culture alteration can enhance performance. However, if employees lack motivation, the solutions are not clearly prescribed (Clark & Saxberg, 2019). Employee well-being might be negatively affected by the lack of optimism about the future (Guest, 2017). Hendricks (2015) claims that, if employees have positive emotions, they will do more than they are requested. Research in this area has shown that when employees are fairly rewarded for their efforts, treated with dignity and respect, they perform at peak and they will go the extra mile. Although the correlation between rewards (money) and satisfaction is significantly weak (0.25), it is scientifically considered meaningful because employees rely on money for life satisfaction (Wood & West, 2015). This is supported by Herzberg's theory, who postulates that if employees are dissatisfied with hygiene factors (pay and rewards) they will be demotivated.

It is evident from the literature that career advancement and development has a significant relationship with motivation, which ultimately affects performance. Well-trained employees tend to be highly motivated, confident and productive (Makhubedu, 2017). Therefore, investment in employee development and advancement has proved to be fruitful because not only does the employee benefit but the organization reap benefits, from competent and productive employees and reduced/low staff turnover. Organizations that invest in employee development tend to have competent employees who possess the right set of skills and capacity to make discretionary decisions. Wood and West (2015:225), states that: "With respect to organizational performance, training and development was found to predict key outcomes, specifically productivity, quality (including high levels of customer satisfaction), objective organizational performance and managerial perceptions of performance". Career advancement contributes to increased employees satisfaction, low absenteeism, lower staff turnover and positive employee attitude (Wood & West, 2015)

6. Research Methodology

The research paradigm, research approach, and research methodology adopted for this study are discussed in detail. Firstly, the research approach is discussed in detail below.

6.1. Research approach

The study adopted a quantitative research approach. Quantitative research aims to measure or establish a relationship between measured variables (Ledwaba, 2015). Ledwaba (2015) further states that the strength of quantitative research is that the researcher is an objective observer, and he does not participate

in the study, which might influence the results of the study. Quantitative research was chosen for this study because of the following reasons:

- Result can be analyzed objectively.
- It allows for hypotheses to be tested.
- It offers a very concise and narrow focus
- Data is in the form of numbers.

6.2. Research design

The widely used research designs in quantitative research include experimental methods, observation techniques, and survey research (Fox & Bayat, 2008). The study followed a survey approach. Survey research is the most preferred and most frequently used research design in social science (Babbie & Mouton, 2021). The reason for the extensive use of surveys is as a result of advances in computer technology; which has made it much easier to analyze large data set in a few seconds. The survey method is also convenient because they can be completed anywhere, anytime without the hassle of having to have a face-to-face discussion.

6.3. Sampling method

There are two sampling methods, namely probability and non-probability sampling. A non-probability sampling method has been preferred for this research. According to Ritchie et al. (2013), non-probability sampling has certain benefits: it enables one to have confidence that the sample is not biased, which may lead to data contamination and it is also accurate in terms of data robustness. This sampling method is convenient and cost-effective (Fox & Bayat, 2008).

A judgemental or purposive sampling method was chosen for the study. The significance of the purposive or judgemental sampling method is that it assists in only selecting the population with knowledge about the study at hand (Fox & Bayat, 2008). For this study the following criteria was applied:

- Must be an employee at the organization
- Should be 18 years and older
- Should have an email address
- Should be an operational employee and not senior management

6.4. Data collection method

The data collection instrument adopted for this study is a self-administered questionnaire. Close-ended questions were chosen because they provide uniformity of response from participants and they are very easy to process (Babbie & Mouton, 2021). The researcher has attempted to avoid double-barrelled questions; this is an effort to ensure that the respondents are not confused and only the best answer is selected.

The study opted for a computerized self-administered questionnaire (CSAQ). In this method, the respondents independently complete a questionnaire on their cell phone or computer. The respondents receive the computerized self-administered questionnaire via email; the email contains the link in which the questionnaire can be accessed. Also included in the electronic mail is the newest innovation in accessing the questionnaire, a QR code that can be scanned using smartphones and it leads the respondents straight to the questionnaire. Google forms were the chosen software for the questionnaire for this study.

The respondents had an option to click on the link or open a QR code and completed the questionnaire; the software populated and submitted their response online. The software accepted the responses and returned the data file. The method was also preferred because the respondents are all computer literate and have access to a cellphone or computer. And the organization under study can receive the summary of findings in an electronic format, immediately after the study is concluded; cutting out the costly printing of results. The non-printing of findings contributes to maintaining a green environment.

6.5. Research instrument

The questionnaire was broken down into 2 sections, section A and section B. Section A of the questionnaire collected biographical information. Section B covered questions on the three main study constructs namely, EPMS, motivation, and lastly, the career advancement and development. First biographical information will be discussed in details below:

6.5.1. Section A

The biographical information was self-developed by the researcher and it incorporated the following personal information about the participants:

- The respondents' gender.
- The age group of the respondents.
- The duration of employment.
- The status of employment.
- The level of education.
- The salary job grade.
- Confirmation of whether the participants have an annual review with the manager or supervisor.
- Lastly, to confirm if the employee has ever considered leaving the organization in the last 12 rolling months.

6.5.2. Section B

Section B covered the constructs of the study EPMS, career advancement and development, and motivation. Each construct consisted of 8 questions. A 4-point Likert scale was used for this study. Firstly, the EPMS questions are discussed in detail below followed by the motivational questions and then lastly career advancement and development questionnaire is discussed in details.

For EPMS, the participants were requested to indicate the importance of certain elements to them on Likert rating. 1= not important at all, 2 = representing low importance and 3 = representing important and lastly column 4 = representing very important. EPMS was made up of the following elements, employee key performance areas, importance of promotion, coaching of employees and regular feedback. The questionnaire is grounded in Herzberg's two factor theory. The participants were instructed to choose only one answer per question and also the design of the question made it impossible to choose 2 answers.

For the second construct, a similar approach was taken. A 4-point Likert scale was used to capture the extent to which some elements contributed to the participants' motivation. Motivation questions included a mixture of hygiene and motivational factors, derived from a study by Ozsoy (2019). Motivation covered the following elements, challenging work, recognition of employees, respect, and rewards. The scale was coded from 1 to 4, 1 = being little extent, 2 =, 3 = and 4 representing great extent.

Lastly, for career advancement and development, the participants were requested to indicate the level of importance of each element to them. The elements includes training, career development plan, job rotation to enhance employee skills and a personal development plan. The questions were rooted in Herzberg two factor motivational theory. The questions were coded from 1= not important at all, 2 = representing low importance and 3 = representing important and column 4 = representing very important.

6.6. Population

The research was conducted at a large global liquor brewing company that employs over 10 000 employees worldwide. In South Africa, the company employs over 753 employees. The survey was sent to 730 employees, of which 153 responses were received back, a fair representation of the population (21%) under study and also adequate for the study. The study was spread by a well-diverse ethnicity, a good representation between male and female, and a cover of all departments in the organization.

6.7. Data analysis

Due to the nature of the research approach being quantitative, data in this study was analyzed utilizing computerized quantitative techniques. The latest version of Statistical Package for Social Science (SPSS version 26) was utilized to analyse data. The method is effective when data is collected primarily through

surveys (Fox & Bayat, 2008). For data presentation, tables and figures were used. To make data interpretation and analysis easy, a descriptive and inferential statistics techniques were employed.

7. Results and Findings

7.1. Inferential statistics

According to Moodley (2011), inferential statistics are statistical techniques that assist in decision-making or predictions about the population based on data obtained from a sample of that population. Inferential statistics for this study included correlation analysis test. First, the factor analysis discussed in details.

7.2. Exploratory factor analysis

According to Pallant (2010), factor analysis is a data reduction strategy; it takes large data sets of variables and converts it into smaller sets of factors. To explore data in the study and gain a good understanding of which factors represent the data, exploratory factor analysis was utilized as suggested by Roux (2010). There are two types of factor analysis, namely confirmatory factor and exploratory factor analysis. Exploratory factor analysis is usually utilized in the initial stages of the research to explore the interrelationship amongst the variables. Exploratory factors analysis was performed in this study as construct validity. Before the factor analysis was performed, the Kaizer-Meyer-Olkin measure of sampling adequacy and Bartlett's Test of Sphericity were conducted first.

Table 2: KMO and Bartlett's test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.754
Bartlett's Test of Sphericity	Approx. Chi-Square	824.653
	df	91
	Sig.	0.000

Source: Own compilation

The Kaizer- Meyer-Olkin measure of sampling adequacy assesses whether the sample size suffices for factor analysis or not. It is recommended that a study should attain a 0.6 and above rating to be considered sufficient to do a factor analysis (Pallant, 2010). If the study attains less than a 0.6 rating, it is deemed to be insufficient or the sample size is too small. A p-value = 0.754 rating has been achieved, which means the sample size is sufficient and factor analysis can be conducted.

The Bartlett's test of sphericity assesses if there is enough correlations between the variables for factor analysis. It is recommended that a study should attain $p < .001$ (Pallant, 2010). The study has a significant value of $p < .001$ which means there are enough correlations between the variables for factor analysis. According to the Extraction Pattern Matrix, 3 factors were extracted. These align very well with the constructs that were developed in the questionnaire. Roux (2010) postulates that only factors with an Eigenvalue greater than 1 can be retained for a study. The factor loadings are discussed in more detail under the reliability and validity heading below.

Reliability and validity

The researcher took the precautionary measure to ensure that the study is not biased and the views of the respondents are not diluted or influenced. Several measures were also taken to ensure that the study is both valid and reliable. The study adopted a construct validity model. Construct validity is defined by Notelaers and Van Der Heijden (2020), as "the degree to which a test measures what it claims or purports to be measuring". It is utilized to check the quality and the accuracy of the research tool. The study shows adequate construct validity. The results are shown in Table 3.

It is clear on the Eigen values that there are some components from 3 factors which can be extracted from the study for the data interpretation purpose. According to Roux (2010) only factors with an Eigenvalue greater than 1 can be retained for the study. On component 1, which EPMS there are 5 factors which are loading high and on component 2, Motivation, there are 4 factors loading high and lastly on component 3, training and development, there are 5 factors loading high.

Table 3: Summary of Exploratory Factor Analysis and Reliability Results.

Factors	Factor loadings	Eigenvalues	Variance explained (%)	Cronbach's Alpha Coefficient
Factor 1 :EPMS				
EPMS1. How important is it to you to have clear and agreed performance objectives?	0.854	4.664	33.317	0.808
EPMS2. How important is it to you to sit with your direct manager/supervisor to discuss and set annual key performance areas?	0.752			
EPMS3. How important is it for you that you get promoted to the next job grade based on your performance?	0.698			
EPMS4. How important is it for you to have an EPMS?	0.671			
EPMS5. How important is it to you that your performance determines your salary increase?	0.639			
Factor 2: Motivation				
Motivation 1. To what extent being challenged at work, i.e. given more responsibility motivates you?	0.818	1.856	13.258	0.765
Motivation 2. To what extent does being listened to (ideas) by a supervisor motivate you?	0.808			
Motivation 3. To what extent does getting recognition for what you do motivate you?	0.757			
Motivation 4. To what extent does EPMS motivate you?	0.687			
Factor 3: Career advancement and development				
CAD2: How important is on-the-job training for you?	0.793	1.664	11.74	0.799
CAD4: How important is it for you to have the resources needed to complete your task and succeed?	0.701			
CAD5: How important is it for you to have critical success factors clearly listed and understood?	0.691			
CAD6: How important is your involvement in drafting your career development plan?	0.633			
CAD8: How important is it to you that everyone has an equal chance to be promoted?	0.597			
TOTAL		8.184	58.315	2.372

Source: Own compilation

Reliability refers to replicability of the findings result from the study (Radebe, 2013). From table 2 above, it is clear that the Cronbach Alpha Co-efficient score for all 3 constructs is greater than the recommended 0.70 (Pallant, 2010) needed to ensure reliability. The 3 constructs are reliable.

7.3. Testing the study objectives (hypothesis test)

7.3.1. Correlation analysis

According to Pallant (2010) correlation analysis is a method used to determine the strength and direction of two variable's linear relationships. The correlation coefficients can only be represented in two values, namely, -1 and +1, where -1 means perfect negative correlation and + 1 means perfect positive correlation, 0 means there is no relationship at all between the measured variables (Pallant, 2010). The strength of the relationship can be divided into 3 categories, weak, moderate and strong relationship. To determine the strength of the relationship and interpret the values between 0 and 1, Pallant (2010) suggested the following guidelines, as per the table below:

Table 4: Correlation analysis

Correlation strength	Value of correlation coefficient
Weak	r = .10 to .29
Moderate	r = .30 to .49
Strong	r = .50 to 1.0

Source: Pallant (2010)

7.3.1.1 Correlation between EPMS, motivation and career advancement and development

The study's hypothesis were as follows:

Hypothesis 1: H₀: There is no positive significant correlations between EPMS and motivation.

Hypothesis 2: H₀: There are no positive significant correlations between career advancement and development and motivation.

Hypothesis 3: H₀: There are no positive significant correlations between EPMS and career advancement and development.

To test the above hypothesis, a correlation analysis was performed. Correlation analysis was performed to determine if there is a relationship between EPMS and motivation. The results of the correlations are shown in the table 5 below.

Table 5: Pearson's Correlation analysis

Correlation Analysis				
		Employee Performance Management System	Career Advancement and Development	Motivation
Employee Performance Management System	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	153		
Career Advancement and Development	Pearson Correlation	.400**	1	
	Sig. (2-tailed)	0		
	N	153	153	
Motivation	Pearson Correlation	.424**	.323**	1
	Sig. (2-tailed)	0	0	
	N	153	153	153

As shown in the above table 4, there is a statistically significant (p-value <0.05) positive correlation (r = 0.424) between EPMS and motivation. Therefore, the hypothesis is rejected.

The result of this study is corroborated by the result of a study conducted in Indonesia by Amri and Ramdani (2021). The study results showed motivation has a positive and significant influence on performance. Amri and Ramdani (2021) further states that the higher levels of motivation contribute to higher levels of employee performance. Supportive to this view, Hendricks (2015) states that an effective EPMS process has certain benefits, enhanced employee performance, alignment of skills and tasks and keep employees motivated. A study done in South Africa steel industry by Sono (2014) support the finding of this study. The study by Sono (2014) found that there is statistical significant positive relationship between feedback from EPMS and motivation.

There is a statistically significant (p-value<0.05) positive correlation between motivation and career advancement and development. Therefore, the hypothesis is rejected.

Makhbedu (2017) postulates that career advancement and development have an extensive range of direct and indirect benefits. Direct benefit includes change in employee attitude towards their jobs, high levels of productivity and ultimately motivation. Indirect benefits range from positive attitude towards their communities to caring about the environments. He further states that development and training of

employees helps to improve their confidence, problem solving skills and assist them to make better decisions.

There is a statistically significant ($p\text{-value}<0.05$) moderate correlation between career advancement and EPMS. Therefore, the hypothesis is rejected.

This is supported by a study by Mohamud, Ibrahim and Hussein (2017), in which they postulate that training and development has a significant impact on the performance of employees and ultimately their motivation. When employees are fully trained and considered to be competent, they understand and value their work, which results in high levels of motivation.

8. Managerial Implications

The study has added to the body of knowledge to understand the influence that EPMS and career advancement and development on the motivation of operational employees. The study has brought to the fore the significant difference that exists between the lower echelon operational employees and higher echelon operational employees regarding the perception of EPMS and career advancement and development.

The study's contribution to management of the organization under studies is as follows:

- Revealed the significant correlation between EPMS, career advancement and development, and motivation.
- Providing insight to reviewing and structuring of their retention strategy.
- Highlighted the pledge to optimize human capital investment.
- Provided insight into the cost of employee turnover and its long-term implication.
- Recommended scientific techniques to deal with higher echelon employees.

The findings of this study benefited the organization under study and other corporates as well, considering that this is a South African phenomenon. The research also empirically validated the relationship between EPMS, career advancement and development, and motivation. In addition, the study expanded the current scientific body of knowledge about EPMS, thus serving as a future reference for researchers on the subjects of EPMS, career advancement and development and its influence on motivation.

9. Conclusion

Although the study attempted to be factual and objective, there were several limitations identified:

The research was based on the one selected organization with a limited number of participants; therefore, the findings may not be generalized to other organizations in the alcoholic beverage industry in particular or the corporate world in general. Researchers may examine whether Employee Performance Management System's most essential features are transferrable to other work environments, such as manufacturing companies. The study was cross-sectional. The results should be taken in this context, as perceptions of participants may change over time to a given phenomenon. The phenomenon itself may change over time, impacting on the way employees react to it. The EPMS must do more than complete an annual performance review or provide a confidential yearly report. Managers must recognise that setting KPIs and placing pressure on people are not synonymous. The first step in achieving corporate goals should be identifying the EPMS, motivation and career advancement and development outcomes-related components. They can then work with the EPMS team to achieve organisational goals. Moreover, a performance-linked incentive program should also link performers with performance and incentives with performance. Therefore, EPMS, motivation and career advancement and development should be controlled equitably to reduce distrust, tension, and conflict and foster a good attitude toward EPMS in an alcoholic beverage producer in South Africa. Subjectivity and inappropriateness may be solved by providing the required information, skills, and resources, boosting employee motivation, career advancement and development, providing adequate and timely EPMS training, and adjusting performance measurements and standards to reduce subjectivity. Alcoholic beverage industry should employ objective assessment standards, conduct assessments appropriately, and disclose the consequences of good and bad performance.

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Exploring Sustainable Leadership Practices in a South African Seaport

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Keywords

Sustainable leadership practices; sustainable leadership; strategic leadership; sustainable seaport leadership; seaport sustainability practices

Abstract

The Top Management Team (TMT) members are critical for seaport sustainability and business growth. However, scholars know little about what these leaders at the top do to lead sustainably in South African ports. The objective of this qualitative study is to identify the sustainable leadership practices of Port Executives at one of the seaports in South Africa. Nine experienced Port Executives who participated in this study were selected using the purposive sampling technique. Data were collected using in-depth and semi-structured interviews. The thematic analysis helped analyse data and get dominant themes.

Results reveal five key practices which depict the nature of sustainable leadership displayed by Port Executives. These include guiding and prioritising environmental sustainability, commitment to strategic partnerships, strategic thinking about the business and people, community building and corporate social responsibility, and green innovation. The article concludes that sustainable leadership practices are diverse and strategic but less systemic to integrate sustainability. They are undermined by poor cross-functional collaboration, lack of sustainability literacy within the upper echelon, and inadequate expertise on sustainability among employees.

Port Executives need to shift from practices that predominantly emphasise environmental audit and compliance paradigm to practices of multi-faceted sustainability as a catalyst of systemic integration and inclusive stakeholder management. Implications for sustainable leadership of a seaport and areas for future research are highlighted.

1. Introduction

Leaders capable of integrating sustainability into every port activity are needed for the sustainable future of seaports in South Africa. Seaports in South Africa are significant gateways to metropolitan areas and the sub-Saharan African countries, yet little is known about sustainable leadership in this setting (Kinyua, 2020).

While proficient seaports are critical to the economic development of the port's surrounding areas, they also cause several negative environmental impacts on the host communities (Kinyua, 2020). The adverse effects do not arise only from internal port activities (e.g. shipping traffic, cargo-related activities, storage, warehousing, packing, shipbuilding and repair services) but also emissions from intermodal transports (e.g. road and rail traffic to and from the port region) (Hossain, Adams and Walker, 2021:1). Generally, the discourse on seaport sustainability highlight that the top five environmental challenges include quality of water, disposal of waste, air quality, conservation of habitat and noise (Hossain et al., 2021). Leaders of different organisations, including ports, are increasingly aware of the adverse effects of not balancing the triple bottom line, generally known as the three P's – planet, profit, and people (Stephanie, 2021).

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Hossain et al. (2021:1) lament that “while many seaports claim to operate green or sustainably, sustainable port initiatives and approaches are poorly described in the academic literature”. Scholars such as Tsai and Lu (2021) are raising the question of how leaders of seaports exercise sustainable leadership. Seaports are among the most polluting sectors due to their nature.

According to the seminal work of Katz and Kahn (1966), there are three levels or categories of leadership in any organisation, namely the tactical, operational and strategic. Tactical leadership focuses on the “here and now,” with short-term decisions and risk management for immediate gains (Kanyangale and Pearse, 2014). Operational leaders guide teams in analysing and comprehending the organisation's strategic and tactical realities. These leaders design the infrastructure and framework (e.g. operational processes, structures, and systems) that enable employees to work tactically toward the organisation's strategy. Samimi, Cortes, Anderson and Herrmann (2019) are cogent that leaders at the strategic level provide long-term direction (e.g. vision, mission, strategy), motivate and influence employees, create and change organisational culture, and drive and align strategy during execution. Strategic leaders, also known as members of the Top Management Team (TMT) or upper echelon of the organisation, perform symbolic and ceremonial roles (e.g. attending or representing the organisation at functions) and relational work (e.g. building relationships and trust across sectors and organisations, networking with key external stakeholders) (Kanyangale, 2017). While all three levels of leadership are essential to embedding sustainability in an organisation, members of the TMT are critical as all the other members of the organisation take cues from them.

The seminal work by Hambrick and Mason (1984) is precise that the upper echelon theory helps understand the importance of strategic leaders as influential members of the organisation. In the upper echelon theory, Hambrick and Mason (1984:193) underscore that “organisational outcomes – both strategies and effectiveness – are viewed as reflections of powerful actors' values and cognitive bases in the organisation”. Strategic leadership theories are about the leadership “of” organisations and their changing aims and capabilities (Kanyangale, 2017). As the world faces more significant environmental, economic and social challenges, sustainable leadership is one of the new corporate priorities. However, Tsai and Lu (2021) are explicit that there is “little literature that examines how sustainability leadership influences employees' sustainability behaviour in the port sector”. To lead others and the system they operate into a sustainable future, strategic leaders need to model sustainable leadership. This study focuses on Port Executives as strategic leaders who constitute the TMT and have the overall responsibility for the port.

This qualitative study aims to identify sustainable leadership practices of Port Executives at a seaport in South Africa. The main research question is: How do Port Executives as strategic leaders of a seaport in South Africa practice sustainable leadership? This article underscores that sustainability literacy, systemic thinking, human capital development for sustainability, and inclusive stakeholder management are cardinal for systemic integration of sustainability.

First, this article begins by unravelling the ontology of sustainability and the distinction between green and sustainable ports before focusing on the phenomenon of sustainable leadership. Second, the article presents the research methods and findings. Lastly, there is a discussion of results, implications for sustainable leadership in a seaport, and areas for future research.

2. Ontological Aspects of Sustainability

First, it is crucial to delve into the ontology of sustainability in terms of its complexity and multi-dimensional nature. The triple bottom line approach (TBL) exhibits that sustainability is complex. It centres around three domains: social, economic and environmental. In this regard, the environmental aspect of sustainability includes the reduction of people's negative impacts on the environment and the protection of nature and ecosystems (Tsaia and Lu, 2021). Human beings must act responsibly and sensitively to the use of all resources as they have a limit. The economic dimension relates to the link between economic activities, growth, and effects, while the social dimension refers to human, institutional, cultural, and societal aspects. The three spheres of sustainability are interdependent, interconnected and interact in non-linear ways. A shift in one can, in turn, cause a series of knock-on

effects in the others. This interconnection brings to the fore the dynamic and temporal aspects of sustainability where the cause and effect are subtle, and the results of interventions are not immediately apparent. Transnet (2020:24), which runs eight seaports in South Africa, asserts that sustainable operations involve a balance “between business activities, the environment and community stakeholders”. It entails a conscious effort to create long-term synergy and shared value achieved in the mutual balance of all interests. Shared value reflects a win-win scenario that differs from the concept of ‘trade-offs’ as a ‘win/lose’ scenario (Transnet, 2020:24).

The Brundtland Report for the World Commission on Environment and Development (WCED) (1987:8) defines sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs”. This definition has aspects of dynamic and temporal complexity. At its core, sustainability implies the continued flourishing of human societies in a constantly changing world with competing social, economic and environmental conditions. Complexity arises from "inter-relationship, inter-action, and inter-connectivity of elements within a system" among elements that make up the system (micro-level), and among different systems (macro-level)"(Turner, Baker and Morris, 2018:65-66). Sustainability is a complex process of continuous adaptation to change. The processual perspective opposes the view of sustainability as an outcome, or a specific end state best captured by static outcome indicators (Hammond, 2020).

Path dependencies help deal with sustainability problems but may stifle an organisation or society from reflexively adapting to existing change or allowing radically new conditions to be possible. Complexity may also arise from counter intuitiveness which occurs when interactions intended to produce the desired outcome generate opposite results (Turner et al., 2018).

Second, sustainability is also a multi-dimensional phenomenon. Four dimensions of sustainability proposed by Ashrafi, Acciaro, Walker, Magnan and Adams (2019) are (1) environmental-based sustainability, (2) corporate sustainability, (2) business-related sustainability, and (4) sustainability in education. Scholars are labelling the proactive and environmentally friendly behaviours that people perform in the natural environment or the behaviours that try to reduce the negative impact of their activities on the natural environment as pro-environmental behaviours (Li, Xue, Li, Chen and Wang, 2020). Employees can choose whether or not to implement pro-environmental behaviours in the workplace (e.g. actively recycling paper, saving water and electricity).

2.1 Green port and Sustainable Port

In scholarly work, sustainable ports are related to green ports, although they are not the same. Green port is concerned with environmental issues (Ashrafi et al., 2019). According to Acciaro (2015:295), green ports are "engaged in the proactive development, execution, and monitoring practices targeted at reducing environmental effects beyond compliance". The concept of a green port is traceable to two issues. First is the need for ports to improve their environmental performance due to local communities' and port users' increasing demand for environmental accountability (Hossain et al., 2021). Notably, local communities demand to know the types of cargo going through the port and the environmental risks associated with port operations. Ports are paying attention to oil pollution from oil spills, air pollution, climate change, extinction of endangered species and habitat loss, and water pollution (e.g. contaminants from ballast water, cargo residue, oil waste, garbage disposal and petroleum spills being discharged), among others (Hossain et al., 2021). Green ports help conform to environmental rules and allow the firm to evaluate its actions, engage workers in environmental concerns, and plan for future environmental development activities (Woo and Kang, 2020).

Second, the concept of a green Port is also traceable to the motivation of port leaders to redevelop the waterfronts for tourism and improve port environmental performance (Hossain et al., 2021). In this way, green ports go beyond regulation as they also encourage voluntary action to ensure eco-friendly systems and processes in a port (Hossain et al., 2021). Ports are trying to modernise and meet the green management standards as they seek to leverage the strategy of the green port. However, port modernisation comes at a price as it brings societal and ecological challenges, trade-offs and congestion (Acciaro, 2015).

While sustainable or blue port incorporates the green port concept, they stress the role of societal impacts and the economic viability of port strategies. Long ago, Avery and Bergsteiner (2011:5) elaborated that by "sustainable, we do not just mean a firm is being green and socially responsible". In the American Association of Port Authorities (AAPA) parlance, port sustainability refers to strategies and activities that meet port stakeholders' current and future needs while protecting and sustaining human and natural resources (AAPA, 2007). Lam and Van De Voorde (2012) proposed a combined framework to reconcile the green and sustainability perspectives. This framework includes stakeholder involvement, green market development, cost-effective environmental policy, and sustainable operations and development as significant elements of a sustainable port strategy. Agile port strategies must comply with established regulations and respond to stakeholder demands in a VUCA (Balasubramanian, 2021). This type of port also focuses on influencing upcoming regulations. Given the complexity and multi-dimensional nature of sustainability, organisational and business scholars struggle to pinpoint the nature of leadership necessary to lead sustainably in a seaport.

2.2 Sustainable leadership

Mindful that the phenomenon of sustainable leadership embraces two different concepts of sustainable and leadership, it is sensible to understand the core of leadership. Drath, McCauley, Palus, Van Velsor, O'Connor, and McGuire (2008) assert that leadership is a tripod characterised by social interactions between leaders, followers, and shared goals. To elaborate on this tripod ontology of leadership, Drath et al. (2008: 635) summarise that:

"In its simplest form, [leadership] is a tripod- leader or leaders, followers, and a common goal they want to achieve" (Bennis, 2007:3). This is not a definition of leadership but something much more fundamental: It is an expression of commitment to the entities (leaders, followers, common goals) essential and indispensable to leadership and about which any theory of leadership must, therefore, speak."

The tripod ontology of leadership is insightful to any scholar trying to situate the phenomenon of leadership in the context of sustainability. Leadership is social influence – not a mere personality trait. Some scholars study leadership from the micro-view of leadership, which focuses exclusively on the individual characteristics of a leader. However, Suriyankietkaew and Gayle Avery (2016:1) argue that "sustainable leadership needs to be researched from the macro-level perspective of leadership. This perspective relates leadership to an organisation's strategic and overall leadership system. Balancing people, profits, and the planet with a long-term view is critical for sustainable leadership. Shaping a sustainability culture that includes others to limit the negative impact of organisational activities on people, the planet, and profit is crucial for sustainable leadership (Stephanie, 2020). Thus, sustainable leadership in an organisation needs to manage the tension between economic and environmental pressure rather than tilt their leadership practices towards profits only in the short-term at the expense of people and the planet in the long term (Stephanie, 2021).

2.2.1 The honey bee approach to sustainable leadership

Avery and Bergsteiner (2011a) proposed the first framework of sustainable leadership based on what is labelled as "honey bee philosophy" that facilitates outcomes within and beyond the triple bottom line. This philosophy assumes that an organisation can be sustainable only if its operating context is sustainable and the basic needs of all involved are met (Laburn,2011). Honeybee leadership is characterised by stakeholder orientation, long-term focus, and delivery of outcomes more responsibly (Laburn, 2011). Honeybee philosophy informs leaders to pursue three key issues: care for and develop people in an organisation, protect the planet, care for the local communities in which they operate and protect organisational image and brand through ethical behaviour.

The opposite of honey bee philosophy is called the locust approach to business. It upholds the belief that the only goal of business is to generate profit and growth for its shareholders (Avery and Bergsteiner, 2011b). The locust approach pronounces the belief of shareholders first and profits at all costs in leading an organisation. Locust leadership calls for one to be tough, ruthless and do whatever

is necessary to perform well in the short term (Laburn, 2011). The core idea is that an individual or organisation gains an advantage only by making others suffer. At the centre of locust philosophy is the idea of a zero-sum game (Laburn, 2011). Honeybee and locust behaviours depict two different types of leadership philosophies. Avery and Bergsteiner (2011a) developed the first comprehensive framework of sustainable leadership based on the honey bee philosophy. This framework constitutes 23 practices clustered into three groups: foundation, higher-level, and key performance drivers. Table 1 compares the sustainable "Honeybee" leadership approach and the shareholder-first or "locust" approach.

Table 1: Criteria distinguishing typical sustainable leadership and shareholder-first perspectives

Leadership elements	Sustainable "honeybee" leadership philosophy Sophisticated, stakeholder, social, sharing	Shareholder-first philosophy Tough, ruthless, asocial, profit-at-any-cost
Foundation principles		
1. Developing people	Developing everyone continuously	Develops people selectively
2. Labour relations	Seeks cooperation	Acts antagonistically
3. Retaining staff	Values long tenure at all levels	Accepts high turnover
4. Succession planning	Promotes from within wherever possible	Appoints from outside wherever possible
5. Valuing staff	is concerned about employees' welfare	Treats people as interchangeable and a cost
6. CEO and top team	CEO works as a top team member or speaker	CEO is a decision-maker, a hero
7. Ethical behaviour	"Doing the right thing" as an explicit core value	Ambivalent, negotiable, an assessable risk
8. Long-or short-term perspective	Prefers the long-term over the short-term	Short-term profits and growth prevail
9. Organisational change	Change is an evolving and considered process	Change is a fast adjustment, volatile, can be ad hoc
10. Financial markets orientation	Seeks maximum independence from others	Follows its masters' will, often slavishly
11. Responsibility for environment	Protects the environment	Is prepared to exploit the environment
12. Social responsibility (CSR)	Values people and the community	Exploits people and the community
13. Stakeholders	Everyone matters	The future does not necessarily drive the business
14. Vision's role in the business	A shared view of the future is an essential strategic tool	The future does not necessarily drive the business
Higher-level practices		
15. Decision making	Is consensual and developed	Is primarily manager-centred
16. Self-management	Staff are mostly self-managing	Managers manage
17. Team orientation	Teams are extensive and empowered	Teams are limited and manager-centred
18. Culture	Fosters an enabling, widely-shared culture	Culture is weak except for a focus on short-term results that may or may not be shared.
19. Knowledge sharing and retention	Spreads throughout the organisation	Limits knowledge to a few "gatekeepers."
20. Trust	High trust through relationships	Control and monitoring compensate

	and goodwill	for low trust
Key Performance drivers		
21. Innovation	Strong, systemic, strategic innovation is evident at all levels	Innovation is limited and selective, buys in expertise
22. Staff engagement	Values emotionally-committed staff and the resulting commitment	Financial rewards suffice as motivators; no emotional commitment expected
23. Quality	Is embedded in the culture	Is a matter of control

Source Avery and Bergsteiner (2011a:7)

Researchers have investigated sustainable leadership practices in various geographical contexts (including South Africa) and organisational settings. For example, Kantabutra and Saratun (2013) researched sustainable leadership in a University; Kantabutra and Avery (2013) focused on sustainable leadership in a cement conglomerate, while Suriyankietkaew and Avery(2016) investigated sustainable leadership in SMEs.

In this study, sustainable leadership is the social influence of internal and external stakeholders in pursuit of shared sustainable goals and systemic consideration of the impact of human actions on broader stakeholder groups, the environmental and economic spheres within which an organisation operate and its limits. This definition is suitable because it is mindful that what sustainable leaders do relates to social influence, which seeks to balance social, economic and environmental outcomes in a port. The notion of practice is critical in this study. Practice researchers aim to uncover the specific actions, interactions, and consequences to understand practice as “what actors do”.

3. Methodology

This section describes how Port Executives as strategic leaders were selected and how data were collected and analysed.

3.1 Research paradigm

This exploratory study adopted a social constructivist paradigm to gain multiple and subjective perspectives on sustainable leadership practices from the lived experience of Port Executives in South Africa.

3.2 Sampling

Purposive sampling was used to identify nine Port Executives at a seaport in South Africa- six (6) males and three (3) females. The selection criteria were: (1) membership of the Port Executive committee and being involved in strategic issues shaping the strategic direction of shipping and seaport activities; (2) a minimum of three years of experience as a strategic leader to have hands-on experience of leading self and others at the port; and (3) willingness and openness to reflect on own leadership practices and that of others at a seaport. Participants were 38 to 55 years old and had a minimum of 5 and a maximum of 20 years of experience working at a seaport.

3.3 Data collection

Data were gathered through audio-recorded, in-depth, and semi-structured interviews with nine Port Executives as strategic leaders. Follow up interviews were used to seek clarity from interviewees. An interview guide helped Port Executive, as strategic leaders, reflect on what they were doing, which they consider sustainable leadership practices at the seaport. The guide focused on (1) patterns of regular or repeated actions, and behaviours by Port Executives which reflect the social, economic, and environmental dimensions or aspects of sustainability in a port environment; and (2) challenges to displaying sustainable leadership practices in a seaport and (3) consequences of displaying practices of sustainable leadership. Data collection ceased after reaching saturation. This type of saturation is when further interviews could not generate any new data (Saunders et al., 2018). The exclusion of middle-level managers in the sample and exclusive use of interviews are limitations—such that the

results are only transferable to a similar level of leadership and context of a seaport, hence not generalisable.

3.4 Data analysis

The study made use of thematic analysis to identify sustainable leadership practice by Port Executives. The focus was on a pattern of regular or repeated actions and behaviours by Port Executives which were related to any dimension or aspect of sustainability in a port environment. Thematic analysis is one of the most common forms of analysis within qualitative research. It emphasizes identifying, analysing, and interpreting patterns of meaning (or "themes") within qualitative data (Creswell, 2009). Transcribed data were subjected to member check prior to analysis using open coding and constant comparison. Key categories were induced from data and were subsequently developed into dominant themes of practices reflecting what Port Executives, as strategic leaders were doing in their endeavour to lead the port sustainably. Details of the research process and direct quotes from participants are given to serve as an audit trail, and to enhance dependability and credibility.

4. Results

The results depict five key practices of sustainable leadership by Port Executive presented in detail as follows:

4.1. Directing and prioritising environmental sustainability

Port Executives were directing and prioritising the environmental sustainability of the Port by relying on the environmental management system, guidelines, policies, regulations, and precinct forums for monthly engagement to ensure that the various operators within the port and their activities were eco-friendly and complying with standards.

We have an environmental management system and guidelines for our port users, i.e., Commercial tenants, Section 56 operators and licenced terminal operators occupying space in various port precincts. The Port Executive committee formed precincts forums. Every month, we have a session with our port users to discuss port precincts developments, environmental issues, and compliance with legislation (Participant 1).

Below is how Participant 5 reflected on safety, health, and environmental audit as a mechanism to ensure regulatory and internal policy compliance by employees and tenants as port users.

We ensure that port users comply with the safety, health and environmental (SHE) Act and policies. The port's slogan is to be a smart, green, and friendly port; hence the port wants a safe environment for port users.

Environmental audits by environmental specialists were not very effective due to the lack of green leases. At the same time, tenants were discouraged from taking voluntary initiatives of green innovation as they could not see a win-win relationship between the port and the tenants. Participant 2 elaborated on the limitation of environmental audit and the tenant's mindset of complying with the minimum requirements as follows:

Our leases are not saying much concerning green management initiatives that port users should consider. So, it is difficult for some port users to invest in green innovation technologies in their respective areas of operations when the contract is silent, short, or they do not know whether or not the port will renew the lease agreements. Tenants just do the minimum. Lease agreements also compromise our environmental audit as we cannot reinforce what is not in the standard lease to make our port green.

The weak collaborative behaviours manifested by employees in turf wars harmed cross-functional cooperation and sharing of information at the port. Participant 1 had the following to say regarding this systemic hurdle for integrating sustainability faced by Port Executives:

Some members are not displaying sustainable leadership practices because they work in isolation within their department. They have a mindset of "I need to cover my back and look after my space". They cannot work freely and share information because they think people will take their positions or occupy better positions than them. This mentality creates stumbling blocks in the entire system, which we are trying to deal with.

4.2 Commitment to Strategic Partnerships

The Port Executives built and maintained strategic engagement with internal and external port stakeholders to cooperate on strategic initiatives. One of the Port Executives exemplified this by focusing on the execution of energy management strategies such as renewable energy and reduction of energy consumption as follows:

We are working constructively with our internal stakeholders: our electrical power supplies depot, building and marine depot, and project team members to put various energy initiatives around the port. We have put building management systems, Air conditioning timer systems, geyser blankets, heat pumps, LED Street, and high mast lighting. All of these contribute positively to reducing energy consumption (Participant 7).

Furthermore, close partnerships between departments and port tenants served as a tool to demonstrate that addressing environmental problems demands collective actions, as revealed by participant 3: *Facilitating close partnerships and cooperation between departments and port tenants has been crucial in coordinating important initiatives and solutions within the port. For example, addressing environmental issues is not just the responsibility of the Port management, but it is something that we must get everyone involved in.*

Port Executives were pursuing external stakeholder engagement through a variety of forums not only to share developments and up-dates but also to get stakeholder's expectations:

Cargo leaving the port uses the premises of the city of Durban impacts Sanral in terms of using national roads. We have different forums where we engage these other stakeholders. National Port consultative forum takes place quarterly; Port consultative also happens quarterly, South African Association of ship operators & Agents every month, and precincts forums every month. We discuss port development plans and status updates for any development affected in these forums. We also try to understand their expectations concerning harbour activities (Participant 5).

The practices of Port Executives show that partnerships were a critical part of an integral strategy in the seaport. For example, one participant exemplified the collective efforts and consequences by various external stakeholders to address the old and growing problem of road traffic congestion in the city as follows:

Bayhead Road traffic congestion has been a significant issue for many years in the port. We collaborate effectively with the eThekweni Municipality, Port Terminals, Freight Rail, Department of Public Enterprises, KwaZulu Natal Department of Transport, Economic Development, Tourism & Environmental Affairs, eThekweni Metro Police and Durban Chamber of Commerce & Industry and other stakeholders to find feasible traffic management measures to alleviate congestion at the port and surrounding road networks. We already see positive results in the Bayhead precinct because of effective engagements and joint efforts (Participant 8).

4.3 Strategic thinking about the business and people

Practices of Port Executives reveal a strategic approach to business as they scan the environment to set a forward-looking business agenda and link individual and collective efforts to add value within the port. Participant 9 had the following to say:

Each area sees itself as a business and scans the environment to understand the future while striving to perform now and grow. The ideas are realised by creating mini businesses around the port from the concept of mission-directed work teams. Employees at all levels see themselves adding value and understanding the organisation's vision. Also, we have charts introduced in various areas of the port to outline daily team members' responsibilities. The strategic approach forces every member in the port to deliver and account for their work to ensure the business continues at the port into the future.

Another Port Executive focused on how they were pursuing a sustainable vision of the port through renewable energy sources as an alternative in the light of the electricity crisis in South Africa.

I have been pushing for the introduction of renewable electricity generating system. This will cater for establishing sustainable energy solutions as the country is facing an electricity crisis. I had to rally all the relevant support, encourage the team and ensure that the project came to life because it is an environmentally viable project to transform the Port (Participant7).

Participant 4 illuminated how bureaucratic processes at the port undermined strategic agility, which is critical for agile port operations.

We are slow in reaction. There are many committees within the organisation that the leaders have to undergo either for approval of capital funding or, rather say, for business case approval and for requesting permission to go out to the market or award projects. We have a gate review committee, port acquisition council, investment forum, and division committee. All these committees are checking the same thing, which delays the processes, and you will find that each person requires two weeks to review a document.

Additionally, strategic thinking about the business by the Port Executive was less systemic as it lacked investment in human capital with sustainability expertise and literacy. Participant 9 described not only the scarcity of sustainability training, and inadequacy of sustainability knowledge among employees, but also reliance on external expertise on sustainability:

Sustainability training is scarce in our organisation. Port Executives and employees need to be trained and reskilled. Adequately skilled human resources are a necessity in the organisation. The organisation have limited employees with sustainability knowledge. As a result, we hire professional specialists on contracts to provide services in the port.

Another participant focused on how most employees' lack of exposure to greener ports contributed to the challenges of anticipating and responding quickly and flexibly to changes in the port environment. Participant 8 reported the lack of green adaptive capacity by human resources as follows:

Lack of experience and exposure to greener ports is the biggest challenge to our human resources. It affects one's anticipation, reaction and response to changes in this environment. So, with changes coming in, sometimes it becomes prolonged and challenging to adapt.

4.4 Community building and corporate social responsibility

Port Executives were explicit about facilitating efforts for the port to develop closer relationships with many interest groups, not just with owners, shareholders, and employees. The port was maintaining local relevance and seeking social recognition through annual port festivals, support of tourism, cultural diversity and heritage and career opportunities, as surmised below by Participant 6:

The Port Executives display positive social sustainability practices. They introduced annual Port festivals for the locals and international visitors to come to the port to celebrate the busiest commercial port in South Africa. As the port leadership, we are at the forefront and taking the lead in facilitating the event's success, which focuses on the community, tourism industry, history

and heritage of the Durban port, diverse cultures, career opportunities and fun activities for visitors.

Another participant echoed how the Port Executives were recognising and strengthening stakeholder relations with the host city by using its technical capability to help the city maintain beaches and contribute to the social life of the community and tourism:

We are responsible for collecting the sand trapped in the harbour. We pump it back into the Durban beaches using our dredgers to nourish our beaches so the community and tourists can enjoy the Durban beaches (Participant 1).

In a slightly different vein, participant 5 revealed how the port nurtured goodwill in nearby communities by providing land for community gardens and promoting gender by opening up the port to inspire the girl child.

For instance, the port leadership has identified an area around the port that will be used as a garden for planting vegetables. So, as part of social initiatives, this area will be accessible and maintained by nearby communities. We also have a "take a girl child to work campaign" here in the port as part of corporate social investment.

Participant 9 focused on support beyond the direct neighbouring community in the form of social investment in schools reported in this way:

We partner with different government departments, such as the ministry of education, to support local township schools by building classrooms and supporting various initiatives. It is part of our responsibility to ensure that children get educated as they are the future of our economy (Participant 9).

4.5 Green innovation

The practices of Port Executives reflect the effort to spread green innovations throughout the organisation's operational processes. Below is what participant 6 had to say specifically on the new operational efforts to restrict debris from getting into the harbour after flooding or heavy rains:

We have initiated a project to restrict waste from the city and neighbouring communities into the Durban harbour. We are installing booms in the port stormwater reticulation system to restrict ingress waste in stormwater reticulation inlets and outlets from getting into the Durban harbour.

Another participant focused on how they were facilitating technological and environmental solutions for air quality monitoring within the port. Participant 3 had the following to say, which revealed innovation at the operational level:

We work with our port operators and support them in providing relevant technological and environmental solutions in various port precincts. For example, implementing an air quality monitoring control system which ensures that the system detects and assesses air quality produced from operational activities undertaken by port users. So, as the leader, I can say the port leaders are the change agents.

5. Discussion

This study has revealed that there are five key practices of sustainable leadership which are predominantly oriented toward environmental responsibility and environmental audit in the port. Clearly, this finding shows that environmental issues are indispensable aspects of port sustainability. Similar results are reported in a study of sustainability leadership in the South African Post Office by Khotsa and van Rooyen (2020). This study revealed that sustainability leaders focused on waste management policies to mitigate the possible negative environmental impact(s) associated with postal services.

However, it is critical to underscore that leaders' basic assumptions, beliefs, and practices that predominantly emphasise green or environmental dimensions are narrow and inconsistent with the multi-faceted and holistic lens of sustainability (Woo and Kang, 2020). Sustainability entails pronouncing not just one but all the three dimensions of social, environmental, and economical as equally necessary (Balta, Chawla, Dencik, and Lin, 2022:8-10). It is also essential to underscore that sustainable leadership practices by Port Executives at the seaport were less systemic and undermined by various internal elements. For example, bureaucratic processes affected strategic agility, while turf wars impeded sharing information and collaborative work for sustainability at the port. If Port Executives are to enhance port sustainability, there is a compelling need to reinforce internal alignment and strategic agility in the organisational architecture of the port. Practices of Port Executives which embed sustainability consciousness within the whole HRM process at the port (e.g. green recruitment, selection, training, performance management, pay and reward, and green involvement) are pivotal to addressing the identified impediments of sustainability. Tang, Chen., Jiang, Paille and Jia (2018) refer to green training and development as key to preparing multi-talented workers and improving competencies, knowledge, and skills necessary to achieve sustainability. Mishra (2017) has highlighted that support of TMT and mutual learning among departments are crucial to facilitating green behaviours among employees.

In the honeybee philosophy of sustainable leadership, Avery and Bergsteiner (2011b) are explicit that employees empowered with sustainability literacy transcend functional boundaries and fundamentally rethink and challenge traditional approaches. It is foundational that sustainable leaders develop employees capable of identifying leverage points where a small shift in one thing can produce significant sustainability-related changes in everything. Effective, sustainable leaders build a strong sustainability culture. It is salient that leaders promote the importance and imperatives of sustainability, establish a sustainability vision and priorities, and behave in ways that support sustainability in the port (e.g. rewarding sustainability behaviour, rituals). Hammond (2020) views sustainability as a cultural transformation that affects the shared pattern of basic assumptions of people to collectively construct social reality, shape how people cope with internal and external sustainability problems and exploit sustainability opportunities.

Second, the findings of this study are explicit that the practices of Port Executives reflect the reliance on environmental audits and regulatory compliance by port users. In a review of the extant studies on corporate responsibility at ports which used the theory of institution, Acciaro (2015) observed a strong effect of institutional pressures on sustainability behaviours. Institutional pressure was coercive (e.g. strong external stakeholders such as government or non-government organisations imposing intense pressures, compulsory and mandatory regulations) and normative pressures (e.g. expectations, values and norms and standards within the company culture). While rule-based and coercive internal policies help ensure sustainability, they are not always based on port users' explicit and internalised norms and values. These institutional pressures may not easily result in sustainability stewardship (Mathevet, Bousquet, and Raymond, 2018) and sustainability citizenship behaviour which are often discretionary behaviours (Anwar, Nik Mahmood, Yusliza, Rmayah, Faezah and Khalid, 2020. Aslam., Azeem, Bajwa, Ramish and Saeed (2021) argues that "organisational citizenship for sustainability is a set of unrewarded, voluntary, individual, discretionary behaviours that promotes sustainability". Often, many organisations fall short as they fail to create and sustain organisational citizenship for sustainability and sustainability stewardship by everyone in the organisation. It is pivotal for Port Executives to adopt the view of proactive stakeholders who are capable of doing more than mere compliance. This approach entails ensuring that practices do not nurture conformance which fosters a "meets minimum" mindset by both the port and its tenants. Green lease agreements are necessary to specify clear green obligations, responsibilities and win-win relationships between the port and tenant. This aspect may persuade port tenants to pursue voluntary, non-contractual responsibility and efforts for green innovation.

Third, it is intriguing that sustainable leadership practices of Port Executives contribute to port sustainability through a multi-level stakeholder approach across all boundaries to address complex

problems collectively, actively seek expectations, and update stakeholders on developments. The of the key competencies of sustainable leaders is the collaborative approach to responding to the difficulties and concerns of multiple stakeholders, both inside and outside the organisation (Tsaia and Lu, 2021). In this study, stakeholder involvement involved building close relationships with the community and host city in many ways (e.g. annual festival, building classrooms, maintaining the beach), which reflect corporate social responsibility and investment. This finding resonates with the honeybee philosophy of sustainable leadership, which underscores that valuing people and the community is critical for an organisation's success. Internally, Port Executive created interactive, consultative and precinct forums with internal stakeholders to engage in conversations to reduce environmental contamination and ensure that terminal operators within the port and their activities are eco-friendly and comply with environmental policies and regulations. Engaging stakeholders upfront can align mutual interests and create trust preventing the rise of conflicts and misunderstandings during the project implementation. In this study, Port Executives maintained and promoted sustainability across traditional functions and boundaries in the port, although efforts were undermined in many ways. Engaging multiple stakeholders requires skills to create value with all stakeholders, exhibit an understanding of individuals across cultures, and build productive long-term relationships. This study concludes that the foundation for employees and leaders to develop sustainable leaders needs to be diverse by focusing on sustainability expertise and literacy, collaborative behaviours, inclusive stakeholder management, and the systemic integration of sustainability into all port activities. This conclusion resonates with Knight and Paterson (2018:5), who identified five critical behavioural competencies of sustainability leaders. These competencies are results-driven, inclusive operator, change agent, ethically oriented, and visionary thinker, maximising leadership impact on sustainability initiatives.

Given the above findings, this study is explicit that there is a compelling need to enhance sustainable leadership practices of Port Executives to drive integrated and systemic sustainability rather than just environmental and social sustainability. The holistic lens of sustainability is critical in influencing practices of sustainable leadership. The study calls for a fundamental shift from practices which predominantly rely on the environmental audit and compliance paradigm to practices which promote sustainability as a catalyst of sustainability integration, inclusive stakeholder engagement and sustainability citizenship behaviours in a systemic way which addresses limitations in the predominantly green, environmental audit and compliance paradigm at the seaport.

In the parlance of Balta et al. (2022:8-10), an organisation is characterised as a sustainability trailblazer if it does not simply comply with the minimum but leans into the sustainability opportunity and actively embraces its transformational potential. The trailblazers integrate commitment and effective execution of sustainability holistically, mindful of the opportunities for digital transformation. Sustainable leaders in a port need to use sustainability as the prism through which port activities are strategised, executed, and success is defined and achieved. The results of this study are not generalisable because of the small sample size but are transferable to a similar context.

6. Implications for Sustainable Leadership of a Seaport and Future Research

The findings have two significant implications: clarity of the multi-faceted foundation for developing sustainable leadership and reconceptualising sustainability as a catalyst.

First, this study has clarified the multi-faceted nature of the foundation for developing sustainable employees and leaders in a South African port environment. If sustainable leadership practices are to develop in a South African port, there is a need for Port Executives to focus more on the diverse and relevant practices which collectively constitute sustainable leadership. The variety of these practices depicts that sustainable leadership is complex and goes beyond sustainability literacy. Sustainable leadership practices also embrace systemic thinking to integrate sustainability, multi-level stakeholder engagement, and the development of sustainable human resources in a port to create and shape a sustainability culture. It is doubtful that Port Executives may embed sustainability in all activities

holistically but also create and nurture a sustainability culture in a port without paying attention to these four practices as building blocks.

Second, this study calls for reconceptualising sustainability as the catalyst of sustainability integration, inclusive stakeholder involvement and sustainability citizenship behaviours in a systemic way to enhance port sustainability. This is necessary to address the shortfalls in the prevailing paradigm of environmental audit and compliance, which compromises efforts of the port to ensure sustainability while also limiting sustainable citizenship behaviours by some port stakeholders. The way environmental audit is implemented should not restrict but support a sustainability mindset for leaders and employees to align all aspects of running a port with the core values, beliefs and holistic lens of sustainability; and allow organisational citizenship for sustainability to flourish among all port users. Enhancing the size and diversity of the sample size by involving more seaports is key for future research on sustainable leadership practices by the TMT. On the other hand, there is also a need to investigate sustainable leadership of middle managers or low-level employees in various seaports. Research of this type is crucial to avoid the notion of sustainability as an elite-led managerial challenge in the port. Studies which seek scholarly clarity on how sustainable leadership shapes sustainable citizenship behaviour or sustainability stewardship of employees are more required in developing countries, which have poorly implemented environmental regulations by government and weak development of human resources for sustainability at organisational levels.

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A Conceptual Framework for Evaluating the Impact of Transformational Leadership on Job Satisfaction Using Employee Empowerment and Intrinsic Motivation as Modifying Factors

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Keywords

employee empowerment, intrinsic motivation, job satisfaction, leader-member exchange, organisational behaviour, transformational leadership

Abstract

Drawing from transformational leadership theory, a model of organisational-level prognosticators was tested regarding employee empowerment. In particular, we determined the effect of transformational leadership on job satisfaction. This study employed an empirical paradigm, using a cross-sectional design and quantitative analysis. An independent, quantitative census sample was used to examine the effect of transformational leadership theory on job satisfaction. Based on a sample of 100 employees who received the survey across a single organisation, 91 per cent completed the online survey developed by the researchers. Data were subsequently analysed using descriptive statistics and inferential statistics. The results indicate that transformational leadership is positively related to job satisfaction, organisational behaviour, leader-member exchange and employee empowerment. The study recommends using transformational leadership practice to address issues related to employee empowerment and intrinsic motivation.

1. Introduction

To promote positively engaged and empowered employees, Schedule 3A entities in the South African government are urged to invest in transformational leadership (TFL) practices. However, is that a simple exercise to put into practice? Universally, studies on employee empowerment have become significant across organisations, as management styles have shifted the attention to having several leaders, as an alternative for managers, within the corporate world. A leader inspires and involves his/her subordinates in their work, which is achieved by motivating them (Banutu-Gomez, 2015). A correlational cross-sectional field research study by Dahou and Hacini (2018), which investigated the impact of adopting an employee empowerment approach, revealed that organisations that embrace empowerment and have highly dedicated staff see increased creativity and innovation as improved productivity. Furthermore, according to Dahou and Hacini (2018), numerous direct reversion studies have reported that information distribution, job model, TFL and decision-making power had a beneficial impact on employee empowerment. McClean et al. (2021) contend that individual job satisfaction must be encouraged for such a person to become self-actualised. Even though TFL is critical to individual, team, and organisational performance, as well as employee empowerment, many managers fail to regularly demonstrate the behaviours outlined in this approach. Unfortunately, little is known about the elements that influence TFL and empowerment on a daily basis (McClean et al., 2021).

The study concentrated on the field of TFL and employee empowerment in a Schedule 3A entity of the state, within the Water Research and Development (R&D) sector (referred to hereafter as "Entity A"). Entity A, which operates as the R&D associate of the department leader, the Department of

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Water and Sanitation (DWS), offers the department knowledge dissemination and the ability to certify the ecological management of water sources, and improve water services. The organisation's performance is wholly shaped by the health and safety of its employees. Its operative portfolio and strategic purpose are to ensure organisational transformation, with an emphasis on enhancing successful leadership and increasing the level of employee competency. Notably, the intended principles encompass accelerating empowerment and effecting social change. Public service transfer organisations include (but are not restricted to) community water combined with hygiene, ecological activities, provincial government, and other governmental and parastatal agency. Such entities thus require TFL if they are to enhance ethical, quality, unbiased and balanced public provision. Importantly, since employee empowerment cannot be achieved without an intrinsically motivated labour force led by TFL, employees in a Schedule 3A entity find it difficult to be empowered and intrinsically motivated within their work environment.

2. Problem Investigated

Public service transfer organisations include (but are not restricted to) community water combined with hygiene, ecological activities, provincial government, and another governmental and parastatal agencies. Such entities thus require TFL if they are to enhance ethical, quality, unbiased and balanced public provision. Importantly, since employee empowerment cannot be achieved without an intrinsically motivated labour force led by TFL, employees in a Schedule 3A entity find it challenging to be empowered and intrinsically motivated within their work environment. In addition, lately, there has been a rise in qualified employee resignations in non-profit organisations such as Schedule 3A entities. Arguably, therefore, TFL-related techniques are not as simple as they appear and necessitate a high level of commitment and desire to succeed.

This research investigated a cross-level prototype for the organisational-level evaluation of leader-member empowerment. In particular, the study tested whether employee empowerment and intrinsic motivation were affected by TFL through organisational behavioural support and leader-member exchange. In doing so, the study attempted to fill a gap in observational work in the field of TFL, empowerment and motivation success. Also, to understand why the concept of employee empowerment emerged in the first place and gained popularity and which problems it promised to solve.

3. Research Objectives

1. To determine the effect of transformational leadership practices on employee empowerment.
2. To determine the effect of transformational leadership on job satisfaction.
3. To evaluate the effect of transformational leadership practices on intrinsic motivation.

4. Research Questions

1. What effect does transformational leadership practices have on employee empowerment?
2. How transformational leadership effects job satisfaction?
3. What effect does transformational leadership practises have on intrinsic motivation?

5. Hypotheses

The following hypotheses were formulated for the study:

1. H₁: Hypothesis 1
Transformational leadership has a positive relationship with intrinsic motivation and employee empowerment,
2. H₂: Hypothesis 2
Transformational leadership has a positive effect on job satisfaction and trust.
3. H₃: Hypothesis 3
Intrinsic motivation mediates the relationship between employee empowerment and transformational leadership.

6. Literature Review

Although the notion of employee empowerment dates back to the human relations movement of the 1930s, the broad implementation of employee empowerment initiatives did not emerge until the 1990s (Kim & Fernandez, 2017). In South Africa, empowerment involves transferring power from individuals, through constructive power, to the lowest possible position within an organisation or society. It includes enhanced openness among lower levels, 'improved employees' problem-solving skills, and assistance in taking responsibility for their actions (Travern et al., 2021; Werner et al., 2016). 'A manager should warrant that employees in the lower positions receive the precise combination of information, skills, authority and motivation to allow them to function unconventionally or in a self-reliant manner, free from management control and direction. The observed findings propose that employee empowerment influences work-linked opinions (Fernandez & Moldogaziev, 2015; Naidoo & Ramphal, 2020).

Despite the importance of employee empowerment in the industrial sector, little is believed to impact contextual variables or empowerment outcomes (Kim & Shin, 2017; Travern et al., 2021). According to Kim and Fernandez (2017), few studies have investigated the influence of employee empowerment – as a multidimensional managerial strategy – on turnover possibilities in the public sector. As a result, Dahou and Hacini (2018) urge that future studies and/or researchers should identify other variables that might influence employee empowerment in companies and expand the number of scenarios to which it applies. Different from transactional leaders, transformational leaders accentuate positivity, mutual respect and employee empowerment, which enhance employees' intrinsic motivation. Consequently, TFL may possibly be one of the few leadership variables that organisations can use, to influence and drive the desired transformation (Chitiga, 2018).

6.1. The Business Landscape of a South African Research Organisation

Schedule 3A entities are usually extensions of a government organisation whose mission is to fulfil a certain economic or social duty. They rely on government and public funds, whether through a transfer from the revenue fund or statutory funds. According to the National Treasury regulations (National Treasury, 2015), an institution can include a public entity or constitutional institution listed in Schedule 3A of the Public Finance Management Act 1 of 1999 (PFMA) (RSA, 1999). State-owned firms (also known as public entities) are private companies that the government partially or entirely owns. They have distinct responsibilities and act in line with a set of laws. In South Africa, corporatisation, or the transfer of state assets or agencies into state-owned businesses, was adopted in several areas (Kikeri, 2016). Although the identity of the chosen organisation is not disclosed in this study, and is referred here to as "Entity A", it is one of the institutions listed under the PFMA's Schedule 3A entities. Entity A was established under the Water Research Act 34 of 1971 (RSA, 1971) after a period of severe water scarcity. In the 21st century, one of South Africa's most limiting elements will be water, so the production of new data and the advancement of water research are deemed to be of national importance. The goal is to provide information to policy- and decision-makers and develop innovative products, services and technologies for socioeconomic development (WRC Corporate Services, 2018).

With the help of leaders, TFL focuses on practices that strengthen followers' trust and morale (Han et al., 2016). Workers in the public sector must be resilient enough to cope with increasingly unpredictable situations and must be able to respond in a resilient manner to ongoing problems in the face of conflicts and contradictions (Han et al., 2016; Travern et al., 2021).

6.2. The Concept of Leadership

The process whereby a leader seeks the participation of all members of an organisation, influences relationships, and motivates or empowers others, is known as leadership (Candra & Sundiman, 2020; Chhotray et al., 2018; Kelloway & Gilbert, 2019; Naidoo & Ramphal, 2020). In football, for example, the current leadership philosophy strongly emphasises individual leadership. Regardless of his/her leadership style, a true or effective leader inspires, motivates and guides efforts to attain his/her objectives (Naidoo & Rajcoomar, 2020; Travern et al., 2021). TFL theory should be considered a possible replacement for current leaders, as it prioritises basic needs over higher desires while

encouraging proponents to come up with ever-newer solutions. Mostafa et al. (2015), who examined the role of leadership in the workplace, concluded that TFL is a valuable leadership style.

6.2.1 Transformational Leadership

Saira et al. (2020) state that TFL is "the capacity of managers or supervisors to widen and raise followers' aims by inspiring and equipping them with the confidence to execute above the employment agreement's defined expectations". Such leaders encourage workers to go above and beyond the tasks specified in their job descriptions, by making them aware of their real potential, fostering contentment, creating supportive settings, and empowering them psychologically (Naidoo & Ramphal, 2020; Saira et al., 2020; Travern et al., 2021).

TFL has a tremendous impact on large organisational transitions in that it fosters collectivism and influences individual attitudes and beliefs.

6.2.2 Transformational Leadership Practices

Organisations are constantly looking for new ways to improve. TFL practices are well suited to developing responsible citizens wherever they are located in the world (Ewest, 2015; Naidoo & Rajcoomar, 2020). Such leaders are known for their idealised impact, inspiring motivation, individualised consideration, and intellectual stimulation. Employees become more dedicated to their organisations' objectives when they perceive their leaders as offering support and inspiration. In support of the above argument, Werner et al. (2016) elaborate on the following TFL dimensions:

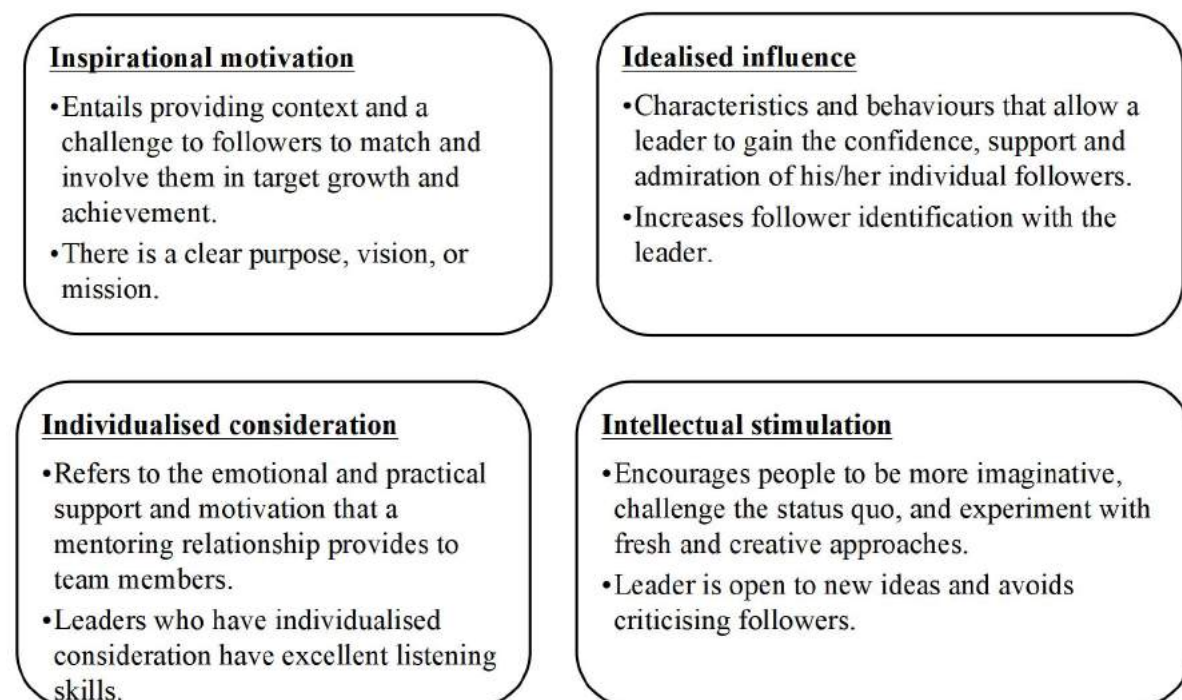


Figure 1: TFL Dimensions
Source: Werner et al. (2016)

6.3 Transformational Leadership Factors in an Organisational Context

A transformational leader inspires and encourages his/her followers while cultivating a creative environment. Employees with TFL qualities were found to be more adaptable and persistent (Baškarada et al., 2017; Naidoo & Rajcoomar, 2020).

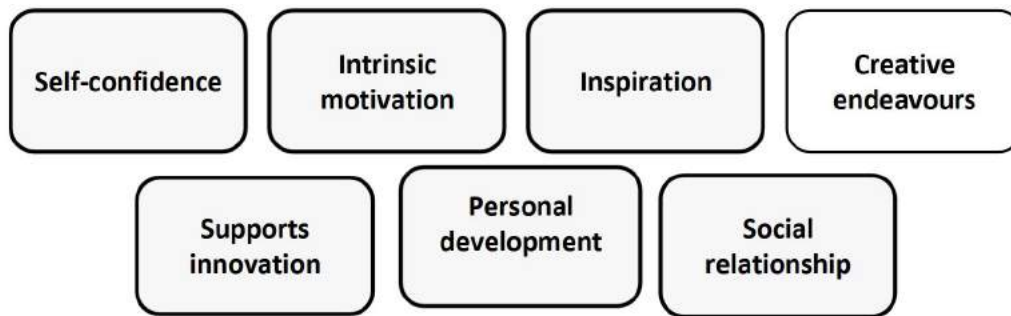


Figure 2: TFL Factors
Source: Al-Harbi et al. (2019)

Al-Zefeiti and Mohamad (2015) state that perceptions of support for innovation and psychological empowerment enhance employee creativity. Within TFL, a better explanation of how leaders create a shared vision of trust and collaboration, empowerment, and collective recognition, effectiveness and knowledge, has strengthened related theory. A leadership style such as TFL strengthens self-efficacy, improves intrinsic motivation, and empowers employees psychologically. To understand the relationship of TFL to other factors of leadership, Kesting et al. (2015) identify three types of leaders: the authentic, the pseudo-transformational and the power-hungry. They propose a mix of charismatic and instrumental leadership for bringing about organisational transformation (Kesting et al., 2015).

6.3.1 Employee Empowerment

Bindurani (2015, p. 1) defines employee empowerment as a "process of providing employees a certain degree of independence and accountability for decision-making related to their precise organisational responsibilities and allowing decisions to be made at lower levels of an organisation where employees have a unique perspective on problems and issues affecting the organisation at a certain level". Chhotray et al. (2018, p. 7) expand on this definition, stating that employee empowerment is a multifaceted term that explains how leaders lead, how individuals react, how peers engage, and how work-related procedures are structured (see also Tavern et al., 2021).

The definition by Choi et al. (2016, p. 4) states that employee empowerment is a management strategy that can encourage employees to go beyond the call of duty and complete tasks more flexibly. For them, the emphasis is thus on the flexible completion of tasks, relative to granting employees independence yet emphasising accountability, where problems affecting their work are identified. Bindurani et al. (2015) confirm that employee empowerment is a valuable tool for motivating and encouraging accountability. There is no distinction between how employees should engage when faced with decisions at a certain level and how they will be developed. Where effective ethics strategies are implemented, employees' wellbeing will directly impact organisational performance (Bindurani et al., 2015). Hence, Bindurani's (2015) definition is more relevant to the current study in that the management model shows that employees are empowered by fostering open communication, rewarding self-improvement, clearly defining roles, and supporting their independence. Delegating power from top to bottom, with defined boundaries and restrictions, as well as rigorous measures of accountability, enhances management control (Perkins, 2019). According to Baird et al. (2018), employee empowerment increases self-efficacy, job motivation and organisational identity among employees. The theory of employee empowerment, as well as the elements that drive it, is becoming increasingly relevant in A-type enterprises: as the findings from a census survey performed by the researcher in Entity A revealed, a lack of morale, happiness, loyalty and efficiency stemmed from the absence of leadership empowerment (Baird et al., 2018). Little attention has, however, been paid to how leaders affect subordinates' attitudes towards empowerment and innovation.

6.3.2 Intrinsic Motivation

According to Baldé et al. (2018, p. 6), intrinsic motivation is a "knowledge transfer hub that plays an important role in determining effective knowledge transfer as motivated by organisational members to deal with structured situations more easily and effectively and to transfer knowledge more quickly".

For Legault (2020), intrinsic motivation is a type of behaviour that is intrinsically rewarding or enjoyable (see also Naidoo & Rajcoomar, 2020). Employees who do not have their basic needs (Maslow, 1970) addressed at work, will not perform as well as they can (Werner et al., 2016). Baldé et al. (2018) add that "[m]anagers should be aware of their employees' requirements".

Empowering leadership, according to Naidoo and Rajcoomar (2020), can improve the extent to which individuals' creativity flourishes in organisations. Ethical standards and high expectations must drive transformational leaders (Zaman et al., 2019) to promote self-esteem, help them meet the high expectations of customers, and fulfil the drive to inspire (Fareed & Su, 2021).

6.3.3 Leader–Member Exchange

In many South African workplaces, there are leadership problems aplenty, notably those connected to employment relations between members and leaders. Given the work–family conflicts that employees experience, establishing good relationships at work is critical (Visagie, 2019). It is thus impossible to exaggerate the importance of the leader–member relationship (Omilion-Hodges & Baker, 2017). Receiving developmental feedback from a superior was positively correlated with an employee thriving at work (Lin et al., 2020). Leaders who have developed high-quality strategies for expressing their thoughts and ideas to their followers, are more likely to be open and honest with them (Visagie, 2019). Here, the focus is on the characteristics that promote creative thinking. Despite the government's growing demand for innovation, some businesses may restrict employees from trying out new ideas, with hierarchies, risk avoidance, and the formalisation of work and decision making being to blame, according to Omilion-Hodges and Baker (2017). As a result, many employees have experienced a lack of organisational dedication, involvement and job happiness. To combat this, governments – like private-sector organisations – have been under strong pressure to work more efficiently and effectively over the past decade.

6.3.4 Organisational Behaviour

Werner et al. (2016) and Travern et al. (2021) outline organisational behaviour as a scientific field of study devoted to understanding, explaining and appreciating the many forces that influence the activities of an organisation and how making sound decisions (about how to motivate and coordinate people and other resources) can contribute towards achieving organisational goals. The qualities and behaviours of employees in isolation and the people who make up an organisation are the focus of organisational behaviour. The level of analysis in organisational behaviour is concerned with activities, the management process, their relationships with the outside world, and how they interact with one another. Naidoo and Rajcoomar (2020) argue that having a working grasp of contemporary organisational theories, research and practice, can assist in establishing a holistic understanding of why employees believe and act in the way they do. Thus, the organisation influences (and is influenced by) individuals working within its various structures (Naidoo & Ramphal, 2020; Werner et al., 2016). If Entity A intends to embrace integrated cooperation, diversity, creativity and empowerment, it must examine its organisational behaviour from a meso viewpoint, and foster an atmosphere of mutual trust, respect, honesty and personal integrity.

6.4 Relationship Between TFL and Employee Empowerment

Leadership that fosters a strong bond between employees and the organisation, aids in the achievement of organisational goals. TFL gives employees the perception that the organisation cares about them and fosters attachments among its members. The process involves people in the organisation, through a socialisation process (Choi et al., 2016). In the long term, one of the mechanisms used to promote employee development, is empowerment. Research indicates that four TFL characteristics (see Figure 3) serve as referents to employee empowerment in organisations. TFL is especially important in terms of motivating and cognitively empowering employees, and while it is relatively effective within organisations, its effectiveness is dependent on employees' attributes (Kim & Shin, 2017; Naidoo & Ramphal, 2020; Travern et al., 2021). The role of TFL and employees in organisations can be positively mediated through empowerment.

6.5 Conceptual Framework

The conceptual framework in Figure 2 arose from research in the field of employee empowerment success, and the influences of leadership support, motivated by TFL. TFL and decision-making authority contribute to employee empowerment (Dahou & Hacini, 2018), which is necessary for improving job satisfaction and serves as a mediator between TFL and job satisfaction. Policy interventions and corporate plans should thus include both TFL and empowerment to successfully improve job satisfaction in the workplace (Choi et al., 2016). The model outlines the steps required in a researcher's methodology, to assess the problem from a unique approach.

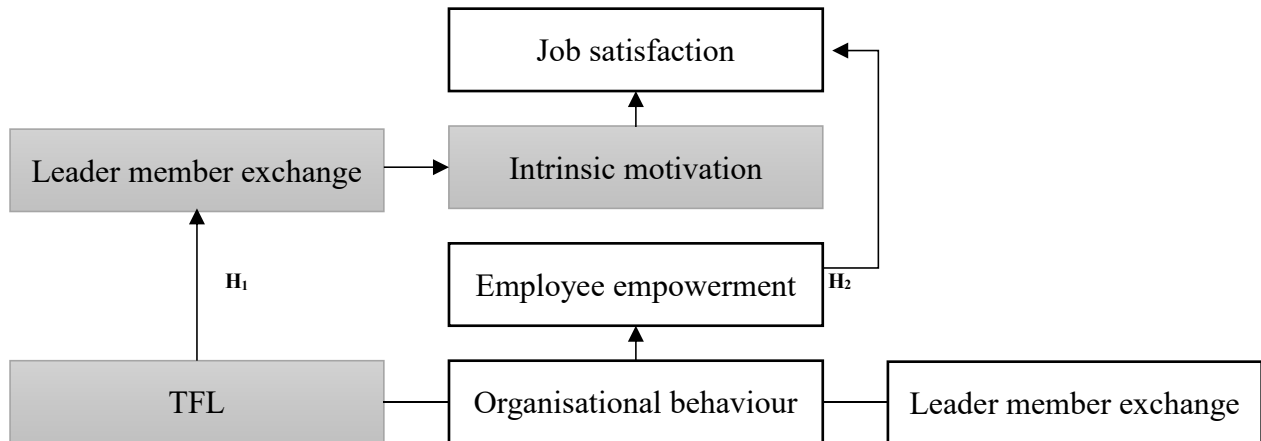


Figure 3: Hypothesised framework
Source: own compilation

7. Research Methodology

7.1 Research Design

This study employed an empirical paradigm, using a cross-sectional design and quantitative analysis, since it is dependent on dimensions that evaluate and explore numerous variables. Data on employee empowerment, intrinsic motivation, leader-member exchange, and job satisfaction were gathered at a given time with the primary goal of identifying correlations between the variables that will guide methodological choices. Furthermore, independent, quantitative census sample was used to examine the effect of TFL on the variables.

7.2 Approach

A deductive technique was utilised to allow the researcher to test theories based on previously gathered material. One or more premises are used in deductive reasoning – premises being assertions or beliefs that the researcher considers to be true, at first (Leedy & Ormrod, 2016). Data are utilised to test the hypotheses or assertions connected to an existing theory (Lewis & Thornhill, 2019; Saunders et al., 2019). Non-profit organisations lack the adaptation of employing TFL as a leadership strategy, as evidenced by the literature (Chitiga, 2018), and the aforementioned hypotheses will be investigated to acquire empirical proof. The intention of the deductive methodology was used to examine the notion of a link between TFL, employee empowerment and intrinsic motivation.

7.3 Strategy

The research strategy has a significant impact on the nature of the research being conducted, and the manner in which data are subsequently interpreted (Saunders et al., 2019). The relationship between a manager's TFL attributes and employee empowerment, as well as leadership limits in organisations, were studied using a survey method. The data-gathering approach was explicitly detailed as a census survey, the questions of which were related to all three hypotheses.

7.4 Quantitative Research Design

Quantitative research designs are used to either describe the characteristics of a phenomenon that has been observed, or to look into possible relationships between two or more occurrences (Leedy & Ormrod, 2016). A quantitative approach was used to examine how these factors interact (McCusker & Gunaydin, 2015).

7.5 Time Scales/Horizons

A cross-sectional study of the complete population chosen for the study was conducted, to determine whether TFL has a good influence on employee empowerment, resulting in an intrinsically motivated and engaged workforce in Entity A. Cross-sectional studies, according to Leedy and Ormrod (2016), are easier and faster to perform, since the researcher can gather all the necessary data at once.

7.6 Technique and Procedure

Web-based interviews are a type of self-administered survey with benefits and limitations that are similar to those of mail surveys (Blumberg et al., 2014). Here, the purpose of the questionnaire was to conduct a sample survey, using a five-point Likert scale, of a comprehensive population within Entity A. The medium for distributing the online surveys was Survey Monkey. With the questionnaire as primary tool for gathering data, it was delivered in the same way (via email) to all respondents.

7.7 Population of the Study

The outcomes of this study were extrapolated to a single research organisation with a staff complement of 100 employees. The study omitted contractors and temporary employees, with only permanent employees being considered. The actual name of the Schedule 3 entity (research organisation) need not be used in this kind of study, as stated by Blumberg et al. (2014).

7.8 Sample framework

A census counts the entire population in a specific area (Cooper et al., 2014). Censuses are generally regarded as surveys, even though they frequently seek to count an entire population explicitly rather than making an estimate based on a small segment or sample (Leeman, 2016). A random sample was chosen, to avoid sampling errors or biases due to the population size.

Table 1: Population and Sample Framework

Operational unit	Total population	Sample size	%	of
Finance	14	14	14	
Innovation & Impact	13	13	13	
Research & Development	43	43	43	
Corporate Services	30	30	30	
Total	100	100	100	

The population and sample framework were based on the total number of participants from the organisation under study. Of a population of 100 respondents, 91 participated in the census survey.

7.9 Data Collection

The purpose of data collection was to gather primary data for the study on which this paper is based, and to that end, an indirect communication method was employed using an online web-based survey.

7.10 Data Analysis

In this study, data were managed and transferred from Microsoft Forms into Excel Spreadsheets. Microsoft Forms was only used to extract completed questionnaires. All of the questions in the survey were marked as compulsory.

7.11 Reliability and Validity of Data Gathering

This study measurement was established to warrant its validity and reliability. To ensure that the study instrument offered accurate data, a five-point Likert scale was used. The data were gathered on the scale and translated from basic data values to numerical data, for statistical analysis. We can only reliably measure something if we can measure it consistently, hence improving the reliability of measurement equipment may also improve its validity. We cannot collect valuable data unless we have reasonably valid and reliable measures of the traits and phenomena being studied. The extent of the inaccuracy of measurements, is reflected in both their validity and reliability (Leedy & Ormrod,

2016). To collect responses and create graphical interpretations of each question's numeric figure centred on the Likert scale, a web-based survey programme was employed. To ensure data accuracy, the report focused on only the most important components, such as identifying employees in the R&D environment. The survey was piloted with a smaller group of respondents as part of a process to help identify both potential problems and potential solutions, particularly in terms of how respondents comprehend and respond to surveys. The questionnaire was fine-tuned after receiving feedback from the respondents to verify the data's validity and reliability. The questionnaire's pilot study proved the significance of the theories and ideas, as well as their precision and applicability, and the content's completeness. For data analysis, Stata was utilised, a statistician was engaged to assure authoritative and reliable results. Cronbach alpha coefficient (α) was applied to examine the internal reliability of the hypotheses in the research instrument.

8. Results and findings

Based on the reliability statistics for the constructs, shown in Table 1, it can be concluded that the reliability of all the constructs was satisfactory.

Table 1: Reliability statistics

Cronbach's Alpha index	Cronbach's Alpha index based on standardised items	No. of items
Transformational leadership	0.903	8
Employee empowerment	0.843	6
Employees' intrinsic motivation	0.764	5
Job satisfaction	0.822	6
Leader–member exchange (relationship)	0.848	6
Organisational behaviour	0.808	5

8.1 Response rate

Fincham (2008) stresses that the response rate for a survey should be in the range of 60 per cent as a minimum goal for the researcher. A total of 91 of the 100 employees who were sent questionnaires to fill out participated in this survey, resulting in a response rate of 91 per cent. According to Fincham (2008), and Mellahi and Harris (2016), this suggests that the study's findings are credible. The researcher thus determined that the response level was satisfactory, and that the findings were reliable, valid, and generalisable to the focus population.

8.2 Descriptive data analysis

This section presents the descriptive data analysis of the demographic data and general information. These data were collected under the first section of the questionnaire. Of the 91 respondents, 37 (40.7%) were male and 54 (59.3%) female, while around 85 per cent of the respondents were between the ages of 21 and 50.

8.3 Inferential data analysis

8.3.1 Correlation analysis

The results indicate that all of the correlations between the variables were highly significant, but the multicollinearity problem was not suspected. The correlation coefficients ranged between 0.540 (between transformational leadership and leader–member exchange (relationship)) and 0.843 (between transformational leadership and employee empowerment). This gave the researchers the confidence to proceed with regression analysis. It was also indicated that all of the independent variables were highly correlated with the dependent variable, which was employee empowerment at the one per cent level of significance.

8.3.2 Regression Analysis

t-test

The t-distribution was used to compare the mean scores on the Likert scale with the undecided or neutral score of 3, which was the mid-point between "disagree" and "agree", by applying the one-sample t-test.

$$T = \frac{\bar{X} - \mu}{S/\sqrt{n}}$$

By testing the null hypothesis that the calculated (or assumed) mean score for a particular question was equal to 3 (meaning that the respondents were undecided on the statement or question), the level of significance used was 0.050. As an example, for Statement 1 (Section B of the questionnaire "Leadership behaviour in your organisation is related to subordinate satisfaction and task commitment"), the computed mean score for the respondents was 3.374 (std. dev. = 1.082), which was more than 3 (and $t = 3.295$, $p\text{-value} = 0.001 < 0.010$). This suggests that the respondents concurred with the statement.

In respect of TFL, for all of the items except item 7, "Employees feel trust, admiration, loyalty and respect toward the leader" ($t = 0.732$, $P\text{-value} = 0.233 > 0.050$), the null hypothesis was rejected ($p\text{-value} < 0.05$) and so the alternative hypothesis (where the mean score was greater than 3) was accepted. This implies that most respondents agreed with almost all of the items. In general, the respondents were undecided on the statement that "Employees feel trust, admiration, loyalty and respect toward the leader".

Employee Empowerment: The respondents generally agreed with four statements, but were undecided on two of them, namely: "There is a rise in morale, happiness, loyalty and efficiency as a result of leader empowerment" ($t = 0.185$, $P\text{-value} = 0.427 > 0.050$); and "My organisation is flexible, hence transferring power, authority with responsibility and accountability to the employees is easy" ($t = 0.537$, $P\text{-value} = 0.296 > 0.050$).

Employee Intrinsic Motivation: The respondents agreed with three statements, but disagreed with two, namely "Promotional opportunities: The organisation has created clear criteria for promotions based on meritocracy and transparent processes" ($t = -4.657$, $P\text{-value} = 0.000 < 0.010$); and "I will most likely not look for work outside of the organisation" ($t = -2.080$, $P\text{-value} = 0.020$).

Job satisfaction: The respondents agreed with four statements, but were undecided on one statement, namely "My organisation is comfortable with change" ($t = 0.662$, $P\text{-value} = 0.255 > 0.050$); and disagreed with one statement, namely "I believe that management is open and honest" ($t = -1.938$, $P\text{-value} = 0.028 < 0.050$).

The results indicate that the respondents generally agreed with all the leader-member exchange (relationship) statements. The mean scores for all six statements were significantly above 3 (undecided).

Organisational Behaviour: The respondents agreed with four of the statements, but were undecided about one, namely "The acknowledgment or rewards for attaining goals, as well as the criteria for promotion, are motivated by the organisation" ($t = 0.500$, $P\text{-value} = 0.309 > 0.050$).

8.4 Mediating Variable

In this study, firstly, a regression model was fitted to include the independent variables, which were transformational leadership, job satisfaction, leader-member exchange (relationship) and organisational behaviour.

8.4.1 Employee Empowerment

The results in Table 1 indicate that the fitted regression model ($F=77.15$, $P\text{-value} = 0.000$) was highly significant. The adjusted R-square was 0.772, which means that the model explains 77.2 per cent of the variation of the employee empowerment variable. Of the four independent variables, only two were significant and affected employee empowerment positively, namely transformational leadership ($t = 7.91$, $P\text{-value} = 0.001 < 0.010$) and leader-member exchange (relationship) ($t = 3.53$, $P\text{-value} = 0.001 < 0.01$). Job Satisfaction ($t=0.74$, $P\text{-value}= 0.459$) was not found to affect employee empowerment. This implies that transformational leadership practices and the leader-member exchange relationship helped to enhance employee empowerment in the organisation.

Table 1: Regression Model for Employee Empowerment (without Employee Intrinsic Motivation)

Observations	Parms	RMSE	Adj. R-Sq.	F (4, 86)	P-value		
91	4	0.397	0.772	77.15	0.000		
Variable		Coeff. Limit	Std. Error	t	P-value	Lower Limit	Upper
• Transformational leadership		0.581	0.073	7.910	0.000	0.435	0.727
• Job satisfaction		0.069	0.093	0.740	0.459	-0.115	0.253
• Leader-member exchange (relationship)		0.285	0.081	3.530	0.001	0.124	0.445
• Organisational behaviour		0.110		0.095	1.160	0.249	-0.078
• Constant		0.298					
		-0.231		0.237	-0.970	0.333	-0.702
		0.240					

Table 1 shows the results when the mediating variable, employee intrinsic motivation, was included in the regression model. The fitted regression model ($F=72.20$, $Prob. = 0.000$) was also highly significant. The adjusted R-square slightly increased to 0.798, which means that the model explained 79.8 per cent of the variation of the dependent variable. Apart from transformational leadership ($t=7.340$, $P\text{-value}=0.000 < 0.050$) and leader-member exchange (relationship) ($t=3.23$, $P\text{-value}=0.002 < 0.01$), employee intrinsic motivation ($t= 3.49$, $P\text{-value}=0.001 < 0.01$) was also highly significant, and hence, also affected employee empowerment positively, as expected. Since the changes in the coefficient of transformational leadership between the first and second regression models (i.e., 7.91 and 7.34) did not seem significant, this implies that employee intrinsic motivation did not mediate the relationship between transformational leadership practices and employee empowerment.

Table 2: Regression Model for Employee Empowerment (with Employee Intrinsic Motivation)

Observations	Parms	RMSE	Adj. R-Sq.	F (5, 86)	P-value		
91	4	0.373	0.798	72.20	0.000		
Variable		Coeff. Limit	Std. Error	t	P-value	Lower	Upper
• Transformational leadership		0.522	0.071	7.340	0.000	0.381	0.663
• Job satisfaction		-0.117	0.102	-1.150	0.255	-0.320	0.086
• Leader-member exchange (relationship)		0.248	0.077	3.230	0.002	0.095	0.400
• Organisational behaviour		0.074	0.090	0.830	0.411	-0.104	0.252
• Employee intrinsic motivation		0.340	0.097	3.490	0.001	0.147	0.534
• Constant		-0.199	0.223	-0.890	0.374	-0.643	0.245

8.4.2 Employee Intrinsic Motivation

Table 3 shows the fitted regression model of employee intrinsic motivation, where transformational leadership and organisational behaviour were the independent variables.

Table 3: Regression Model for Employee Intrinsic Motivation

Observations	Parms	RMSE	R-Sq	F	Prob.		
91	2	0.504	0.561	58.58	0.000		
Variable	Coeff. Limit	Std. Error	t	P-value	Lower Limit	Upper	
• Transformational leadership	393	0.085	4.500	0.000	0.214	0.553	
• Organisational behaviour	0.422	0.105	4.030	0.000	0.214	0.631	
• Constant	0.341	0.268	1.270	0.206	-0.191	0.873	

The results indicate that both variables affected employee intrinsic motivation; while transformational leadership ($t=4.500$, $P\text{-value}=0.000<0.010$) and organisational behaviour ($t=4.030$, $P\text{-value}=0.000<0.010$) affected employee intrinsic motivation positively. The higher the levels of transformational leadership, the higher the levels of employee intrinsic motivation; and the higher the levels of organisational behaviour, the higher the levels of employee intrinsic motivation.

9. Discussion

The findings of the quantitative research instruments were presented and reviewed. The study's quantitative approach yielded a wealth of data and descriptive insights from Entity A employees, who faced empowerment and intrinsic motivation challenges that required TFL practices to succeed. The survey elicited responses that answered the research questions in a manner that gave a clear picture of the entity's core challenges. The application of statistical analysis allowed for the creation of correlations and the drawing of conclusions regarding the quantitative results. Employee empowerment statements such as "There is a rise in morale, happiness, loyalty and efficiency as a result of leader empowerment" and "My organisation is flexible, thus transferring power, authority with responsibility and accountability to the employees is easy" did not elicit conclusive responses, as the majority of respondents were undecided on this issue. The respondents disagreed with two statements regarding employee intrinsic motivation, namely "Promotional opportunities: The organisation has created clear criteria for promotions based on meritocracy and transparent processes" and "I will most likely not look for work outside of the organisation". They were also undecided about the statement "My organisation is a great place to work", when it came to job satisfaction. The findings point to a problem with power transfer and opportunities for promotion, which might lead to employees looking for work elsewhere. The results reported, largely supported the theoretical framework, and offered several implications for employee empowerment-related research.

To address the research challenge, the study employed a census as quantitative method. Thus, the primary means of gathering input from Entity A entailed a quantitative technique with a maximum sample size ($n=100$) based on the total number of employees. The study questions were answered using the major findings from participant responses.

The paper was set out to answer the following two research objectives:

1. To determine the effect of the transformational leadership practices on employee empowerment.
2. To evaluate the effect of the transformational leadership practices on intrinsic motivation.

First, TFL practices were found to be significantly and positively related to employee empowerment, which offers further evidence that those practices, along with leader–member exchange relationships, enhance employee empowerment in the workplace. Job satisfaction, however, was found not to have an impact on employee empowerment. The results further indicated that both TFL and organisational

behaviour affected employees' intrinsic motivation positively, which rose in direct proportion to the level of TFL, and in direct proportion to the level of organisational behaviour.

1. H1: Hypothesis 1 (Accepted) - Transformational leadership has a positive relationship with intrinsic motivation and employee empowerment,
2. H2: Hypothesis 2 (Accepted) - Transformational leadership has a positive effect on job satisfaction and trust.
3. H3: Hypothesis 3 (Accepted)

Intrinsic motivation mediates the relationship between employee empowerment and transformational leadership.

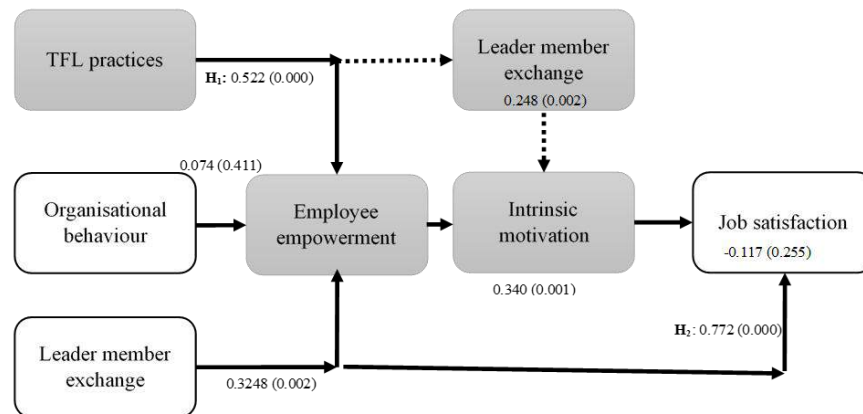


Figure 4: Empirically derived conceptual framework

Furthermore, based on the hypotheses derived from the findings, it is clear that TFL, organisational behaviour and leader–member exchange have a positive effect on employee empowerment.

Furthermore, TFL and leader–member exchange have a positive effect on intrinsic motivation. Therefore intrinsic motivation does not mediate the relationship with TFL, and employee empowerment are not affected by employee empowerment, is accepted. Therefore organisations' requires employees to be highly motivated, to be satisfied with their jobs.

The respondents were found to have a certain perception of their leaders, based on their views of the leader–member exchange, which requires attention to achieve trust, autonomy, motivation and empowerment. While clear communication was in evidence, leaders can change and build stronger relationships with their employees as a means of motivating them to use their skills to advance into leadership positions. In Entity A, the followers' perceptions of their leaders had an impact on their individual performance in working toward a common goal.

9.1 The Existence of TFL

For factors such as accelerated development and high turnover, change and successful change management have become amongst the top goals of all corporate organisations, regardless of the nature of their operations. Since change the world over is occurring at an increasingly rapid rate, and becoming increasingly complex, leadership and change may have become major headaches for modern organisations. As a result, organisations do not rely solely on managers, but also on the capacity of leaders to persuade others to sufficiently believe in the organisation's vision and mission, to make the necessary changes (Alqatawenh, 2018). The ability to deal with change effectively, calls for leadership behaviour that is aligned with the job of the organisation – something Burns (1978) refers to as transformational leadership. As the results of this study indicate, the working relationship between TFL, leader–member exchange, and organisational behaviour enhanced employee empowerment in the organisation under investigation. Those factors correlate, to a certain extent, with intrinsic motivation. Since the differences in the coefficient of TFL between the first and second

regression models (i.e., 7.91 and 7.34) do not appear to be significant, it suggests that employee intrinsic motivation did not moderate the correlation between TFL practices and employee empowerment. The existence of transformational leaders in an organisation indicates that such leaders have charisma, provide intellectual stimulation and motivate their people, to improve communication, trust and information sharing. Such leaders are critical in creating an environment that promotes organisational learning (Para-González et al., 2018).

10. Managerial Implications

This study provided empirical evidence and closed an identified gap in the literature, by offering a detailed view of the factors influencing employee empowerment and intrinsic motivation in a Schedule 3A entity. TFL was positively associated with employee motivation, and thus acted as a catalyst to energise, direct, and maintain the types of employee behaviour that are ultimately linked to employee performance. Transformational leaders assist employees in gaining a sense of direction, and assign new assignments to enable them to contribute to that vision.

Transformational leaders change the organisational culture so that employees believe in themselves, can accomplish more than they would imagine; they foster self-assurance, and confirm to followers that their contribution counts. Such leaders value employees' opinions, regardless of their position in the organisation/

11. Conclusion

The study began by interrogating how to promote positively engaged and empowered employees, through Schedule 3A entities of the South African government investing in TFL practices. This begged the question whether it is a simple exercise to put into practice. From the findings it appeared that it need not be a complicated process, provided an organisation had engaged transformational leaders and implemented the correct practices. As deduced from the respondents', TFL practices were significantly and positively related to job satisfaction which provided further evidence that TFL practices and leader-member exchange relationships enhanced employee empowerment in the workplace.

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The Influence of Cross-Generational Management in Creating Agricultural Learning Organisations

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Keywords

Learning organisation;
agriculture; managers;
generational cohorts;
Baby Boomers;
Generation X;
Generation Y

Abstract

Constant learning to adapt and evolve is a strategic imperative for organisations that wish to remain competitive. But do managers from different age groups agree on the importance of organizational learning?

This study focused on agricultural businesses as learning organisations to determine whether different generational cohorts of managers would characterise their organisations as learning organisations. The results obtained were compared to determine trends and biases in this regard.

The Learning Organization Survey was distributed among 200 managers from three different agricultural organisations in South Africa and 136 responses were received. The results showed that, overall, managers in agricultural organisations do not perceive their organisational units to be learning organisations. Although the magnitude of differences between age cohorts varied, it was furthermore clear that managers from different generational cohorts might be susceptible to biases affecting aspects of organizational learning and which may influence their strategies to drive innovation.

This study brings new insights that can contribute towards the more effective management of food production as a strategic resource. Managers are sensitised to valuable information on how to become a learning organisation and how to develop strategies to maximise the involvement and contribution of managers from all the different generational cohorts.

1. Introduction

In Africa there are specific historical challenges for development in the agricultural sector, such as a high disease burden, generally poor soil quality, historic mobility of workers due to the slave trade, forced labour schemes, export of raw materials, introduction of foreign crops, and more recently climate change, natural resource degradation, rapid population growth, rural poverty, lack of smallholder agricultural development, land ownership and availability and technological stagnation (Cilliers, 2020). Addressing these challenges calls for organisations (and leadership in these organisations) that can evolve and provide specific solutions for the African continent.

The key success factor affecting organisational performance is the mechanism of an organisation to train the organisational members' capabilities of participation and innovation (Shieh, 2011). Considering this, an organisation with high performance has to be one that can adapt fast, because of the need to promptly adapt to environmental changes, in the face of challenges (Shieh, 2011). Like people, organisations should learn to adapt successfully to the ever-changing business reality, and therefore it is a critical success factor for an organisation to gain any kind of competitive advantage to have the ability to learn and exploit its existing knowledge base (Singh, 2011). Unless agricultural organisations become learning organisations, they will not survive in the new competitive, globally connected world where organisations must be high-performance organisations in the face of fierce challenges (Shieh, 2011).

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An organisational workforce needs to be led by a manager cohort, and this organisational cohort probably consists of many different types of people, who may have very diverse ways of thinking, feeling and behaving. One way of delineating the differences and categorizing managers is to look at generational trends. Generational dynamics can explain much of who people are and why organisations function the way they do, because it provides a mechanism to understand the forces that shape us as individuals and societies, even though it is merely one important part of managerial dynamics (Duffy, 2021). Systemic generational thinking encourages long-term thinking that includes the period, lifecycle and cohort effects and forces that fuel the differences experienced by each generational cohort (Duffy, 2021).

Studies (Abma et al, 2016; Prillentsky and Prillentsky, 2021) have shown that having a well-functioning workforce is dependent on their well-being mattering in the organisation. It is essential to create sustainable employability conditions for the workforce that include (amongst others) that they feel valued, that they believe they are adding value, and that they get to use and develop their knowledge and skills in their work. This links back to an organisation's capability to strive towards entrenching the values and ways of doing and being to be a continuously learning organisation that understands the needs of its workforce.

2. Problem Investigated

Research about learning organisations within the South African context is limited - there seems to have been one previous study in this regard to determine the extent to which a learning organisation culture influences employee engagement (Knox-Davies, 2010). As far as we know, research about learning organisations in the South African agricultural environment has never been done. Furthermore, managers do not necessarily know how to build a learning organisation, because they do not know the precise steps to build a learning organisation. Organisations and managers lack tools for assessing how learning is benefiting the organisation and whether their teams are learning (Garvin, *et al.*, 2008).

Inherent biases may also manifest in managers (Wright, 2019), and may include being afraid of failure, a fixed mindset, past performance, deficient reflection, being convinced of a need to conform, and insufficient frontline participation and action in addressing problems (Gino & Staats, 2015). There are several different strategies managers could use to prevent such biases. Generational bias is one aspect that may hinder business expansion and production (Sorbelllo, 2021). Previous studies suggest that there are significant differences across generations regarding family values and situations (Wong *et al.*, 2008), core values and attributes, workforce values and expectations (Magni & Manzoni, 2020), education, communication (Zemke *et al.*, 2013), dealing with money and business risks (Petráková, 2021), psychological ownership (Olckers & Booysen, 2021), and other workplace-related dimensions and leadership practices (Stevanin et al, 2020; Van Rossum, 2021), but not for employee engagement, meaningfulness, availability and safety (Muselman, 2021) or intrinsic and extrinsic motivational preferences that may influence behaviour at work (Kerr & Heyns, 2018).

The demographic profile of the agricultural sector displays a large tendency towards having the bulk of employees and managers from Generation X, thereby creating a predominant Generation X organisation. The majority of agricultural organisations are also managed by managers from the Generation X era (managers with ages ranging from 41 to 52 years in 2017 (The Center for Generational Kinetics, 2016). There could be a possibility that cross-generational management styles, therefore, influence the capability of agricultural organisations to learn and be productive.

3. Research Objectives

The primary aim of the study was to determine agricultural organisations in South Africa are experienced as learning organisations by their managers and how this differs for the different generational cohorts of managers in these organisations.

4. Hypotheses

The following hypotheses were formulated for the study:

- H₁: Agricultural organisations in South Africa are experienced as learning organisations by their managers.
- H₂: There are differences between the perceptions of managers from different generational cohorts relating to their perception of their organisational units' functionality as learning organisations.

5. Literature Review

The purpose of the literature review is to provide insight into and define the two key concepts relevant to this study, namely what a learning organisation is, and secondly, to provide some insight into the different generational cohorts represented in the workplace.

5.1. Learning organisations

Themes that describe the values, enabling conditions and realization of outcomes (Abma et al., 2016) that form part of a learning organisation have been included in various definitions and frameworks (Alerasoul et al., 2022). In learning organisations shared learning values and principles are visible throughout the organisations' culture and fibre (Watkins & Marsick, 1992; Aggestam, 2006; Pnnuswamy & Manohar, 2016, Klak, 2021). A common vision (Senge, 1990; Pedler et al., 1991; Shieh, 2011) based on organisational trust (Senge et al., 2005), inform the explicit and professed aim of facilitating and realising learning at a wide level and of wanting to learn (Pedler et al., 1991; Malizia, 2012). The strategic objectives, which are reliant on continuous learning or trial and error (Shieh, 2011) includes a process of knowledge creation that plays a crucial role and forms an underlying basis or principle of the organisation (Swart et al., 2005, Klak, 2021; Rudančić, 2021). Personal capability, intellectual methods, team learning and systems thinking is entrenched in the organisation's functionality. A continuous process of generating, obtaining and conveying knowledge (Moilanen, 2001; Garvin et al., 2008, Klak, 2021) is easily conducted through the whole structure (Malizia, 2012), with the skilled communication (Shieh, 2011) and sharing of information among organisational members (Swart et al., 2005, Rudančić, 2021) enabling the organisation and individuals to reflect on their behaviours and actions, as well as the consequences of their behaviour, to gain insight into the environment where the organisation operates ((Desai, 2011; Tortorella & Fogliatto, 2014), to understand the organisational environment and consequently to understand and interpret the meaning thereof and react to it in a more accurate manner (Jones et al., 2003; Singh, 2011; Alerasoul, 2022).

Leadership and management act as change agents who set out to build on the knowledge and understanding of their own structures and processes in time, playing a key role in leading and managing the learning of the organisation as a whole (Senge, 1990; Maniam, 2013; Dewah, 2016; Kerin, 2022). They create a learning environment with the needed infrastructure and facilities (Moilanen, 2001), making employees available, reimbursing them for participating and recognising their development (Dearborn, 2015), and mitigating threats to achieving a learning organisation (Kerin, 2022).

A high value and emphasis is placed on the sustainability of learning and innovation (Huysman, 2000; Tortorella & Fogliatto, 2014) and continuous development of individuals, organisations and communities influenced by them (Pedler & Burgoyne, 2017), and implementing processes (Moilanen, 2001) that include all members (Senge, 1990; Pedler et al., 1991, Armstrong, 2019), on all levels of the organisation (Pedler et al., 1991). Both employees and leaders display an ongoing, tireless and ceaseless thirst for innovation and progression (Senge, 1994; Ponnuswamy & Manohar, 2016), recognising learning as a daily priority that has to be embedded into everyday roles (Dearborn, 2015). This starts with encouraging and then using learning at individual level ((Malizia, 2012), calling on individuals to expand their capacity to continuously learn together and create the results desired (Huysman, 2000; Tortorella & Fogliatto, 2014). This learning is not only for the sake of doing merely enough continuous learning in itself (Malizia, 2012), but in order for people to obtain personal mastery and to improve mental models (Shieh, 2011). This creates the opportunity to continually expand their capacity to create the results they envisage (Senge, 1990); positive results such as

innovation, efficiency, improved alignment with the environment, and competitive advantage (Langer, 2005; Dewah, 2016; Ponnuswamy & Manohar, 2016). It also enables them to search for processes to solve problems and difficulties, to drive quality (Malizia, 2012; Klak, 2021), and to promote purposeful improvement and intensify the organisation's competitiveness and profitability (Daft, 2021; Huysman, 2000; Tortorella & Fogliatto, 2014).

Amongst other 21st century skills (Lonka, 2018), a high value is placed on autonomous and critical thinking, where new and expansive patterns of thinking are nurtured and diffused through all organisational levels (Senge, 1990; Malizia, 2012). Innovation is supported (Aggestam, 2006; Ponnuswamy & Manohar, 2016) based on whole-system cooperation and collaboration (Watkins & Marsick, 1992; Senge, 1990). In the constant transformation process of a learning organisation, members become and stay learning agile, achieving knowledge, belief and behavioural changes to reflect the new learning and insights (Swart et al., 2005; Moilanen, 2001), which change the organisations' outcomes with regard to growth and innovation (Heraty, 2004; Örtenblad, 2002; Tortorella & Fogliatto, 2014).

All these themes create a foundational environment where employees can take advantage of structured opportunities (Wood & Reynolds, 2013; Mathafena & Grobler, 2020) for professional development (Dearborn, 2015) where evaluation methods and tools are used to evaluate and promote learning processes (Govender, 2009; Moilanen, 1999; Maniam, 2013; Dewah, 2016) and remove barriers and biases that prevent individuals from using their expertise (Gino & Staats, 2015). In such learning organisations collective aspiration is set free (Senge, 1990; Mathafena & Grobler, 2020; Rudančić, 2021), failure is seen as part of learning (Mellat-Parast, 2013; Wang & Noe, 2010, Mathafena & Grobler, 2020) and used to improve the performance of the organisation (Desai, 2011; Tortorella & Fogliatto, 2014), in order to keep transforming itself (Pedler et al., 1991),

The benefits and advantages of organisational learning are well acknowledged in developing competence (Pedler, 2002), improving innovation (Chanal, 2004; Sethumadavan et al., 2020) and achieving and sustaining change (Boyce, 2003). Continuous learning will lead to success over the long term when captured knowledge gives leverage when applied to reality; it will increase innovative knowledge giving a competitive advantage (Liedtka, 1999; Singh, 2011, Amarakoon et al., 2018). Studies conducted on 25 companies implementing the learning organisation found that productivity, profit, market share, and customer satisfaction were raised in these companies (Bennett & O'Brine, 1994). Other studies revealed that the ability of an organisation to develop new knowledge assets that create core competencies governs competitive success (Pemberton & Stonehouse, 2000; Aktharsha & Anisa, 2011). Organisational learning needs to enhance productivity levels to be able to sustain a competitive advantage (Dunphy *et al.*, 1997; Papariodamis, 2005; Ghobadian & O'Regan, 2006) and is able to manage change, increase energy, joy and commitment of human resources in work (Binza, 2005).

Therefore, although there seem to be varying definitions and characteristics of a learning organisation (Hiremani 2011), a learning organisation is defined in this study as how an organisation's activity responds to the challenges and changes it is faced with, and how these motivate organisations to continue learning (Rudančić et al, 2021).

5.2. Generational cohorts in organisations

A generation is a group of people born in a particular consecutive series of years, sharing the same experiences, events and stages of life in the socio-cultural environment during their forming years or historical time frame in which they grew up (Kupperschmidt, 1998; Kupperschmidt, 2000; Kowske et al., 2010; Hoole & Bonnema, 2015). This definition views a generation as a group that is identifiable by years of birth and significant life events at critical stages of development such as going to educational institutions more or less at the same time, start working more or less at the same time, getting involved in marriage and reaching retirement age at the same time. Although researchers differ slightly about the precise years of birth to differentiate between the different generations, most agree that there are five broad generations of employees: Veterans (1925-1944), Baby Boomers (1945-

1964), Generation X (1965-1981), and Generation Y (1982-2000) (Hart, 2006; Wong et al., 2008), Generation Z (2001 – 2012; Dolot, 2018), and Generation Alpha (Dimock, 2019). The way that people in a generation develop is shared by historical and social life experiences, as well as certain happenings and phenomena in their society, and this distinguishes one generational group from another (Schewe & Noble, 2000). A person's feelings towards authority, their values and beliefs about organisations, their work ethic, why and how they work and their goals and aspirations for their work life are impacted by the social context within which a generational group develops (Smola & Sutton, 2002). Furthermore, it is likely that each generation will develop its own distinct preferences or traits that distinguish their feelings toward work and what they desire from work (Jurkiewicz, 2000; Kupperschmidt, 2000).

The generational cohort theory explains the differences and changes across generations (Edmunds & Turner, 2005; D'Amato & Herzfeldt, 2008). According to this theory, the values, attitudes, beliefs and inclinations of individuals are affected by important historical events and social changes. Inclusive into these events are traumatic occurrences such as wars, huge shifts in resource distribution, heroic figures such as Martin Luther King, or huge experiences, e.g. Woodstock that symbolises an ideology (Sessa et al., 2007). Especially consequential are the events during the formative rather than the later years of individuals. Moreover, individuals corresponding to the same cohort or born during a specific period in time often share specific inclinations and cognitive styles. It is assumed that, over time, these effects will persist (Jurkiewicz & Brown, 1998). In short, our lives and attitudes shift as we age, individual events can bring change for whole populations and circumstances that we grow up in shape us throughout our lives (Duffy, 2021). The generational cohort perspective focuses more on changes across generations being fundamentally a function of social events, that incorporates (but is not limited to) biological processes such as age and maturity only (Sessa *et al.*, 2007). Such generational cohorts may differ, because of the history of a certain demographic group or geographic region that could be the core determinant of its generational cohorts (Sessa, *et al.*, 2007; Kingstone, 2021). South Africa is no exception and its recent history, such as the Bush war, the socio-political landscape, as well as heroic and iconic figures such as Nelson Mandela should not be any different in determining generational cohorts. Studies show that there are distinct differences between the cohorts of different regions or countries (Kupperschmidt, 1998; Kupperschmidt, 2000). For this reason, the birth years described by the Center for Generational Kinetics (2016) fit the best into the South African history.

There are currently five generations that make up South African work society (The Center for Generational Kinetics, 2016), with all five generations be represented in the workplace (Dearborn, 2015), namely the Silent Generation, the Baby Boomers, Generation X, Generation Y and Generation Z. Table 1 provides background detail about each generational cohort.

5.2.1. Silent Generation (Traditionalists) - born 1945 and before

Theirs was the period of English rule in South Africa, where colonial governance was in place. This generation potentially experienced the South African Anglo Boer War (1899 – 1902) and both World Wars (1914-18; 1939 – 1945), starting life in a preindustrial state where agriculture and mining were the normative living, including displacement in concentration camps, and then adapting to industrial influence bringing stronger industrialization and urbanization trends and the formation of townships. This generation makes up a very small remaining minority in the workforce, and then only in very specific contextual circumstances.

5.2.2. Baby Boomers - born 1946 to 1964

This falls in the time period after the end of World War II, during a period of economic growth, also characterised by political and ideological unrest in the 1960s, and are a large component of employees in the workforce (Hoole & Bonnema, 2015). Baby Boomers value on-job security and a stable working environment (Hart, 2006; Smola & Sutton, 2002; Loomis, 2000). Another characteristic of the Baby Boomers is that they are most likely to remain loyal and attached to an organisation, are idealistic, optimistic and driven (Hart, 2006; Loomis, 2000). Baby Boomers are also described as diligent on the job (Hui-Chun & Miller, 2003), and as having a high degree of power in the organisation (McCrinkle & Hooper, 2006). Baby Boomers have, among other things, been

stereotyped as being excellent mentors and are more likely to focus on consensus building (Hart, 2006; Kupperschmidt, 2000; Wong *et al.*, 2008). Baby Boomers are currently nearing retirement (Parry & Urwin, 2009).

5.2.3. Generation X - born 1965 to 1976

The 16 June, 1976 uprising that began in Soweto and spread countrywide profoundly changed the socio-political landscape in South Africa. This incident made headlines around the world that have since become known as the Soweto uprising. 16 June is now a public holiday in South Africa, named Youth Day (Anon., 2013). Generation X are the first generation to grow up without parental supervision or with minimal supervision while their parents worked, and therefore Generation X are considered independent (Hoole & Bonnema, 2015). Cynical, pessimistic and individualist are typical characteristics of people in Generation X (Kupperschmidt, 2000; Smola & Sutton, 2002). Generation X's are not likely to display loyalty, as they are portrayed as comfortable with change and diversity. In the workplace, they are more independent and self-sufficient than people from previous generations (Hart, 2006), resulting them being more likely to leave one job and seeking other more challenging options, or a higher salary, or improved benefits (Hays, 1999; Loomis, 2000). Comparing Generation X with Baby Boomers, Generation X require immediate, continuous feedback and are seen as unimpressed with authority and being sceptical (Hart, 2006). The work approach has been characterised as having a strong work-life balance as a value (Howe, *et al.*, 2000), implicating that it is likely that organisational goals are regarded as less important than personal values and goals. The demographic profile of the agricultural sector displays a large tendency towards having the bulk of employees and managers from Generation X, thereby creating a predominant Generation X organisation. The majority of agricultural organisations are also managed by managers from the Generation X era.

5.2.4. Generation Y (Millennials) - born 1977 to 1994

In South Africa, 1995 marks the birth of the first so-called Born-free generation. This was one year after the first democratic South African general elections in 1994. General elections were held in South Africa on 27 April 1994 and the new National Assembly's first act was to elect Nelson Mandela as President, making him the country's first black chief executive. The date 27 April is now a public holiday in South Africa, Freedom Day. Generation Y grew up with technology and in the era of social media and cyber space, and in terms of technological skills, Generation Y have a significant advantage over the Baby Boomers (Deal, *et al.*, 2010; Hoole & Bonnema, 2015). Job security in the workplace is a less important factor and they are comfortable with change (Hart, 2006). Generation Y value skill development and enjoy the challenge of new opportunities. Generation Y, similar to the Baby Boomers, are viewed as driven, more likely to be optimistic and can be demanding of the work environment (Oliver & Huntley, 2007; Smola & Sutton, 2002; Wong *et al.*, 2008). Other characteristics attributed to Generation Y are that they are highly socialised (team players) and enjoy collective action with a strong desire to be included in groups (Hart, 2006; Smola & Sutton, 2002; Martin & Tulgan, 2001; Hoole & Bonnema, 2015). Other characteristics that Generation Y value are having input into decisions and actions, and having responsibility (McCrinkle & Hooper, 2006).

5.2.5. Generation Z (iGeneration/Centennial) - born 1995 and later

This Generation is thought to be realistic, open-minded, motivated, inclusive and connected digitally (Schroth, 2019), being comfortable with technology and operative in the digital world (Chicca & Shellenbarger, 2018; Christensen *et al.*, 2018). They communicate constantly using mobile technology and are more versed in traversing reality in virtual mode, in comparison to other generations; living much of their lives online interacting with family and friends, and making major purchases via smartphones (Tripathi *et al.*, 2022). Yet, due to their constant presence with and use of technology, Generation Z has an increased risk of physical isolation, insecurity, and mental health issues, such as anxiety and depression (Middleton *et al.*, 2022). This generation has also been shown to have underdeveloped social and relationships skills and limited attention spans (Chicca & Shellenbarger, 2018). On the work front they prefer pursuing versatility than job stability (Dolot, 2018). This could have profound implications for organisational functioning, affecting everything from their work

relationships (amongst others), their learning styles, how they adapt to virtual reality training and problem-solving (The Center for Generational Kinetics, 2016).

Although the generational perspective is not all that matters in understanding dynamics and change, they remain powerful, as they are interwoven in the basics of human existence; showing how - as society continues in time - each cohort's presence and eventual absence makes an impact on that society, with the interplay between cohorts also shaping how society changes (Duffy, 2021).

6. Research Methodology

This study employed a quantitative, cross-sectional study design.

6.1. Population and sample

The study population was managers employed in the agricultural sector and related industries. Three of the biggest companies in the agricultural sector were utilised as a convenience sample. These organisations are spread over several provinces of South Africa and are engaged in a diversity of agricultural activities. A purposive, survey sampling strategy was followed to obtain the respondents to specifically include the employees in managerial positions, whether it is junior, middle, senior or top management, as well as directors. Of the initial 200 possible respondents, a total of 136 usable answer sets were received. Most respondents (92) indicated themselves as male and 43 as female. The composition of respondents from the different generations was as follows: Generation Y was 49% (67), Generation X 31% (42) and Baby Boomers 20% (27). Generation Z and the Silent Generation (pre-1974) were not included as part of the study population for this research, as they had either already exited the workplace (the Silent Generation) or were too young (Generation Z) to have been active as managers in the workplace.

6.2. Measuring instrument

The measuring instrument utilised was the Learning Organization Survey (Garvin et al., 2008) consisting of 55 Likert-scored items (some of which are reverse scored) that covered three organisation learning building block dimensions: supportive learning environment, concrete learning processes and practices, and leadership that reinforces learning. The *supportive learning environment* dimension included four components, namely, *psychological safety* (5 items; for example, "In this unit, it is easy to speak up about what is on your mind."), *appreciation of differences* (4 items; for example, "In this unit, people are open to alternative ways of getting work done."), *openness to new ideas* (4 items; for example, "In this unit, people are interested in better ways of doing things."), and *time for reflection* (5 items; for example, "Despite the workload, people in this unit find time to review how the work is going."). The *concrete learning processes and practices* dimension included five components, namely *experimentation* (4 items; for example, "This unit experiments frequently with new product or service offerings."), *information collection* (6 items; for example, "This unit systematically collects information on economic and social trends."), *analysis* (5 items; for example, "This unit engages in productive conflict and debate during discussions."), *education and training* (6 items; for example, "In this unit, training is valued."), and *information transfer* (8 items; for example, "This unit has forums for meeting with and learning from customers and clients."). The *leadership that reinforces learning* dimension consisted of one component (8 items; for example, "My managers provide time, resources and venues to reflect and improve on past performance.").

The first two building block dimensions require a participant to rate their organisation on a seven-point scale (ranging from "highly inaccurate" to "highly accurate") on how accurate the statements are with regard to the organisational unit they are working in. The third building block dimension requires rating on a five-point rating scale (Never to Always) how often a certain behaviour is exemplified by the managers (or manager) higher up in the hierarchical structure to whom they report. The instrument has been established to have acceptable reliability and validity (Garvin *et al.*, 2008; Knox-Davies, 2010).

6.3. Ethical considerations

The research was vetted and approved as a low-risk study by a reputable SA university. Gatekeepers and mediators at the various organisations were used to facilitate awareness and access to the target population, who could then follow an electronic link to complete an online survey should they wish to participate. The survey questionnaires were anonymous and did not request personal information over and above codes utilised to identify the demographic details needed for the study, and all information gathered was treated as confidential. Participation and completion of the survey was completely voluntary, and participants were free to withdraw at any stage without penalty.

6.4. Data collection

The data were collected through an online internet survey platform. Participants received a cover letter with the electronic survey that explained the purpose of the research. Consent and completion of the survey were submitted online, and the responses were then exported into a Microsoft Excel database for data analysis purposes.

6.5. Statistical analysis

The collected data were analysed by the North-West University's Statistical Consultation Service using the Statistical Package for Social Sciences.

Descriptive statistics (means and standard deviations) were calculated to establish central tendencies of the constructs that were measured. Standard deviation expresses how much the individual members of a group differ from the mean value for the group and is known to produce greater variability when the sample group is diverse (Tredoux & Durheim, 2013).

Internal consistency of the scales was determined by computing Cronbach's Alpha values. Considering that reliability can be influenced by the number of items per scale, variability of the test sample (Tredoux & Durheim, 2013) and negatively phrased items (Pallant, 2010), Cronbach alpha values equal to or higher than .6 is considered acceptable (Malhorta, 2010), however values of .70 or higher are preferred (Tredoux & Durrheim, 2013).

To evaluate sampling adequacy and factor structures of the sub-scales, the Kaiser-Meyer-Olkin measure of sampling adequacy and the Bartlett's test of sphericity were used. KMO eigenvalues greater than 1.0 were used as criterion for factor selection, as recommended by Field (2014).

The grouping of the different generations of managers was done and an attempt was made to demonstrate a positive relation between the managers of the different generations towards the variables. This second set of results was analysed according to ANOVA, the Welsch's independent t-test and Cohen's effect size (d-values) to analyse and compare the responses from the generational cohorts. Cohen's (1988) guidelines for the interpretation of d-values were followed, namely: d=0.2 equates to a small effect signifying no practically significant difference, d=0.5 to a medium effect or practically visible difference and d=0.8 to a large effect or practically significant difference (Cohen 1988; Ellis & Steyn, 2003).

7. Results and Findings

7.1. Reliability and validity of findings

Table 2 provides the reliability and validity statistics for each of the component results.

Table 2: Reliability and validity per learning organisation dimension and components

Dimension	Component	Factors	Cronbach's alpha	Kaiser-Meyer-Olkin	Bartlett's test of sphericity	Determinant	Total variance explained
<i>Statistical benchmark</i>			$\alpha \geq 0.6+$	$0.6 - 0.9$	$p \leq .05$	< 1	$> 50\%$
Supportive learning environment	Psychological safety	2	.76 / .60	.70	.00	.28	71.18%
	Appreciation of differences	2	.82 / .82	.62	.00	.29	81.05%
	Openness to new ideas	2	.79 / .68	.65	.00	.33	56.40%
	Time for reflection	1	.83	.82	.00	.18	57.97%
Concrete learning processes and practices	Experimentation	1	.79	.69	.00	.22	62.03%
	Information collection	1	.92	.83	.00	.01	72.18%
	Analysis	2	.86 / .86	.68	.00	.12	77.90%
	Education and training	1	.92	.88	.00	.01	72.70%
	Information transfer	1	.93	.92	.00	.00	67.58%
Leadership that reinforces learning		1	.92	.88	.00	.00	66.23%

Source: Own compilation

The reliability and validity results of each dimension were established by analysing the separate components of each dimension. Initial analysis revealed that a reversed-scored item in the *time for reflection* component was problematic – once it was removed the reliability improved drastically from an initial $\alpha = .58$ to $\alpha = 0.83$. For the *openness to new ideas* component, the Cronbach alpha value for the two components respectively obtained reliabilities of $\alpha = 0.79$ for the first component which reflected positively-stated questions and $\alpha = 0.68$ for the second component which was represented by two negatively-stated questions. The Kaiser-Meyer-Olkin measure of sampling adequacy indicated that sampling was adequate on all scales, and the Bartlett's test of sphericity indicated that there was a sufficiently large correlation between the statements in all the components. No severe multicollinearity were present in any of the scales. Scales explained between 56.4 -81.05% of variance. Overall, the results for each dimension and its underlying components were found to be valid and reliable.

7.2. Whole group results

Statistical analysis was undertaken on the group of managers in agricultural organisations as a whole. Each learning organisation building block dimension was analysed in terms of number of respondents (and the percentage) that gave a particular rating, as well as each item mean and standard deviation. A mean score for each component was also provided.

Interpretation was made on the basis that a mean score of 5.5-7 (1-2.5 for reversed scored items) would indicate generally positive experiences of the specified item or component, while a mean score of 1-2.5 (5.5-7 on reversed score items) would indicate generally negative experiences of the specified item or component. Scores were also benchmarked against baseline data derived from surveys of large groups of senior executives in a variety of industries (Garvin et al., 2008).

7.2.1. Supportive learning environment whole group results

Table 3 further below provides the descriptive statistics of the supportive learning environment's components.

The results show that, in general, between 41.3 – 67.4% of respondents reported positive experiences for *psychological safety*. Most respondents indicated experiencing this in terms of voicing opinions and sharing information, with between 66.0 – 67.4% indicating positive experiences in this regard, but only 41.3% felt that they could make mistakes without it being held against them. Also, only 44.2% indicated that they felt that it was safe to put your cards on the table in the organisation. The mean score of 4.64 for this component fell in the second quartile (below the median) benchmark score

of 5.32 and the high standard deviations of the different items show that respondents differed widely in their agreement to the different items ($SD > 1.00$).

When it comes to *appreciation of differences*, the indications are that between 18.8 – 54.4% experienced this positively. Most notable was that 54.4% felt that their organisations were open to alternative ways of getting things done, but only 18.8% experienced their organisations sorting out differences of opinion in groups (a positive practice), with 35.5% experiencing that their organisations sorted these out privately (off-line). The mean score for this component (4.03) fell in the second quartile (below the median) benchmark score of 4.48 and the high standard deviations of the different items show that respondents differed widely in their agreement to the different items ($SD > 1.00$).

Table 3: Descriptive analysis of whole group findings for supportive learning environment

		Item	1	2	3	4	5	6	7	Mean	SD
Supportive learning environment*	Psychological safety (Mean = 4.64)	In this unit, it is easy to speak up about what is on your mind	7 (5.1)	9 (6.5)	6 (4.3)	5 (3.6)	20 (14.5)	56 (40.6)	35 (25.4)	5.39	1.70
		If you make a mistake in this unit, it is often held against you. (R)	31 (22.5)	26 (18.8)	13 (9.4)	13 (9.4)	30 (21.7)	21 (15.2)	4 (2.9)	3.46	1.922
		People in this unit are usually comfortable talking about problems and disagreements.	7 (5.1)	9 (6.5)	9 (6.5)	9 (6.5)	29 (21.0)	56 (40.6)	19 (13.8)	5.09	1.641
		People in this unit are eager to share information about what does and does not work.	3 (2.2)	9 (6.5)	6 (4.3)	6 (4.3)	21 (15.2)	57 (41.3)	36 (26.1)	5.52	1.534
		Keeping your cards close to your chest is the best way to get ahead in this unit. (R)	29 (21.0)	32 (23.2)	16 (11.6)	21 (15.2)	12 (8.7)	20 (14.5)	8 (5.8)	3.34	1.928
	Appreciation of differences (Mean = 4.03)	Differences in opinion are welcome in this unit	3 (2.2)	9 (6.5)	11 (8)	12 (8.7)	44 (31.9)	39 (28.3)	20 (14.5)	5.04	1.489
		Unless an opinion is consistent with what most people in this unit believe, it will not be valued. (R)	22 (15.9)	27 (19.6)	18 (13)	24 (17.4)	23 (16.7)	19 (13.8)	5 (3.6)	3.55	1.792
		This unit tends to handle differences of opinion privately or off-line, rather than addressing them directly with the group. (R)	8 (5.8)	18 (13)	12 (8.7)	18 (13)	33 (13.9)	34 (24.6)	15 (10.9)	4.54	1.752
		In this unit, people are open to alternative ways of getting work done.	5 (3.6)	9 (6.5)	9 (6.5)	5 (3.6)	35 (25.4)	51 (37)	24 (17.4)	5.21	1.582
	Openness to new ideas (Mean = 4.54)	this unit, people value new ideas.	3 (2.2)	8 (5.8)	10 (7.2)	8 (5.8)	28 (20.3)	48 (34.8)	33 (23.9)	5.36	1.552
		Unless an idea has been around for a long time, no one in this unit wants to hear it. (R)	28 (20.3)	30 (21.7)	23 (16.7)	21 (15.2)	17 (12.3)	14 (10.1)	5 (3.6)	3.22	1.772
		In this unit, people are interested in better ways of doing things	3 (2.2)	6 (4.3)	8 (5.8)	7 (5.1)	23 (16.7)	54 (39.1)	37 (26.8)	5.54	1.485
		In this unit, people often resist untried approaches. (R)	9 (6.5)	20 (14.5)	20 (14.5)	31 (22.5)	29 (21)	24 (17.4)	5 (3.6)	4.04	1.600
	Time for reflection (Mean = 3.91)	People in this unit are overly stressed. (R)	9 (6.5)	32 (23.2)	20 (14.5)	19 (13.8)	24 (17.4)	22 (15.9)	12 (8.7)	3.95	1.810
		Despite the workload, people in this unit find time to review how the work is going.	4 (2.9)	8 (5.8)	8 (5.8)	12 (8.7)	39 (28.3)	49 (35.5)	18 (13)	5.12	1.477
		In this unit, schedule pressure gets in the way of doing a good job. (R)	13 (9.4)	43 (31.2)	15 (10.9)	19 (13.8)	23 (16.7)	21 (15.2)	4 (2.9)	3.54	1.747
In this unit, people are too busy to invest time in improvement. (R)		16 (11.6)	29 (21)	19 (13.8)	23 (16.7)	21 (15.2)	26 (18.8)	4 (2.9)	3.71	1.768	
There is simply no time for reflection in this unit. (R)		22 (15.9)	30 (21.7)	32 (23.2)	20 (14.5)	21 (15.2)	9 (6.5)	4 (2.9)	3.22	1.621	

*Means are out of a maximum of 7. (R) indicates a reverse-scored item

Results indicate that 21.0 – 58.7% of respondents experienced their organisations positively in terms of *openness to new ideas*, while 6.5 – 21.0% did not. Furthermore, 58.7% of respondents agreed that new ideas were valued and 55.9% indicated that people were open to better ways of doing things. However, 21% of respondents indicated that new untried approaches were welcomed (therefore not resisted), with another 21% indicated that such were being resisted in their organisations. The mean score for this component (4.54) fell in the bottom quartile (far below the median) benchmark score of 6.30, and the high standard deviations of the different items show that respondents differed widely in their agreement to the different items ($SD > 1.00$).

In terms of *time for reflection*, results indicate that 29.7 – 48.5% of respondents have a positive experience in their organisational units, with 48, 5% indicating that time for reflection is found in spite of the workloads and only 8.7% disagreeing with this. However, only 29.7% indicated that people in their organisation were not overly stressed, with 24.6% indicating that they experienced people as overly stressed. Moreover, 21.7% indicated that their organisational units were too busy to invest time in improving practices, with 32.6% indicating the opposite. The mean score for this component (3.91) fell in the second quartile, below the median benchmark score of 3.5, and the high standard deviations of the different items show that respondents differed widely in their agreement to the different items ($SD > 1.00$).

For the entire *supportive learning environment* dimension in general, the mean component scores seemed to be highest for psychological safety (4.64) and lowest for time for reflection (3.91), but, regardless, all the scores were indicated as below the median benchmark scores. The overall mean dimension score of 4.28 for having a *supportive learning environment* also fell in the second quartile – below the median benchmark score of 4.97. This is indicative that the respondent group as a whole generally does not experience their agricultural organisational units as being supportive learning environments, specifically in terms of the opportunity to reflect, but also in terms of the experience of there being an openness to new ideas, an appreciation of differences and feeling psychologically safe.

7.2.2. Concrete learning processes and practices whole group results

Table 4 further below provides the descriptive statistics of the concrete learning processes and practices' components of the group of managers in agricultural organisations.

In terms of *experimentation*, 23.9 – 55.1% of respondents indicated having positive experiences in this regard, and between 8.0 – 18.1% indicating negative experiences in this regard. Of the overall group, 55.1% indicated that their organisational units frequently experiment with new products or service offerings, but only 23.9% indicated that their organisation employed prototypes or simulations when trying out new ideas. The overall mean for this component was 4.84, falling in the second quartile, below the median benchmark score of 4.97. The high standard deviations of the different items show that respondents differed widely in their agreement to the different items ($SD > 1.00$).

The *information collection* component results indicated that in general respondents experienced their organisational units positively (59.4 – 76.1%) in their collection and benchmarking of data on competitors, customers, social and economic trends and technological data. The overall mean for this component was 5.51, which, however, still fell in the second quartile, below the median benchmark score of 5.6, and the high standard deviations of the different items show that respondents differed widely in their agreement to the different items ($SD > 1.00$).

In terms of the *analysis* component 39.1-50.8% of respondents indicated generally positive experiences and trends in their organisational units, with 50.8% indicating the frequent identification and discussion of underlying assumptions that might affect key decisions as a positive and 50.7% experiencing engagement in productive conflict and debate during discussions.

Table 4: Descriptive analysis of whole group findings for concrete learning processes and practices

		Item	1	2	3	4	5	6	7	Mean	SD
Concrete learning processes and practices	Experimentation (Mean = 4.84)	This unit experiments frequently with new ways of working.	3 (2.2)	9 (6.5)	13 (9.4)	14 (10.1)	38 (27.5)	42 (30.4)	19 (13.8)	5.01	1.51 1
		This unit experiments frequently with new products or service offerings.	3 (2.2)	8 (5.8)	4 (2.9)	13 (9.4)	34 (24.6)	48 (34.8)	28 (20.3)	5.34	1.46 2
		This unit has a formal process for conducting and evaluating experiments or new ideas.	7 (5.1)	11 (8)	10 (7.2)	21 (15.2)	41 (29.7)	36 (26.1)	12 (8.7)	4.70	1.58 3
		This unit frequently employs prototypes or simulations when trying out new ideas.	7 (5.1)	18 (13)	9 (6.5)	38 (27.5)	33 (23.9)	25 (18.1)	8 (5.8)	4.30	1.56 8
	Information collection (Mean = 5.51)	This unit systematically collects information on competitors	4 (2.9)	6 (4.3)	6 (4.3)	10 (7.3)	28 (20.3)	55 (39.9)	29 (21)	5.41	1.47 8
		This unit systematically collects information on customers	4 (2.9)	2 (1.4)	3 (2.2)	5 (3.6)	19 (13.8)	62 (44.9)	43 (31.2)	5.83	1.31 6
		This unit systematically collects information on economic and social trends	6 (4.3)	3 (2.2)	6 (4.3)	10 (7.2)	29 (21)	51 (37)	33 (23.9)	5.45	1.50 9
		This unit systematically collects information on technological trends	5 (3.6)	3 (2.2)	8 (5.8)	8 (5.8)	32 (23.2)	45 (32.6)	37 (26.8)	5.48	1.50 0
		This unit frequently compares its performance with that of competitors	5 (3.6)	7 (5.1)	2 (1.4)	8 (5.8)	32 (23.2)	48 (34.8)	36 (26.1)	5.49	1.52 5
		This unit frequently compares its performance with that of best-in-class organisations	4 (2.9)	9 (6.5)	5 (3.6)	11 (8)	26 (18.8)	48 (34.8)	35 (25.4)	5.39	1.58 2
	Analysis (Mean = 4.60)	This unit engages in productive conflict and debate during discussions.	7 (5.1)	10 (7.2)	7 (5.2)	13 (9.4)	31 (22.5)	54 (39.1)	16 (11.6)	5.01	1.62 3
		This unit seeks out dissenting views during discussions.	3 (2.2)	15 (10.9)	9 (6.5)	11 (8)	37 (26.8)	47 (34.1)	16 (11.6)	4.95	1.57 7
		This unit never revisits well-established perspectives during discussions. (R)	12 (8.7)	42 (30.4)	24 (17.5)	24 (17.5)	26 (18.8)	7 (5.1)	3 (2.2)	3.31	1.51 8
		This unit frequently identifies and discusses underlying assumptions that might affect key decisions.	1 (0.7)	6 (4.3)	10 (7.2)	18 (13)	33 (23.9)	55 (39.9)	15 (10.9)	5.18	1.31 9
		This unit never pays attention to different views during discussions. (R)	33 (23.9)	35 (25.4)	31 (22.5)	15 (10.9)	18 (13)	3 (2.2)	3 (2.2)	2.79	1.53 5

Table 4 (continued): Descriptive analysis of whole group findings for concrete learning processes and practices

		Item	1	2	3	4	5	6	7	Mean	SD
Concrete learning processes and practices (continued)	Education and training (Mean = 5.24)	Newly hired employees in this unit receive adequate training.	8 (5.8)	11 (8)	6 (4.3)	11 (8)	22 (15.9)	51 (37)	29 (21)	5.15	1.763
		Experienced employees in this unit receive periodic training and training updates	7 (5.1)	5 (3.6)	9 (6.5)	11 (8)	33 (23.9)	44 (31.9)	29 (21)	5.22	1.615
		Experienced employees in this unit receive training when switching to a new position	9 (6.5)	13 (9.4)	10 (7.2)	13 (9.4)	29 (21)	42 (30.4)	22 (15.9)	4.84	1.793
		Experienced employees in this unit receive training when new initiatives are launched.	7 (5.1)	12 (8.7)	8 (5.8)	9 (6.5)	29 (21)	45 (32.6)	28 (20.3)	5.09	1.745
		In this unit, training is valued.	4 (2.9)	4 (2.9)	4 (2.9)	8 (5.8)	15 (10.9)	56 (40.6)	47 (34.1)	5.77	1.446
		In this unit, time is made available for education and training activities.	5 (3.6)	7 (5.1)	7 (5.1)	11 (8)	30 (21.7)	42 (30.4)	36 (26.1)	5.35	1.601
	Information transfer (Mean = 5.20)	This unit has forums for meeting with and learning from experts from other departments, teams, or divisions	11 (8)	5 (3.6)	7 (5.1)	9 (6.5)	24 (17.4)	52 (37.7)	30 (21.7)	5.22	1.758
		This unit has forums for meeting with and learning from experts from outside the organisation	7 (5.1)	6 (4.3)	7 (5.1)	14 (10.1)	33 (23.9)	44 (31.9)	27 (19.6)	5.17	1.612
		This unit has forums for meeting with and learning from customers and clients	4 (2.9)	7 (5.1)	10 (7.2)	14 (10.1)	33 (23.9)	44 (31.9)	26 (18.8)	5.18	1.539
		This unit has forums for meeting with and learning from suppliers	5 (3.6)	5 (3.6)	7 (5.1)	12 (8.7)	36 (26.1)	38 (27.5)	35 (25.4)	5.34	1.545
		This unit regularly shares information with networks of experts within the organisation.	3 (2.2)	7 (5.1)	7 (5.1)	9 (6.5)	34 (24.6)	48 (34.8)	30 (21.7)	5.38	1.471
		This unit regularly shares information with networks of experts outside the organisation.	11 (8)	14 (10.1)	9 (6.5)	24 (17.4)	31 (22.5)	33 (23.9)	16 (11.6)	4.54	1.772
		This unit quickly and accurately communicates new knowledge to key decision-makers.	3 (2.2)	6 (4.3)	5 (3.6)	7 (5.1)	35 (25.4)	56 (40.6)	26 (18.8)	5.44	1.383
		This unit regularly conducts post-audits and after-action reviews.	2 (1.4)	5 (3.6)	9 (6.5)	17 (12.3)	29 (21)	50 (36.2)	26 (18.8)	5.32	1.404

However, 4.4 – 13.1% indicated generally negative experiences regarding analysis. Specifically, 13.1% of respondents indicated that their organisational units did not revisit well-established perspectives during discussion, and 12.3% indicated that they did not experience engagement in productive conflict and debate during discussions. The overall mean for this component was 4.6, which fell in the second quartile, below the median benchmark score of 4.97. The high standard deviations of the different items show that respondents differed widely in their agreement to the different items ($SD > 1.00$).

The *education and training* component results showed that 46.3 – 74.7% of respondents generally have positive experiences and 5.8 – 13.8% experienced their organisational units negatively in this regard. A majority (74.7%) indicated that training is valued in their organisational units. A smaller majority (58%) indicated that new employees get adequate training, while 52.9% indicated that experienced employees get opportunities for training updates. Also, 56.5% indicated that time is made available for education and training activities. The overall mean for this component was 5.24, which fell in the second quartile, below the median benchmark score of 5.60. The high standard deviations of the different items show that respondents differed widely in their agreement to the different items ($SD > 1.00$).

Respondent experiences in terms of the *information transfer* component indicated that 35.5 – 59.4% generally experienced it positively in their organisational units, while 5.0 – 18.1% generally experienced it negatively. More specifically, only 35.5% of respondents indicated that their organisations shared information with networks of experts outside the organisation, and 18.1% indicated that this was not the case. More respondents (59.4%) indicated that their organisational units had forums for meeting with and learning from experts from other departments, teams, or divisions, and that new knowledge was quickly and accurately communicated to key decision-makers. Generally, the perception seemed to be that information transfer seemed to take place more between internal stakeholders than between the organisational units and external stakeholders. The overall mean for this component was 5.20, which, fell in the third quartile, above the median benchmark score of 4.97. The high standard deviations of the different items show that respondents differed widely in their agreement to the different items ($SD > 1.00$).

For the *concrete learning processes and practices* dimension as a whole, the mean score for *information collection* was highest (5.51), although the only component score that was indicated as being above the benchmark median score was that of the *information transfer* component. The overall mean score for the whole dimension was 5.08, which fell in the second quartile, still below the median benchmark score of 5.18. This indicates that as a whole the respondents did not generally experience their organisational units to have the necessary learning processes and practices in place, specifically in terms of the opportunity to experiment, collect and analyse information, and receive adequate education and training. They did, however, indicate that they experienced information transfer to be adequate.

7.2.3. Leadership that reinforces learning whole group results

This dimension was measured on a 5-point scale and interpreted as scores between 4-5 indicating positive experiences and scores between 1-2 indicating negative experiences. Table 5 provides the responses for managers as a whole in agricultural organisations in terms the *leadership that reinforces learning* dimension.

Generally, managers seemed to experience their leaders as reinforcers of learning positively. Positive experiences were indicated by 52.9 – 79.7% of respondents, while 5.7 – 21.0% indicated negative experiences in this regard. Specifically, 79.7% indicated that their managers invited input from others during discussions, and 72.1% indicated that their managers asked probing questions, and 71.7% indicated that their managers listened attentively (although 14.4% indicated that they did not experience this). Also, 21% of respondents indicated that they experienced their managers as criticising points of view that differed from theirs, and 52.9% indicated the opposite experience in this regard.

Table 5: Descriptive analysis of whole group findings for leadership that reinforces learning

	Item	1	2	3	4	5	Mean	SD
Leadership that reinforces learning** (Mean = 3.65)**	My managers invite input from others in discussions.	1 (0.7)	8 (5.8)	19 (13.8)	52 (37.7)	58 (42)	4.14	0.917
	My managers acknowledge their own limitations with respect to knowledge, information, or expertise.	2 (1.4)	13 (9.4)	28 (20.3)	53 (38.4)	42 (30.4)	3.87	1.002
	My managers ask probing questions.	2 (1.4)	6 (4.3)	18 (13)	50 (36.2)	62 (44.9)	4.19	0.925
	My managers listen attentively.	2 (1.4)	18 (13)	19 (13.8)	46 (33.3)	53 (38.4)	3.94	1.086
	My managers encourage multiple points of view.	3 (2.2)	15 (10.9)	27 (19.6)	48 (34.8)	45 (32.6)	3.85	1.066
	My managers establish forums for and provides time and resources for identifying problems and organisational challenges.	5 (3.6)	10 (7.2)	25 (18.1)	56 (40.6)	42 (30.4)	3.87	1.045
	My managers provide time, resources, and venues for reflecting and improving on past performance.	6 (4.3)	7 (5.1)	29 (21)	53 (38.4)	43 (31.2)	3.87	1.052
	My managers criticise views different from their own point of view. (R)	7 (5.1)	22 (15.9)	36 (26.1)	37 (26.8)	36 (26.1)	3.53	1.185

**Means are out of a maximum of 5. (R) indicates a reverse-scored item.

The mean score for this dimension was 3.65, which falls in the second quartile, below the benchmark median score of 3.80.

7.2.4. Summary of whole group results

The results, overall, indicate that, generally, managers in agricultural organisations do not experience their organisational units as learning organisations. This is indicated by most of the component score means, as well as the fact that these fall below the median of the benchmark scores. Even so, some of the components experienced more positively by respondents include the *collection of information* and *collection transfer*, while components experienced less positively include *time for reflection* and *appreciation of differences*, *psychological safety* and *analysis*.

7.3. Generational cohort results

A comparison between the scores of managers from the different generations measured against the different composites from the three building block dimensions of a learning organisation.

As can be seen from **Error! Not a valid bookmark self-reference.**, the standard deviations show very high values for all the constructs and these high values are visible throughout on all dimensions and components, indicating that there are large variations in opinions between participants from the same generational cohorts. It is therefore clear that everyone in a particular group does not necessarily share the same views and as a result one can only perceive a tendency, and findings must therefore be interpreted relative rather than definitive.

7.3.1. Supportive learning environment - generational cohort results

In terms of *psychological safety*, although results fall above the statistical significance level, there is an indication that there may be practically (though not statistical) significant differences between the generational cohorts. The effect size values showed very little difference between the respondents of Generation X and Generation Y, but there was a small-approaching-medium effect size difference found between the experiences of Baby Boomers and Generation X, and a small effect size difference between the Baby Boomers and Generation Y, indicating in both cases that Baby Boomers seem to experience more psychological safety in their organisational units than the other two generational cohorts.

About *appreciation of differences*, mean scores differences between the three cohorts were statistically and practically insignificant, reflecting very small effect sizes between the cohorts.

The *openness to new ideas* component results indicates that there are statistical and practical differences between the different generational cohorts. Baby Boomers showed the highest mean for this component, with the effect size difference between them and the Generation Y cohort being medium-approaching-large effect, while the effect size between the Baby Boomers and Generation X indicated a medium effect. The Baby Boomers seem to experience their organisational units significantly more open to new ideas than do the Generation X and Generation Y cohorts.

For the *time for reflection* component, it was noted that the mean score for all generational cohorts indicated that time for reflection was experienced the least of all the components by all three generational cohorts. Differences between the generations fell above the statistically significant level, but effect sizes were noted between the Baby Boomers and both Generations X and Y (although these were small), with Baby Boomers' experience of time to reflect being indicated as slightly higher than those of the other two generational cohorts.

Table 6: Generational cohort analysis

Dimension	Component	Cohort	M	SD	p ¹	p ²	d	
							Gen Y	Gen X
Supportive learning environment	Psychological safety	Gen Y	64.65	9.88	0.086	0.16		
		Gen X	64.08	11.60			0.05	
		Baby Boomers	69.74	13.08			0.39	0.43
	Appreciation of differences	Gen Y	65.30	9.13	0.886	0.92		
		Gen X	65.65	10.34			0.03	
		Baby Boomers	66.53	15.54			0.08	0.06
	Openness to new ideas	Gen Y	63.27	10.53	0.021*	0.02*		
		Gen X	64.20	11.39			0.08	
		Baby Boomers	70.11	10.40			0.65	0.52
Time for reflection	Gen Y	54.67	14.35	0.415	0.51			
	Gen X	55.51	13.71			0.06		
	Baby Boomers	59.15	17.77			0.25	0.21	
Concrete learning processes and practices	Experimentation	Gen Y	69.08	17.28	0.490	0.53		
		Gen X	67.26	15.54			0.11	
		Baby Boomers	72.35	19.60			0.17	0.26
	Information collection	Gen Y	78.32	16.83	0.915	0.91		
		Gen X	79.82	17.54			0.09	
		Baby Boomers	79.01	21.42			0.03	0.04
	Analysis	Gen Y	59.36	11.02	0.141	0.15		
		Gen X	60.82	12.35			0.12	
		Baby Boomers	64.66	12.05			0.44	0.31
	Education and training	Gen Y	76.23	19.80	0.345	0.38		
		Gen X	70.98	22.31			0.24	
		Baby Boomers	77.07	18.55			0.04	0.27
Information transfer	Gen Y	76.44	17.45	0.433	0.43			
	Gen X	72.19	17.63			0.24		
	Baby Boomers	72.62	21.50			0.18	0.02	
Leadership that reinforces learning	Gen Y	78.99	17.03	0.794	0.82			
	Gen X	77.86	14.51			0.07		
	Baby Boomers	76.48	18.20			0.14	0.08	

* Significance level $p \leq 0.05$; *SD* = Standard Deviation; *M* = Mean; p^1 = ANOVA significance value; p^2 = Welch's t-test significance value; *d* = Cohen's effect size

For the *supportive learning environment* dimension there seem to be specific differences between the generational cohorts in terms of their experiences of *openness to new ideas*, where it is statistically significantly indicated that the Baby Boomers experience their organisational units as more open than do the Generation Y and Z cohorts. There is also a possibility that Baby Boomers experience slightly more *psychological safety* in their organisational units than do Generations X and Y, although these results were reported as slightly above the norms for statistical significance. Results on differences between the different generational cohorts were found to be insignificant with very small effect size for *appreciation of differences*, while differences in terms of *time for reflection* were also statistically insignificant, but small effect sizes were noted between the Baby Boomers and the other two generational cohorts, with Baby Boomers indicating a higher experience of this component than the other two generations.

7.3.2. Concrete learning processes and practices - generational cohort results

For the *experimentation* component, differences between generational cohorts were found to be statistically insignificant and the effect sizes very small, although a bigger (yet still small) effect size was noted between the Baby Boomers and Generation X, which may indicate that on a practical level, Baby Boomers seem to experience more *experimentation* in their organisational units than do the Generation X cohort.

The *information collection* component generally received higher mean scores from all the generational cohorts. However, these differences between the different generational cohorts were found to be statistically and practically insignificant, with very small effect sizes indicated between cohorts.

Differences between the different generational cohorts in terms of the analysis component were indicated as statistically insignificant. However, a small-approaching-medium effect size was found in differences between the Baby Boomers and Generation Y, and a small effect size noted between the Baby Boomers and Generation X, indicating that Baby Boomers experience more *analysis* taking place in their organisational units than do either Generation X or Y.

For the *education and training* component, it was noted that differences between generational cohorts were found to be statistically insignificant, but small effect size differences were found between Generation X and Y, and between the Baby Boomers and Generation X, with Generation X reporting experiencing less *education and training* in their organisational units than Generation Y, and the Baby Boomers seeming to experience more education and training than Generation X.

For the *information transfer* component, the mean scores indicate that, the differences between generational cohorts were shown to be statistically insignificant, although the effect size showed that there were small effect differences between Generation Y and Generation X, with Generation Y experiencing more information transfer taking place in their organisational units.

For the *concrete learning processes and practices* dimension as a whole there were no statistically significant differences found between the generational cohorts on any of the components, although small effect sizes were reported between the Baby Boomers and Generation X for *experimentation*, small-approaching-medium effect sizes between the Baby Boomers and Generation Y, as well as a small effect between the Baby Boomers and Generation X for *analysis*, small effect between Generation X and Y, and between the Baby Boomers and Generation X for *education and training*, and small effect differences between Generation Y and Generation X for their experience of *information transfer* in their organisational units. Very little difference was found between the cohorts in terms of their experience of *information collection* in their organisational units.

7.3.3. Leadership that reinforces learning - generational cohort results

For *leadership reinforcing learning*, differences found between the cohorts were reported to be statistically insignificant, and any effect sizes very small.

7.3.4. Summary of generational cohort results

Overall, Baby Boomers indicated an overall higher average mean score of 70.11 than Generation X, with an average mean score of 64.20 and Generation Y with an average mean score of 63.27.

Component differences between the three generational cohorts were found to be above the statistical significance level ($p \geq 0.05$) in all but the *openness to new ideas* component, and effect sizes were negligible for the *appreciation of differences*, *information collection*, and *leadership that reinforces learning* components. There were, however, notable differences between the cohorts for all the other components, with the Baby Boomers seeming to experience more *psychological safety*, *openness to new ideas*, *time for reflection*, *experimentation*, *analysis*, *education and training* in their organisational units than the other two cohorts. Another result to be noted is that Generation Y seemed to experience slightly more *education and training* and *information transfer* than Generation X.

7.4. Summary of overall results

The primary objective of the study was to determine whether agricultural organisations are learning organisations. The processed data from the assessment tool were compared against the baseline data used as benchmark scores. Overall, the mean scores for the different dimensions were indicated to fall in the second quartile for all the mentioned dimensions, which is well below the median for each. The

results of this research showed, therefore, that agricultural organisational units are not experienced by their managers to be learning organisations.

The secondary objective of the study was to compare the experiences of managers in different generational cohorts with regards to the building block components. Indications are that, although all the cohorts showed high standard deviations on all the components, the Baby Boomers show mostly the highest standard deviation of all the generational cohorts and that the variance in opinions within groups tends to decrease to the younger generations and, although still large, they are roughly considered likely to be more uniform in their opinions on the different components. Generation Y seem to be the most inclined to uniformed thinking, while Generation X tends to indicate greater individuality of opinions similar to the Baby Boomers. There was little difference between the generational cohorts' experience of *appreciation of differences*, and *time for reflection* was indicated as being the least experienced by all the generational cohorts. *Information collection* was given the highest mean scores by all generational cohorts, indicating that they all experienced this component more in their organisational units relative to other components. The results also indicated that the Baby Boomers and Generation Y are closer in their ratings of the experience of the assessed components than the Baby Boomers and Generation X are.

8. Managerial Implications

Although this study was limited to only managers employed by three of the biggest companies in the agricultural sector and the assessment tool was not specifically designed to measure the influence of managers from different generational cohorts to the assessment criteria in the assessment tool, the results did show an inclination, or natural tendency, from managers from the same generational cohorts to behave in a particular way different to the other cohorts. Implications of this may be that managers from the different generational cohorts will have different influences on organisational learning based on the characteristics of the generational cohort that they are born to and therefore may drive learning and performance in the organisation in very different ways. For instance, the Baby Boomers generally seem to experience their current organisational units more positively in terms of learning than the younger generational cohorts. This is important for a few reasons, namely, that the Baby Boomers are still in many instances the senior managers and leaders in organisations, indicating that they may possibly be in a comfort zone that is not inclusive of the needs of all the upcoming managers that are coming after them (such as Generations X, Y and Z), and may not be as aware of the need for change or learning in the organisations as the younger cohorts coming after them, which may potentially lead to stagnation in the organisations that may take too long time to change. Baby Boomers can potentially be valuable mentors to the younger generations, if their awareness of the need for changes to accommodate the younger generations can reach the levels of maturity needed to be able to adapt to such changes.

9. Conclusion

In terms of the research objectives and the outcomes reached, it was established that the managers in agricultural organisations studied during this research do not experience their organisational units as being learning organisations. Furthermore, it was also clear that there may be differences between how managers from different generational cohorts experience their organisational units as learning organisations.

The results of the research may produce information that will advocate additional probing and investigations into the research field as to whether other organisations from other disciplines are learning organisations and what the experiences of managers from different cultures and genders is relating to their organisational units as learning organisations. The survival and continued existence of agricultural organisations may rely on the mere fact of sharing experiences and reflecting on the past to attempt to influence the present and the future. The study may contribute to a better understanding of generational differences within the South African context in that it provides further comparisons and possibilities on how generational differences manifest within different organisational contexts as well as inter-organisational contexts. Research on this topic is extremely limited from a South African perspective, and this research may contribute to filling the existing gap in available research. Also,

due to the data being available, a further contribution would be to draw a comparison between the different genders. This would also be valuable with women becoming more prominent as part of the management teams in organisations in South Africa.

The study also provides new information about how generational disparities in the agricultural sector manifest, and this forms a new addition to the pre-existing literature concerning an organisational learning culture. In addition, comparisons between generations and learning organisations can influence how organisations think about the role of managers from the different future generational cohorts. The influence of managers from the different generational cohorts on the future of organisations can be organised in such a way that these dynamics are to the benefit of the organisation, and to mitigate problems that may arise with the increasing challenges of intergenerational management that comes with – for the first time in history - five generational cohorts being part of the current workforce.

The growing percentage of younger people in South Africa makes it essential to specifically understand what their views and opinions are pertaining to specific trends and issues. Future studies can further contribute to what the important issues are for the different generational cohorts and comparing trends between the cohorts and find ways to apply these findings to maximise the contributions of the different cohorts and to ensure that they can work and learn together to create and build effective learning organisations. Lastly, determining how agricultural learning organisations can work to prepare the workforce to meet the critical 21st century competitiveness and skills requirements would also be valuable as future research.

Building learning organisations in the agricultural sector is critical for maintenance and progression of their role in society in providing food and sustaining society at large. The dimensions and components of the utilised assessment tool can be used as guidelines and a frame of reference on how to build such learning organisations. The findings of this study can also be utilised to proactively understand and forecast gaps and needs that may arise as each generation passes into and out of the workplace, in order to put strategies in place to mitigate weaknesses and leverage on the strengths of each generational cohort.

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Vector Synthetic Measure of Firm Effectiveness. The case of Polish public companies

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Keywords

Firm effectiveness;
Public companies;
Multidimensional
comparative methods;
Financial indicators;
Warsaw Stock
Exchange GPW;

Abstract

The financial performance of companies is usually measured by single financial indicators, such as return on equity, return on assets or return on sales, and Tobin's Q or stock prices. But a company's financial health is the product of many indicators at the same time. Therefore, the aim of the research is to construct a class of synthetic measures that will describe the standing of companies in the multidimensional space of financial indicators and will be useful for comparisons among companies. Methodology of vector taxonomic measures was adapted and vector synthetic measures of firm effectiveness VSME were constructed. For the measure construction financial indicators retrieved from annual reports were used. The research is based on financial and non-financial companies listed on the Warsaw Stock Exchange for the years 2010-2019. But only companies that were listed during the whole period and had full records of the distinguished financial indicators were qualified for the study. Finally, 90 companies were selected (73 non-financial and 17 financial) described by more than 20 financial indicators. The study showed that the proposed VSME vector measures of firm effectiveness reflected well the financial condition (standing) of the companies and allowed them to be effectively distinguished, also over the time.

1. Introduction

According to the theory of the firm, the main purpose of an enterprise is to maximize its wealth. Evaluation of firm value has attracted great attention of researchers because it creates the competitive position of the enterprise. The increasing of firm value causes that the enterprise can obtain many benefits, among others, access to source of fund from financial market, high selling price or value when the firm is bought or merged. Company value is also very important, because it affects stockholders' prosperity and it influences investors' decisions, especially those who use fundamental analysis to determine their decisions (Dietrich & Krafft, 2014).

The share prices which represent market value depend on internal and external factors. Assessing a firm equity value bases on the analysis of published financial statements and other information. This analysis attempts to measure a company's intrinsic value by examining related economic and financial factors including the balance sheet, strategic initiatives, microeconomic and macroeconomic indicators, together with consumer behavior.

A modern approach to assessing the economic and financial condition of enterprises is applying the multidimensional comparative analysis methods. These methods allow to construct aggregated measures on the basis of many different variables, describing the condition of the company. In other words, to examine the state of the enterprise, its major economic and financial factors such as financial liquidity, level of debt, management effectiveness, profitability, etc. are taken into account (Bacidore et al., 1997; Bulgurcu, 2012).

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Our hypothesis states that it is possible to construct a class of vector synthetic measures, applying the methodology proposed by Nermend (2010), that will describe the standing of companies in the multidimensional space of financial indicators and will be useful for comparisons among companies over time. Due to the space of explanatory variables, i.e., financial ratios, such a measure will be called the vector synthetic measure of firm effectiveness VSME. The aim of our research is to construct the VSME measures and verify their applicability using companies listed on Warsaw Stock Exchange (Poland)³.

The research covers companies from the portfolios of the WIG20, WIG30, mWIG40 and sWIG80 indices of the Warsaw Stock Exchange for the period 2010-2019. However, only those companies were selected which were listed throughout the study period and had a full record of distinguished financial indicators. Finally, 90 companies were qualified (73 non-financial and 17 financial, including 9 banks), which were described by more than 20 financial indicators. Investigation was provided using multidimensional measures constructed separately for nonfinancial and financial companies, and for all analyzed companies.

2. Literature Review

There is a great body of studies concerning value of a firm. Let's mention at least some of them to position our research within such a background. Thus, many approaches are based on trade-off, pecking order, agency, and signaling theories (Sudiyatno et al., 2020), in addition to the theory of dividend irrelevancy and the theory of the bird in the hand (Winarto, 2015). Firm value is also often considered in the context of resourced-based view (Pachowski, 2016; Sładkiewicz, 2015) and value created idea, which employ willingness-to-pay concept (Brandenburger & Stuart, 1996). Preference theory, expectation theory or behavioral economic theory are also used (Skrzek-Lubasińska, 2020). However, we are particularly close to the approach of Thavikulwat (2004), who determines the value of a company through the five different components: book value, market value, capitalized value, deductive judgment and adjusted net worth.

Determinants of firm's value are also discussed in studies by Bacidore et al. (1997), Bulgurcu (2012), Endri & Fathony (2020), Myšková & Hájek (2017), Nguyen et al. (2021), Sampurna & Romawati (2020) or Saona & San Martin (2018) among others. In these studies, the determinants of a company's value are sought among:

- internal factors such as ownership concentration, size of firm, capital structure, and dividend policy together with performance factors, including liquidity, profitability, sales indicators, cash flows, assets, and
- external factors such as legal enforcement and regulatory systems together with the development of the financial system,

and investigations were performed using panel regression models for data on public companies listed on national stock exchanges.

The first proposal of using a taxonomic measure to compare public companies in the process of investment portfolio construction was so-called taxonomic measure of investment attractiveness (Tarczyński, 1994; Łuniewska & Tarczyński, 2022). There have been many attempts to construct taxonomic measures which have been used:

- to evaluate the state of enterprises (Fura, 2019; Kompa, 2019; Tarczyński & Tarczyńska-Łuniewska, 2017);
- to select companies for the investment portfolio construction (Tarczyński, 2002; Witkowska, Kompa, Staszak, 2021) and

³ The choice of public companies for our study is due to the fact that only such companies are required to publish their financial reports. The data provider for this study is the Notoria Serwis information agency, an authorized distributor of data on companies listed on the Warsaw Stock Exchange. The data were accessed free of charge for research purposes.

- to find out the relation between financial condition of companies and their performance (Juszczak, 2015; Staszak, 2018; Witkowska & Kuźnik, 2019).

These research examples used the synthetic measure of development proposed by Hellwig (1968), which is a linear ordering method. The majority of variables in the constructed measures based on financial coefficients evaluated from the data in the balance sheets of investigated companies. The idea of Hellwig's indicator bases on the taxonomic distance of analyzed objects from the pattern which is distinguished by the measure constructor. In other words, each object which is described by selected diagnostic variables is compared to the multidimensional pattern which may be either the real or hypothetical object. However, this indicator cannot recognize the objects which are better than a pattern. Therefore, the disadvantage of this measure application in temporal analyses is the necessity to find out a new pattern in every investigated period or to define a global pattern for the entire time span. However, it should be noted that: (1) the measure values obtained from cross-period research, with benchmarks defined for each period separately, are not comparable over time, while only the positions of the objects being ordered are comparable; (2) calculation of measures with the new global benchmark does produce comparable results for all panels, but the results are not comparable to the previous ones.

The novelty of our approach lies in the use of the vector measures methodology proposed by Nermend (2010) for the synthetic measurement of companies' effectiveness. The choice of vector measures was not made by chance. This is because they are free from many disadvantages of other taxonomic measures. Thus, we will (a) construct vector taxonomic measures of firm effectiveness VSME, (b) use them for grouping firms into four homogeneous clusters, and (c) check the stability of firms' positioning to the distinguished clusters in subsequent years (i.e., the persistence of firms' standings). Persistence of firm positioning will be tested using a synthetic measure of distance between the clusters in which the evaluated firms are located.

3. Data and Methods

Companies listed on the Warsaw Stock Exchange in the years 2010-2019 were used to achieve the assumed purpose of the study. Only those companies were taken into account that on 30 December 2019 created index portfolios: WIG20, WIG30, mWIG40, sWIG80 and were simultaneously listed throughout the period covered by the study. An additional condition for qualifying companies for the analysis was the availability of annual reports in the resources of Notoria Serwis. Finally, 90 companies were selected for the study - 73 non-financial companies and 17 financial companies, including 8 banks.

Table 1. List of financial ratios used to assess banking and non-banking companies

Ratios	Banks	Other companies	Type of variable
Current ratio		X	S
Quick ratio		X	S
Debt ratio		X	D
Equity ratio in financing fixed assets	X		S
Return on assets ROA	X	X	S
Return on equity ROE	X	X	S
Return in sales ROS	X	X	S
Operating profit margin OPM	X	X	S
Income assets ratio	X		S
Days inventory outstanding		X	D
Days sales outstanding		X	D
Days payable outstanding		X	D
Asset turnover ratio		X	S
Productivity of fixed assets	X		S
Operating costs / assets	X		D
Operating costs / results on banking activities	X		D
Operating costs / core business income	X		D
Earnings yield P/E	X	X	S
Book-to-market ratio P/BV	X	X	S
Capital adequacy ratio CAR	X		S
Liquidity ratio IMF	X		S
EBITDA/assets		X	S

Note: X indicates a selection of financial ratios for banks and non-banking companies; borders indicate the variables used in the combined study including all companies; S, D denote variables being stimulants or de-stimulants respectively.

Source: own elaboration

The status and changes in the condition of the evaluated enterprises are mapped in various ways, most often by single financial indicators such as return on equity (ROE) and assets (ROA), return on sales (ROS), return on invested capital (ROIC), total shareholder return (TSR), the company's market value or Tobin's Q index.

In the presented study, the vector measure of development was used, which allows a dynamic assessment of the studied objects without the need to modify the pattern every year. It was assumed that the condition of the company in the subsequent years of the analysis was expressed by the value of the vector synthetic measure, constructed for the needs of this study in a multidimensional space of selected financial ratios. Table 1 contains a list of selected ratios along with information whether the ratio has a positive (S – stimulant) or negative (D – de-stimulant) impact on the company's condition. It was also marked which indicators were used to build measures for banks and which for other companies.

Due to the diversity of the set of variables which describe the companies of various types, synthetic measures were determined separately for (a) banks and for other companies, broken down into (b) financial companies other than banks and (c) non-financial companies, as well as for (d) all companies. These synthetic measures for companies classified as (a)-(c) were calculated using different sets of 14 variables whereas the measures for all companies were based on 6 common variables. All measures were determined separately for each year of the 2010-2019 analysis with a common pattern (distinguished for each group of companies separately) from the first year of the study.

It should be noted that the selection of variables for the synthetic measure construction is always arbitrary unless there exists the function which extremum should be obtained⁴. Our study uses indicators that are most often applied in the evaluation of enterprises, trying to take into account representatives of all groups of financial ratios, which also have appropriate statistical properties. At that, all selected indicators have the same impact to the measure value (i.e., they are not weighted). This approach is well established in the referenced literature.

The methodology for Vector Synthetic Measure of Effectiveness (VSME) calculation is based on Vector Measure Construction Method techniques (Nermend, 2017; Kompa & Witkowska, 2021) and is as following. Let the situation of each of N companies ($i = 1, 2, \dots, N$) be described by M diagnostic variables x_{jt}^i (where $i = 1, 2, \dots, N; j = 1, 2, \dots, M$), and observed in t ($t = 1, 2, \dots, T$) consecutive periods. Let the state of enterprises be evaluated in the following periods relative to the reference period $t_0 \in [1, T]$. It is assumed that evaluated objects are represented by vectors $\bar{X}_t^i = (x_{1t}^i, x_{2t}^i, \dots, x_{jt}^i, \dots, x_{Mt}^i)$ in the M -dimensional feature space. There are analyzed projections of these vectors onto some measuring vector $\vec{\omega}_{t_0} = (\omega_{1t_0}, \omega_{2t_0}, \dots, \omega_{Mt_0})$, which is spanned between ends of two vectors: $\vec{X}_{t_0}^p = (x_{1t_0}^p, x_{2t_0}^p, \dots, x_{Mt_0}^p)$ – vector of the pattern, and $\vec{X}_{t_0}^{ap} = (x_{1t_0}^{ap}, x_{2t_0}^{ap}, \dots, x_{Mt_0}^{ap})$ – vector of the anti-pattern, determined for the reference period t_0 and remaining constant throughout the study time span. The pattern is understood as the hypothetically best object according to the adopted criteria, and the anti-pattern – the worst object⁵. In result, the length of each vector \bar{X}_t^i (company vector) along the vector $\vec{\omega}_{t_0}$ (measuring vector) is determined, as a multiple of the length of vector $\vec{\omega}_{t_0}$. Thus, defined here vector synthetic measure of effectiveness $VSME$ has the following form:

$$VSME_{it} = \frac{\sum_j [(z_{jt}^i - z_{jt_0}^{ap}) \omega_{jt_0}]}{\sum_j \omega_{jt_0}} \quad \text{for } i=1, 2, \dots, N, \quad j=1, 2, \dots, M, \quad t=1, 2, \dots, T \quad (1)$$

where i indicates number of the company under investigation (i -th company), N – the total number of companies, j – number of explanatory variable (j -th indicator), M – number of ratios describing the company (dimension of vector space), t – year of the study, t_0 – reference year of the study, T – total number of research periods, ω_{jt_0} – difference of normalized j -th coordinates of pattern and anti-pattern in M -dimensional vector space:

$$\omega_{jt_0} = z_{jt_0}^p - z_{jt_0}^{ap} \quad (2)$$

and $z_{jt_0}^p, z_{jt_0}^{ap}, z_{jt_0}^i$ – normalized j -th components of the vectors of the pattern, the anti-pattern and the i -th company, respectively, for the reference period t_0 , z_{jt}^i – i -th company vector components normalized for the other t research periods. All components are determined from sets of stimulant \mathbb{S} and destimulant \mathbb{D} values as:

$$z_{jt_0}^p = (x_{jt_0}^i - \bar{x}_{jt_0}^i) / S_{jt_0} \quad t \neq t_0 \quad (3a)$$

$$z_{jt}^p = (x_{jt}^i - \bar{x}_{jt_0}^i) / S_{jt_0} \quad t \neq t_0 \quad (3b)$$

$$z_{jt_0}^p = \begin{cases} \max_{i=1,2,\dots,N} \{z_{jt}^i\} & \text{for } x_{jt}^i \in \mathbb{S} \\ \min_{i=1,2,\dots,N} \{z_{jt}^i\} & \text{for } x_{jt}^i \in \mathbb{D} \end{cases}, \quad t = t_0 \quad (3c)$$

⁴ For instance, Witkowska et al. (2021) selected a set of financial ratios which should be used for the synthetic measure construction which is to be used to optimize investment portfolio construction. In this research functions describing rates of return from portfolio and its risk were optimized.

⁵ The more detailed discussion of pattern and anti-pattern selection can be found in the work of Nermend (2010).

$$z_{jt_0}^{ap} = \begin{cases} \max_{i=1,2,\dots,N} \{z_{jt}^i\} & \text{for } x_{jt}^i \in \mathbb{D} \\ \min_{i=1,2,\dots,N} \{z_{jt}^i\} & \text{for } x_{jt}^i \in \mathbb{S} \end{cases}, \quad t = t_0 \quad (3d)$$

where: \bar{x}_{jt_0}, S_{jt_0} – mean value and standard deviation of j -th variable, respectively:

$$\bar{x}_{jt_0} = \frac{1}{N} \sum_{i=1}^N x_{jt_0}^i, \quad S_{jt_0} = \sqrt{\frac{1}{N} \sum_{i=1}^N (x_{jt_0}^i - \bar{x}_{jt_0})^2} \quad (4)$$

Although the value of the measure itself has no economic interpretation⁶, the higher the value, the better the situation of the assessed object. It should be noted that the VSME measure is robust to the occurrence of facilities that are better than the benchmark. Thus, it can be applied to both cross-sectional and cross-temporal data without changing the pattern established in the first sub-period of the study, and the calculated aggregate values are comparable throughout the study interval.

Clustering of all investigated companies into four clusters is made according to the following decision rules:

$$\text{I. the best firms in the sector} \quad \text{when} \quad VSME_{it} \geq \overline{VSME}_t + S_{VSMEt}; \quad (5)$$

$$\text{II. good firms in the sector} \quad \text{when} \quad \overline{VSME}_t + S_{VSMEt} > VSME_{it} \geq \overline{VSME}_t; \quad (6)$$

$$\text{III. catching up firm in the sector} \quad \text{when} \quad \overline{VSME}_t > VSME_{it} \geq \overline{VSME}_t - S_{VSMEt} \quad (7)$$

$$\text{IV. poor firms in the sector} \quad \text{when} \quad \overline{VSME}_t - S_{VSMEt} > VSME_{it} \quad (8)$$

where, for each $t=2010, 2011, \dots, 2019$: $VSME_{it}$ – measure value evaluated for i -th company in t -th year,

\overline{VSME}_t – average value of the measure in t -th year, S_{VSMEt} – standard deviation of the measure in t -th year.

Classification according to rules (5)-(8) results in four ordered clusters of companies, although each company may be recognized to belong to a different cluster during different research years. To decide about the cluster to which the companies belong within the whole research period, the majority voting rule is applied. In other words, the firm belongs to the cluster to which the firm belongs the most often. It is also interesting to find out which companies are classified into the same clusters in the following years, and which change the clusters the most often. To evaluate the level of persistency (“instability of standing over time”), the following measure is applied:

$$W = \sum_{k=0}^3 \frac{y_k}{2^k} \cdot 100\% \quad (9)$$

where y_k – the share of the distance equals k ($k=0, 1, 2, 3$) among classes. Value of the measure W equals 100% if the company does not change the class. The smaller value of W means less stability of the company effectiveness.

4. Empirical Results

As it was already mentioned, companies are evaluated using vector taxonomic measures of effectiveness (1) which were constructed for all 90 companies, and separately for banks, other financial companies and nonfinancial companies on the basis of different sets of variables (see Table 1). Values of the VSME

- evaluated using 14 financial coefficients are presented in Tables 2 and A1, A2 (in the Appendix), and
- evaluated on the basis of 6 variables common to all companies are shown in Tables A3 and A4.

⁶ The value of all taxonomic measures has no economic interpretation, and it is devoid of measurement units, see for instance the best-known synthetic measures such as Human Development Index or Human Poverty Index.

Tables 3 - 7 present clusters containing enterprises qualified according to rules (5)-(8).

It is worth mentioning that the highest values of the measure evaluated for banks were in 2012, and the smallest in 2015. In other words, the highest effectiveness of banks appeared in 2012 whereas the lowest in 2015. The classes to which the banks belong are presented in Table 3. Taking into account, all years of investigation and all banks, they are classified to the second cluster the most often (i.e. 34 among 80 cases), then to the third cluster (24 cases), and to the first and the fourth cluster (11 cases each).

Table 2. Values of synthetic measures VSME evaluated for banks using 14 variables due to (1)

Year	Handlowy	Millennium	BOŚ	PEKAO	ING	MBank	PKO_BP	Santander
	F1	F2	F3	F4	F7	F10	F11	F16
2010	4.1116	0.1543	-2.0470	3.9570	0.9427	0.9723	3.5662	2.3928
2011	1.3846	0.9617	4.0167	-1.3802	0.9700	2.4734	4.2159	2.5999
2012	3.8929	1.3043	-0.3888	4.7526	1.0787	3.7606	4.0894	4.8081
2013	3.3829	1.3719	-1.1383	3.9893	1.7672	2.8387	2.9191	2.2609
2014	3.1020	1.7626	-1.1991	3.6813	1.5436	2.5449	2.1460	3.0836
2015	0.7696	2.8395	-4.7919	2.5592	0.7238	2.9704	0.9960	2.4927
2016	1.0905	2.1587	-3.6809	1.8434	1.1488	3.8704	2.4234	3.3004
2017	1.1137	2.0272	-1.2033	1.2066	2.0583	3.5051	2.8804	3.1790
2018	3.0477	2.0316	0.1254	2.0518	1.7859	3.5304	3.6563	2.5904
2019	1.3579	0.1626	0.1307	1.2541	1.8846	2.3939	3.3072	3.0444

Source: own elaboration

Table 3. Grouping of banks due to (5)-(8)

Banks		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
F1	Handlowy	1	3	1	2	2	3	3	3	2	3
F2	Millennium	4	3	3	3	3	2	2	2	2	3
F3	BOŚ	4	1	4	4	4	4	4	4	4	4
F4	PEKAO	1	4	1	1	2	2	3	3	2	3
F7	ING	3	3	3	3	3	3	3	2	3	3
F10	MBank	3	2	1	2	2	2	1	2	2	2
F11	PKO_BP	2	1	1	2	2	3	2	2	2	2
F16	Santander	2	2	1	2	2	2	2	2	2	2

Source: own elaboration on the basis of Table 2

Analyzing the rest of financial companies, which were evaluated using 14 variables⁷, it may be noticed that the highest values of the measures was in 2010 and the smallest in 2018 and 2019. As one may notice in Table 4, classification to the third cluster was the most often (27 times among 80 cases), then to the second one (28 times), to the fourth cluster (13 times) and to the first cluster (12 times).

Non-financial companies (Table 5) are evaluated using the measure which was constructed on the basis of the same variables as nonbanks. Considering these firms, the highest effectiveness was obtained in 2010, and the lowest in 2019. However, these differences are not so visible as in financial institutions. The second class contains the majority of cases (41.8%), then the third cluster (37.8%), the last one (12.25%), and the first cluster (8.5%).

⁷ Evaluation of the vector taxonomic measure using 14 variables distinguished for financial companies not being banks was provided for 8 companies since we excluded Insurance Company PZU from this analysis because there was lack of data concerning several ratios e.g. days inventory outstanding.

Table 4. Grouping of financial companies not being banks due to (5)-(8)

Banks		Years of testing									
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
F5	ECO	2	2	2	3	2	2	2	3	3	4
F6	GPW	1	1	2	2	2	2	2	2	1	2
F8	Ipopema	3	3	4	4	4	4	4	4	4	4
F9	MWTrade	3	3	3	3	3	3	3	4	4	3
F13	Pragma_F	1	2	2	3	3	3	3	3	3	3
F14	Pragma_I	2	2	3	3	3	3	3	3	4	4
F15	Quercus	1	1	1	1	1	1	1	1	3	2
F17	VOTUM	2	2	2	2	2	2	2	3	2	2

Source: own elaboration on the basis of Table A1

Table 5. Grouping of non-financial companies due to (5)-(8)

Companies		Years of testing									
No	Name	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1	AB	3	4	4	3	3	4	4	4	4	4
2	Agora	2	2	2	2	2	2	2	3	2	3
3	Ambra	3	3	3	3	3	3	2	2	2	2
4	Amica	3	3	3	3	3	3	3	3	3	2
5	Apator	2	2	2	2	2	2	2	2	2	2
6	Asseco BS	1	1	1	1	1	1	1	1	1	1
7	Asseco Poland	2	2	2	2	2	2	2	2	2	2
8	Asseco SEE	2	2	2	2	2	2	2	2	2	2
9	ATM GRUPA	2	2	2	2	2	2	2	2	2	2
10	Bioton	2	2	3	2	2	3	2	3	3	3
11	Boryszew	3	3	3	3	3	4	4	3	4	4
12	BritishAH	3	4	4	4	3	4	3	1	1	1
13	Budimex	4	4	4	4	4	4	4	4	4	4
14	CCC	2	3	3	3	2	2	2	2	3	3
15	CD Projekt	3	1	1	2	3	1	1	1	1	1

Source: own elaboration on the basis of Table A2

Table 5 (cont.) Grouping of non-financial companies due to (5)-(8)

No	Companies	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
16	CI Games	1	1	3	1	1	2	2	1	3	2
17	Ciech	4	3	4	3	3	3	3	3	3	4
18	Cognor Holding	4	3	3	3	2	3	3	2	1	2
19	Comarch	2	3	3	3	2	2	2	3	3	3
20	Comp	2	3	3	2	3	3	3	3	3	3
21	Cyfrowy Polsat	1	3	3	3	2	2	2	2	2	2
22	Develia	2	2	3	3	3	3	3	3	3	3
23	Dom Development	3	3	3	3	3	3	3	3	3	3
24	Echo Investment	3	4	3	3	3	1	3	2	3	3

25	Eko Export	2	1	2	1	2	3	2	2	3	3
26	Elektrobudowa	3	3	3	3	3	3	3	3	4	4
27	Enea	2	2	2	2	2	3	3	3	3	3
28	Eurocash	4	4	4	4	4	4	4	4	4	4
29	Śnieżka	2	3	3	3	3	2	3	3	2	3
30	Forte	2	2	2	2	2	2	2	2	3	3
31	Famur	2	3	3	2	3	3	3	3	2	3
32	Ferro	3	2	3	3	2	2	3	3	3	3
33	Dębica	2	2	2	2	2	2	2	2	2	2
34	GTC	2	3	3	4	4	2	2	2	2	2
35	Grupa Azoty	2	2	2	2	2	2	3	2	3	3
36	Police	3	2	2	3	3	3	3	3	3	3
37	Grupa Kęty	2	2	2	2	2	1	1	1	2	2
38	Grupa Lotos	3	4	3	3	4	3	3	3	2	3
39	Instal Kraków	2	3	2	3	3	3	3	3	2	2
40	Inter Cars	3	3	3	3	3	3	3	3	3	2
41	KGHM	1	1	1	2	2	3	4	3	3	3
42	Lentex	2	2	2	2	2	2	2	2	2	2
43	LPP	2	2	2	2	2	2	3	2	2	3
44	Bogdanka	2	2	2	2	2	3	2	1	2	2
45	Mangata	3	2	2	2	2	2	2	2	1	2
46	Mennica Polska	1	2	2	2	3	3	3	3	2	3
47	Monnari	2	3	2	1	1	2	2	2	3	3
48	Netia	1	2	3	2	2	2	2	3	2	2
49	Neuca	4	4	4	4	4	4	4	4	4	4
50	Oponeo	2	2	2	3	3	3	3	3	3	3
51	Orange Polska	3	3	3	3	3	3	4	3	3	3
52	Orbis	2	2	2	2	2	2	2	2	2	2
53	PGE	2	1	2	2	2	2	2	2	2	3
54	PGS Software	1	1	1	1	1	1	1	1	1	1
55	Polenergia	2	2	2	3	2	2	2	2	2	2
56	Polimex Mostostal	4	4	4	4	4	4	4	4	3	3

Source: own elaboration on the basis of Table A2

Table 5 (cont.) Grouping of non-financial companies due to (5)-(8)

No	Companies	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
57	Polnord	3	3	3	3	4	4	4	4	4	4
58	Orlen	3	3	3	3	4	3	3	2	2	3
59	PGNiG	2	2	3	2	2	2	2	2	2	2
60	PZ Cormay	2	2	2	3	4	3	2	2	3	4
61	Rafako	3	3	4	4	4	3	4	4	3	4
62	Rainbow	3	3	3	3	3	3	3	3	4	3
63	Sanok Rubber	2	2	2	2	2	2	2	2	2	3

64	Stalexport	3	3	2	2	1	2	1	1	2	1
65	Stalprodukt	2	2	2	2	2	2	2	2	2	2
66	Tauron	2	2	3	3	3	3	3	3	3	3
67	TIM	2	2	3	3	3	3	3	3	3	3
68	Trakcja PRKII	3	3	4	3	3	3	3	3	4	4
69	VRG	3	3	3	2	3	2	2	2	2	2
70	Wawel	1	2	2	1	1	1	1	1	1	2
71	Wielton	4	3	3	3	3	3	3	3	3	4
72	Kruszwica	3	3	3	2	1	2	2	2	2	2
73	Kogeneracja	2	2	3	2	2	2	2	2	2	2

Source: own elaboration on the basis of Table A2

Table 6. Classes of financial companies classified on the basis of all companies

Companies		Years of testing									
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
F1	Handlowy	3	3	3	3	3	3	3	3	3	3
F2	Millennium	3	3	3	3	3	3	3	3	3	3
F3	BOŚ	3	3	3	3	3	3	3	3	3	3
F4	PEKAO	3	3	3	3	3	3	3	3	3	3
F5	ECO	1	2	2	2	1	1	2	3	3	4
F6	GPW	1	1	2	2	2	2	2	2	2	2
F7	NG	1	3	3	3	3	3	3	3	3	3
F8	Ipopema	2	3	3	3	3	3	3	3	3	3
F9	MWTrade	3	3	3	3	3	3	3	3	3	3
F10	MBank	3	3	3	3	3	3	3	3	3	3
F11	PKO_BP	3	3	3	3	3	3	3	3	3	3
F12	PZU	2	2	2	2	2	3	3	3	3	3
F13	Pragma_F	3	3	3	3	3	3	3	3	3	3
F14	Pragma_I	2	2	3	3	3	3	3	3	3	4
F15	Quercus	1	1	1	1	1	1	1	1	4	1
F16	Santander	3	3	3	3	3	3	3	3	3	3
F17	VOTUM	1	2	2	1	1	1	2	2	2	2

Source: own elaboration on the basis of Table A4

Taxonomic measures were also evaluated for all companies using 6 factors. If all companies are taken into account, 2010 is the year when these companies were the most effective whereas 2019 characterized the least effectiveness of firms. The same situation is observed for nonfinancial companies, and the similar for all financial companies although the lowest effectiveness is observed in 2018 and 2019. All analyzed companies belong to the third cluster the most often i.e., 61.2% of cases, then to the second one (26.4%), to the first cluster (7.2%) and to the fourth class (5.1%). Dividing companies into two groups, we notice that among:

- nonfinancial firms 6.3% of cases belong to the first cluster, 29% to the second class, 58.8% to the third cluster and 5.9% to the fourth one;
- financial firms 11.2% of cases belong to the first cluster, 15.3% to the second one, 71.8% to the third cluster and 1.8% to the last class.

Table 7. Classes of non-financial companies classified on the basis of all companies

Companies		Years of testing									
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1	AB	3	3	3	3	3	3	3	3	3	3
2	Agora	3	3	3	3	3	3	3	3	3	2
3	Ambra	3	3	3	3	3	3	3	3	3	3
4	Amica	3	3	3	2	3	2	2	2	2	3
5	Apator	1	2	1	1	2	2	2	2	2	1
6	Asseco BS	2	2	2	2	2	2	2	2	2	3
7	Asseco Poland	2	3	3	3	3	3	3	3	3	3
8	Asseco SEE	3	3	3	3	3	2	3	3	3	3
9	ATM GRUPA	3	3	3	3	2	2	2	2	2	2
10	Bioton	3	3	3	3	3	4	3	4	4	3
44	Bogdanka	2	3	2	2	3	4	3	2	3	3
11	Boryszew	3	3	3	3	3	3	3	3	3	3
12	BritishAH	2	3	3	3	3	1	3	1	1	3
13	Budimex	2	3	3	2	2	2	2	2	2	3
14	CCC	2	2	2	2	1	1	2	2	3	2
15	CD Projekt	3	2	2	2	3	1	1	1	1	3
16	CI Games	1	1	1	1	2	1	1	3	4	3
17	Ciech	3	2	4	3	3	2	3	3	3	3
18	Cognor Holding	4	2	3	3	3	4	3	2	2	3
19	Comarch	3	3	3	3	3	3	3	3	3	3
20	Comp	3	3	3	3	3	3	3	3	3	3
21	Cyfrowy Polsat	1	3	2	3	3	3	3	3	3	3
22	Develia	3	3	3	3	3	3	3	3	3	3
33	Dębica	2	2	2	2	2	3	3	2	3	3
23	Dom Development	3	3	3	3	3	3	3	2	2	3
24	Echo Investment	3	3	3	3	3	1	3	2	3	2
25	Eko Export	2	1	2	1	2	3	3	3	4	2
26	Elektrobudowa	2	3	3	3	3	3	3	3	4	3
27	Enea	3	3	3	3	3	4	3	3	3	4
28	Eurocash	2	2	2	2	2	2	3	3	3	4

Source: own elaboration on the basis of Table A3

Table 7 (cont.) Classes of non-financial companies classified on the basis of all companies

No	Companies	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
31	Famur	2	2	2	2	3	3	3	3	2	3
32	Ferro	2	2	3	3	2	3	3	3	2	3
30	Forte	3	3	3	2	2	2	2	3	3	3
35	Grupa Azoty	3	2	2	3	3	3	3	3	3	3
37	Grupa Kęty	3	3	2	2	2	2	2	1	2	4
38	Grupa Lotos	3	3	3	3	4	3	3	2	2	2
34	GTC	3	4	4	4	4	2	2	2	2	3
39	Instal Kraków	2	3	3	3	3	3	3	3	3	4
40	Inter Cars	3	3	3	2	3	3	3	3	3	3

41	KGHM	1	1	2	2	3	4	4	3	3	3
73	Kogeneracja	3	3	3	3	2	3	3	3	3	3
72	Kruszwica	3	3	3	2	2	2	3	3	2	3
42	Lentex	2	3	3	2	2	2	2	2	2	3
43	LPP	2	2	1	1	2	2	2	2	2	3
45	Mangata	3	2	2	2	2	3	3	2	1	3
46	Mennica Polska	1	2	3	2	3	2	2	2	2	3
47	Monnari	1	3	3	2	1	2	2	3	3	1
48	Netia	2	3	3	3	3	3	3	3	3	3
49	Neuca	3	3	3	3	3	3	2	2	2	3
50	Oponeo	2	1	3	3	3	2	2	2	3	2
51	Orange Polska	3	3	3	3	3	3	4	3	3	3
52	Orbis	3	3	3	3	3	3	3	3	3	2
58	Orlen	3	3	3	3	4	3	2	2	2	3
53	PGE	2	2	3	3	2	3	3	2	3	3
59	PGNiG	3	3	3	3	3	3	3	3	2	4
54	PGS Software	1	1	1	1	1	1	1	1	1	3
55	Polenergia	2	2	2	3	3	3	4	4	3	3
36	Police	3	2	3	3	3	3	3	3	3	2
56	Polimex Mostostal	3	4	4	3	3	3	3	3	3	1
57	Polnord	3	3	3	4	3	4	3	3	4	3
60	PZ Cormay	3	2	3	4	4	3	3	3	4	2
61	Rafako	3	3	3	4	3	3	3	4	3	4
62	Rainbow	2	3	3	2	2	2	2	2	3	2
63	Sanok Rubber	2	2	2	2	2	2	2	2	2	2
64	Stalexport	3	3	3	3	3	3	1	2	3	2
65	Stalprodukt	2	3	3	3	3	3	3	3	3	4
29	Śnieżka	2	3	2	2	2	2	2	2	2	3
66	Tauron	3	3	3	3	3	4	3	3	3	3
67	TIM	3	3	3	3	4	3	3	3	3	2
68	Trakcja PRKII	3	3	4	3	3	3	3	3	4	3
69	VRG	3	3	3	3	3	3	3	3	3	1
70	Wawel	2	2	2	2	2	2	2	2	2	2
71	Wielton	3	3	3	2	3	3	2	2	2	3

Source: own elaboration on the basis of Table A3

In the last step of our research, we examined the stability of companies' positions by checking how often and "how far" the companies change their positions. To obtain this aim the majority voting rule and the measure (9) were used. The obtained results are presented in Tables 8, 9 and 10. If all companies are used to evaluate taxonomic measures of effectiveness (i.e., using 6 variables) all banks except ING keeps the same positions in the third cluster. For the VSME evaluated for banks only (i.e., using 14 variables), the investigated companies belong to all clusters in different years. According to these measures, the most stable banks are ING and Santander. PEKAO is the least stable bank, and it belongs to the clusters 1, 2 and 3 the same times (3 years in each cluster). It is also difficult to distinguish the dominated cluster for Millenium, because it was classified to the second and the third cluster for the same number of years.

Due to VSME evaluated for all companies (Table 9), two financial companies (MWTrade and Pragma_F) stay in the third cluster together with Ipopema, which was classified to this cluster in nine years and Pragma_I which was classified to this cluster in seven years. Other three financial companies – ECO, GPW and VOTUM belong to the second cluster most often, and Quertus – to the first one in 9 years. Insurance company PZU belongs to the second and the third clusters in five years. Applying VSME evaluated for the rest of financial firms, eight companies are classified to different clusters. Among them Quertus seemed to be the most stable being classified to the first cluster in nine years.

Table 8. Banks: Stability of VSME measure and dominated clusters due to (9)

Banks		VSME banks (%)	Dominated class	VSME: all companies (%)	Dominated class
F1	Handlowy	60.00	3	100.00	3
F2	Millennium	65.56	3(2.5)	100.00	3
F3	BOŚ	82.50	4	100.00	3
F4	PEKAO	50.83	1, 2, 3	100.00	3
F7	ING	90.00	3	85.00	3
F10	MBank	73.33	2	100.00	3
F11	PKO BP	73.33	2	100.00	3
F16	Santander	90.00	2	100.00	3

Source: own elaboration

Table 9. Financial no-banks companies: Stability of VSME measure and dominated clusters due to (9)

The rest of financial firms		VSME for the rest of financial firms (%)	Dominated class	VSME for all companies (%)	Dominated class
F5	ECO	66.67	2	67.78	2
F6	GPW	76.67	2	82.22	2
F8	Ipopema	82.22	4	90.00	3
F9	MWTrade	82.22	3	100.00	3
F13	Pragma_F	70.56	3	100.00	3
F14	Pragma_I	66.67	3	73.33	3
F15	Quercus	76.67	1	82.50	1
F17	VOTUM	90.00	2	73.33	2
F12	PZU			72.22	2.5

Source: own elaboration

Non-financial companies are classified to all classes regardless the way of evaluation of the measures VSME. Using VSME calculated for all companies, eight companies are stable – six of them belong to the third class, one to the second and one to the first class. Using VSME evaluated for nonfinancial companies, there are 16 firms which were classified to the same class in all 10 years. Two of them belong to the first class, ten to the second class, one to the third class, and three to the fourth class.

Table 10. Non-financial companies: Stability of VSME measure and dominated clusters due to (9)

Non-financial firms		VSME for nonfinancial firms (%)	Dominated class	VSME for all companies (%)	Dominated class
1	AB	76.67	4	100.00	3
2	Agora	82.22	2	100.00	3
3	Ambra	73.33	3	100.00	3
4	Amica	90.00	3	72.22	2.5
5	Apator	100.00	2	76.67	2
6	Asseco BS	100.00	1	100.00	2
7	Asseco Poland	100.00	2	90.00	3
8	Asseco SEE	100.00	2	90.00	3
9	ATM GRUPA	100.00	2	73.33	2
10	Bioton	72.22	2.5	73.33	3
44	Bogdanka	73.33	3	61.11	3
11	Boryszew	48.33	4	90.00	3
12	BritishAH	100.00	4	53.33	3
13	Budimex	72.22	2.5	76.67	2
14	CCC	66.67	1	73.33	2
15	CD Projekt	60.00	1	60.00	1
16	CI Games	76.67	3	55.56	1
17	Ciech	59.17	3	73.33	3
18	Cognor Holding	73.33	3	62.22	3
19	Comarch	82.22	3	100.00	3
20	Comp	68.33	2	100.00	3
21	Cyfrowy Polsat	82.22	3	76.67	3
22	Develia	100.00	3	90.00	3
33	Dębica	68.06	3	73.33	2
23	Dom Develop.	62.22	2	76.67	3
24	Echo Investment	82.22	3	76.67	3
25	Eko Export	72.22	2.5	53.33	3
26	Elektrobudowa	100.00	4	73.33	3
27	Enea	76.67	3	90.00	3
28	Eurocash	82.22	2	73.33	2
31	Famur	76.67	3	72.22	2.5
32	Ferro	76.67	3	72.22	2.5
30	Forte	100.00	2	73.33	3
35	Grupa Azoty	62.22	2	82.22	3
37	Grupa Kęty	76.67	2	73.33	2
38	Grupa Lotos	82.22	3	73.33	3
34	GTC	76.67	2	55.56	2 or 4
39	Instal Kraków	54.44	3	90.00	2
40	Inter Cars	73.33	3	90.00	2

Source: own elaboration

Table 10 (cont.) Non-financial companies: Stability of VSME measure and dominated clusters due to (9)

Non-financial firms		VSME for nonfinancial firms (%)	Dominated class	VSME for all companies (%)	Dominated class
41	KGHM	90.00	3	50.00	3
73	Kogeneracja	54.17	3	90.00	3
72	Kruszwica	100.00	2	72.22	2.5
42	Lentex	82.22	2	82.22	2
43	LPP	100.00	2	82.22	2
45	Mangata	100.00	2	68.33	2
46	Mennica Polska	65.00	3	71.67	2
47	Monnari	62.22	2	60.00	3
48	Netia	73.33	2	90.00	3
49	Neuca	100.00	4	73.33	3
50	Oponeo	76.67	3	65.00	3
51	Orange Polska	90.00	3	90.00	3
52	Orbis	100.00	2	90.00	3
58	Orlen	100.00	2	68.33	3
53	PGE	100.00	1	73.33	3
59	PGNiG	90.00	2	90.00	3
54	PGS Software	82.22	4	100.00	1
55	Polenergia	73.33	4	62.22	3
36	Police	73.33	3	90.00	3
56	Polimex Most.	90.00	2	82.22	3
57	Polnord	51.67	2	73.33	3
60	PZ Cormay	73.33	4	65.56	3
61	Rafako	90.00	3	76.67	3
62	Rainbow	90.00	2	76.67	2
63	Sanok Rubber	60.00	1.5	90.00	2
64	Stalexport	100.00	2	76.67	3
65	Stalprodukt	82.22	3	90.00	3
29	Śnieżka	82.22	3	90.00	2
66	Tauron	76.67	3	90.00	3
67	TIM	73.33	2	90.00	3
68	Trakcja PRKII	76.67	1	76.67	3
69	VRG	82.22	3	100.00	3
70	Wawel	68.33	2	90.00	2
71	Wielton	90.00	2	73.33	3

Source: own elaboration

4. Managerial Implications

Assessing the health of companies is a key issue in the economy, in economic policy, for financial markets and in their economic environment, and company ratings are an integral element of decision-making in all spheres of activity of modern societies. Just as there is no one-size-fits-all method of assessing a company's situation, there is no one-size-fits-all methodology for comparative studies of

economic objects. In our research, we affirm a multidimensional approach to the firms' taxonomy and focus on aggregated synthetic measures.

The vector synthetic measures of firm effectiveness (VSME) presented here transform the M-dimensional space of values of company ratios, into a single numerical value. This allows unambiguous positioning of the N companies under study from the point of view of all the factors considered simultaneously.

The presented methodology can be applied, among other things, in the broadly understood management in the creation of all kinds of rankings of firms and their cross-temporal comparisons for the purposes of cohesion or budgetary policies (e.g., subsidies). At the same time, it opens the field for the development of other applications, depending on the set of explanatory variables used.

5. Conclusion

Taxonomic measures have universal character and according to the set of diagnostic variables selection can be adequate and reliable to the firm's taxonomy in various aspects - in the context of intrinsic enterprise value, enterprise efficiency, effectiveness, productivity, etc. Synthetic measures could be also used when evaluating and comparing different companies over panels and over time.

The purpose of our research was to construct a synthetic measure of firm effectiveness VSME applying Vector Measure Construction Method and verify VSME applicability for selected public companies. The vector synthetic measure we constructed can be applied to any of the listed aspects in the companies' taxonomy. Its essence is determined by the chosen set of descriptive variables and the way they are treated. We used rigorously selected balance sheet financial indicators, which authorizes us to treat it as a synthetic vector measure of firm effectiveness VSME in the multidimensional space of financial indicators.

The study showed that the proposed VSME vector measures of firm effectiveness reflected well the financial condition (standing) of the companies and allowed to distinguish them effectively, also over the time. It was shown in presented Tables that the larger set of diagnostic variables allows to construct a measure that better differentiate enterprises. It is also visible that factors used for the measure construction should be unique for the particular type of companies, such as banks. Therefore, it is recommended to use different variables for sets of companies representing different sectors of the economy.

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Appendix A

Table A1. VSME values for financial (no banks) companies evaluated using 14 variables and due to (1)

Year	ECO	GPW	Ipopema	MWTrade	Pragma_F	Pragma_I	Quercus	VOTUM
	F5	F6	F8	F9	F13	F14	F15	F17
2010	3.7854	4.7238	1.8153	1.2049	4.0347	2.0372	5.5820	3.1281
2011	2.7148	4.4488	0.7502	0.6267	2.4603	2.2353	4.9840	2.4598
2012	2.4498	3.3483	-0.6745	0.3423	2.2837	1.8643	4.6481	2.4749
2013	1.6195	3.6692	-0.1982	0.7157	0.9313	1.6274	6.3032	2.5920
2014	2.7061	3.2764	-0.2056	0.5121	1.7995	0.2920	5.5767	3.2257
2015	3.4702	3.4649	-0.3036	0.3800	0.2125	0.2760	5.3666	3.8069
2016	2.5685	3.0945	-0.9231	-0.0450	1.8216	-0.0961	5.2054	2.2741
2017	0.5732	3.2799	-0.5259	-0.3067	1.3733	-0.0175	5.3308	1.5493
2018	1.3174	4.0717	-1.5960	-0.6030	0.8209	-1.4975	1.1638	2.6584
2019	-2.6286	3.2176	-0.4124	0.0404	1.1105	-4.1754	3.6304	2.2928

Source: Own elaboration

Table A2. VSME values for financial companies developed using 6 variables due to (1)

Firm N°	Year of testing									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1	-0.2740	-0.4378	-0.5055	-0.2855	-0.1947	-0.3746	-0.4564	-0.5404	-0.5324	-0.6073
2	1.3641	1.1795	1.1263	1.3520	1.1338	1.3065	0.9655	0.7450	1.1114	0.9333
3	0.5847	0.3808	0.3609	0.4693	0.6989	0.7013	0.9952	1.1467	2.0390	1.4021
4	-0.0727	0.1867	0.5309	0.8455	0.6945	0.4006	0.7408	0.6316	0.8842	1.0079
5	1.5214	1.3119	2.2076	1.9572	1.0960	1.2512	1.6686	1.4102	1.6284	1.4406
6	2.3733	2.4723	2.5063	2.3300	2.5071	2.6233	2.8228	2.3492	2.7622	2.5060
7	2.0130	1.7528	1.8072	1.8031	1.8780	1.7427	1.8968	1.7820	1.8964	1.9063
8	1.9726	2.0882	2.1831	2.0976	2.0084	2.1324	1.8535	1.9706	1.9655	1.9253
9	1.6637	1.5679	1.4177	1.4596	1.8615	1.9533	1.8402	1.9145	2.0626	1.5355
10	1.7346	0.9766	0.9058	1.2210	1.4712	0.1757	1.0805	0.4432	0.6439	0.0642
11	0.4798	0.4369	-0.0859	-0.2515	-0.1110	-0.4106	-0.3822	-0.1779	-0.4430	-1.7364
12	0.0689	-0.4309	-1.0356	-0.6247	0.3322	-1.3127	0.1533	4.4112	4.3623	2.8762
13	-0.8919	-1.0104	-1.0695	-0.7218	-0.9089	-0.8477	-0.6488	-0.5662	-0.9208	-0.9994
14	1.4388	0.5484	0.4091	0.5726	1.1009	1.7714	1.1360	1.4119	0.2848	-0.0426
15	0.7219	2.6348	2.4828	1.9267	0.8335	6.6520	4.2558	3.5270	2.8658	2.9545
16	7.0372	5.3101	0.8308	3.6452	3.2466	2.0238	1.8969	2.7600	-0.1379	1.5627
17	-1.0264	0.2710	-1.2532	-0.1860	-0.2198	0.2956	-0.1316	0.1098	-0.2922	-0.3783
18	-1.1041	0.0441	-0.1216	0.9398	1.0145	-0.1606	0.7786	1.9610	2.7586	1.3490
19	1.0882	0.9049	0.6976	0.4038	1.0406	1.0961	1.0959	0.8471	0.9297	0.8339
20	1.1861	0.6463	0.6442	1.3095	0.6469	0.6991	0.5942	0.6012	0.6130	0.5143

21	5.1694	0.1007	0.5789	0.8047	1.0914	1.2456	1.3889	1.4355	1.4266	1.2086
22	1.7705	1.1904	0.9246	0.4118	0.3888	0.3971	0.2736	0.4766	0.5039	0.2325
23	0.0111	-0.0485	0.3203	0.1485	0.3141	0.3084	0.3170	0.4642	0.4209	0.4980
24	-0.1265	-0.3428	-0.2482	0.1203	-0.0328	5.6256	0.4073	1.1873	0.1293	-0.2007
25	2.1099	3.2792	1.3446	3.5325	1.7046	0.8669	1.0059	1.0355	0.3966	0.9144
26	0.8919	0.4721	0.0480	-0.1440	-0.2623	0.1585	0.2685	0.3745	-1.1302	-5.6942
27	1.7033	1.6594	1.6912	1.6128	1.2049	0.1896	0.4467	0.4425	0.3014	0.1624
28	-0.5408	-0.9695	-0.6868	-0.9807	-0.9071	-0.4597	-0.7845	-1.1908	-0.9413	-0.9711
29	1.0369	0.3970	0.6247	0.5300	0.5825	1.2686	0.8479	0.7702	1.0891	0.1076
30	1.1519	0.9745	1.3612	1.5971	1.5766	1.4565	1.2811	1.1730	0.4878	0.5206
31	1.8257	0.6190	0.8334	2.0343	0.7205	0.7915	0.4838	0.6250	1.2178	0.6349
32	0.5405	1.2933	0.6145	0.8988	1.1429	1.0562	0.8556	0.2324	0.6648	0.9253
33	0.9517	1.0292	1.2190	1.3833	1.4020	1.4208	1.3255	1.4563	1.2206	1.2168
34	1.2305	-0.1267	0.1419	-1.0695	-1.0587	1.2459	1.8097	1.8168	1.6773	1.5675
35	1.2651	1.8121	1.5032	0.9493	1.1927	1.1290	0.8365	1.0041	0.2839	0.1292
36	0.0672	1.7835	1.2372	0.5487	0.6565	0.8024	0.5387	0.7414	0.1991	0.2269
37	1.0202	1.2778	1.4701	1.5953	1.7528	2.2687	2.4828	2.4629	1.5324	1.7150
38	-0.1382	-0.3716	0.0758	-0.2235	-0.7803	-0.1903	0.5890	0.8418	1.0331	0.8661
39	1.1505	0.9260	1.2203	0.8865	0.2344	0.8816	0.9360	0.9388	1.6599	1.3236

Source: Own elaboration

Table A2 (cont.). VSME values for financial companies developed using 6 variables due to (1)

Nº	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
40	0.0424	0.2641	0.2703	0.6112	0.3676	-0.0061	-0.0475	-0.2417	-0.0303	1.2168
41	2.8215	4.2339	2.4905	2.0734	1.6557	0.0358	-0.5344	0.5604	0.8314	0.6285
42	1.7945	0.9481	1.2344	1.6321	1.2800	1.8703	2.1101	1.6954	1.7736	1.5804
43	1.0985	1.5444	2.1801	2.1290	1.5087	0.9692	0.8517	1.2235	1.2051	-0.0142
44	1.5310	1.4836	1.5943	1.4894	1.0862	0.1234	1.0661	2.2730	1.3987	1.8382
45	0.6215	1.1134	1.3421	1.4856	1.6121	1.2760	1.0307	1.6686	2.4469	1.9004
46	2.4112	1.2957	0.9557	1.4562	0.8884	0.9237	0.6679	0.5805	1.4164	0.2055
47	2.0824	0.2380	1.1821	2.5962	3.0731	1.9279	1.2034	1.0693	0.8631	0.5399
48	2.6645	1.6854	0.8469	0.9945	1.3748	1.1299	1.0513	0.7441	1.6866	1.1755
49	-1.4309	-1.3964	-1.3149	-1.2580	-1.5313	-1.5182	-1.3780	-1.5160	-1.4181	-1.2973
50	1.5790	1.9314	0.9737	0.8890	0.6463	0.8004	0.8553	0.5442	0.5115	0.3394
51	0.1438	0.1986	0.3363	0.4157	0.6395	0.5315	-0.3309	0.1067	0.1868	0.1708
52	1.3573	1.9993	2.0643	2.0307	2.0491	1.4321	1.3173	1.5193	1.4762	1.9328
53	1.8186	2.2128	1.9379	2.0958	2.0106	1.5176	1.1892	1.3861	0.9677	0.8736
54	3.7148	5.7496	5.4963	5.8892	5.4183	6.4721	5.9990	5.5504	5.1368	4.2274
55	1.9598	1.9185	0.9752	0.5172	1.1227	1.5513	1.4197	1.5430	1.7199	1.9878
56	-0.3912	-1.5091	-4.3660	-2.4204	-2.6677	-1.5370	-1.8018	-0.4206	-0.1693	0.6486
57	0.7361	0.8350	0.8261	-0.2068	-0.3666	-0.6837	-0.8089	-0.4433	-0.7167	-1.6946
58	0.4097	0.1801	0.5481	0.3077	-0.5890	0.2610	0.8258	1.0178	0.9637	0.7882
59	1.4596	1.1146	0.7532	0.9715	1.0296	0.9932	1.1865	1.4328	1.6051	1.1393

60	1.8726	1.5362	1.4885	0.6227	-0.4626	0.4283	0.9988	1.1886	-0.1658	-1.1766
61	0.0728	-0.0882	-0.4242	-1.4717	-0.7928	-0.3060	-0.9075	-0.6531	-0.3142	-3.4259
62	0.6480	0.2880	0.0063	0.0899	0.6974	0.6805	0.3556	0.5337	-0.4494	-0.0802
63	1.5674	1.4752	1.6757	2.1461	2.1765	2.2026	2.1350	1.7273	1.0155	0.7028
64	0.0606	0.4012	1.2896	1.6490	2.3044	1.9654	4.7225	3.5037	2.0277	2.3074
65	2.0922	1.9467	1.3575	1.1793	1.3389	1.7997	1.3776	1.3224	1.1780	1.2412
66	1.5638	1.1286	0.9014	0.9172	0.7136	0.0713	0.2932	0.3341	-0.1641	-0.1616
67	1.2184	1.2514	0.7494	0.5375	-0.1332	0.3401	0.3832	0.0647	0.1844	0.2851
68	0.3210	-0.1188	-0.5104	0.0548	0.4364	0.8467	0.5596	0.3785	-0.8341	-1.8831
69	0.0134	0.0183	0.2926	1.1011	0.8922	1.4695	1.5011	1.5945	1.2365	1.3063
70	2.3295	2.0094	2.1079	2.2993	2.3577	2.2886	2.2934	2.4874	2.2933	2.0433
71	-0.3498	-0.1440	0.1006	0.5245	0.5430	0.0352	0.5576	0.2106	-0.1952	-0.3305
72	0.6326	0.4208	0.2864	1.5432	2.3544	2.1607	1.2038	1.1712	1.4324	1.6767
73	1.1553	1.1834	0.9211	1.1495	1.2780	1.4052	1.7472	1.6706	1.6316	1.3705

Source: Own elaboration

Table A3. VSME values for non-financial companies developed using 6 variables due to (1)

Firm No	Year of testing									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1	0.5316	0.2593	0.1704	0.2518	0.3277	0.3248	0.2310	0.1184	0.0617	0.0336
2	0.2515	-0.0365	-0.2594	-0.1500	-0.3041	-0.0477	-0.4526	-0.5775	-0.0286	0.0070
3	0.3393	0.2729	0.2837	0.4049	0.1791	0.0968	0.3655	0.5338	0.5198	0.4327
4	0.0582	0.2227	0.2844	0.8537	0.4343	0.5826	0.7830	0.7414	0.5592	0.4673
5	1.7024	1.3309	2.2226	1.6970	1.3449	1.2298	1.4232	0.9142	1.0626	0.8137
6	0.7132	0.6666	0.6296	0.6593	0.7022	0.8455	1.1269	1.2152	1.3618	1.4484
7	0.5913	0.3552	0.3328	0.2616	0.2834	0.2454	0.3616	0.1205	0.1215	0.2070
8	0.2261	0.1362	0.5063	0.3935	0.1226	0.5558	-0.1034	0.1566	0.2437	0.4623
9	0.2733	0.0882	0.1557	0.4577	0.5912	0.6582	0.6490	0.6202	0.5904	0.8165
10	0.4859	0.0419	-0.3290	-0.1970	0.2499	-2.5241	-0.0040	-1.5289	-0.6328	-1.5836
11	0.3209	0.2341	0.0049	-0.1637	0.1735	0.0191	0.1447	0.5106	0.1671	-2.3616
12	1.1344	0.2752	0.0702	0.1372	0.3199	3.0091	0.4487	2.7399	3.9368	1.9019
13	0.6630	0.3952	0.4807	1.0342	0.9061	1.1422	1.1505	1.1748	0.7558	0.7645
14	1.5742	1.0671	0.9763	1.5660	1.6758	2.6151	1.2460	0.9386	0.3616	0.0972
15	-0.4721	1.5018	1.4256	1.5786	0.3678	6.1636	2.9473	2.3659	1.9528	3.1644
16	10.2257	7.3760	4.6008	3.5371	1.1837	2.7834	3.0723	0.3934	-1.6008	0.1662
17	-0.0656	0.8523	-1.3301	0.2595	0.2938	0.9579	0.3592	0.4843	0.4850	0.0622
18	-2.2152	0.7441	-0.3134	0.0640	-0.2944	-1.3928	-0.1627	0.7546	1.1968	0.1780
19	0.5335	0.3222	0.2054	0.3111	0.2975	0.3226	0.2773	0.2318	0.2337	0.3013
20	0.3706	-0.0347	-0.2071	0.4450	-0.0440	0.1806	-0.0823	-0.1490	0.0656	0.0600
21	5.5783	0.3020	0.6505	0.5248	0.1134	0.1980	0.2784	0.2838	0.2020	0.2678
22	0.0546	-0.0981	0.0809	0.0321	-0.1069	-0.0305	0.0692	0.4492	0.5110	0.7238
23	0.1264	0.2438	0.2685	0.1824	0.1779	0.3098	0.4618	0.6666	0.6612	0.9361
24	0.3516	0.1185	0.3274	0.4974	0.3629	6.9241	0.5124	1.3675	0.0051	0.0249

25	0.9447	2.0746	0.8374	2.9349	1.1994	0.2739	0.2359	-0.0892	-1.0812	0.0530
26	0.7387	0.4274	0.1784	0.1061	0.1673	0.3443	0.3589	0.3244	-0.7284	-4.0240
27	0.1523	0.1170	0.1972	0.3608	0.2325	-0.6424	0.1096	0.4988	0.0789	-0.0069
28	1.1117	1.0385	1.3183	1.3357	0.7958	1.0391	0.3894	0.0547	0.2324	0.2839
29	0.8760	0.0170	0.6385	0.7005	0.7356	1.5984	1.0664	1.3017	1.5066	1.0489
30	0.4025	0.2231	0.3929	0.8485	1.0184	0.9434	1.0168	0.4524	-0.1150	-0.0876
31	0.6992	0.9667	0.9506	1.3526	0.2504	0.1372	0.4157	0.2681	0.5632	0.4377
32	0.6818	0.7362	-0.2276	0.2250	0.6314	0.4553	0.1468	0.0203	0.6868	1.1015
33	0.6991	0.7234	0.7035	0.8796	0.5929	0.5177	0.3967	0.7411	0.4956	0.3804
34	0.3946	-2.2519	-1.2050	-1.4678	-2.6508	0.7649	1.5583	1.3051	0.6806	0.5310
35	0.2105	0.6452	0.6292	0.0346	0.2432	0.2905	0.1714	0.3393	0.0385	-0.0770
36	0.1149	1.5682	0.4532	0.1692	0.2685	0.5020	0.2010	0.4019	-0.0056	0.0611
37	0.4265	0.4578	0.6077	0.6005	0.9032	1.3202	1.5828	2.0467	1.4302	1.5002
38	0.1377	0.0092	0.2587	-0.1295	-0.7522	-0.1239	0.4990	0.6019	0.5662	0.3209
39	0.5585	0.5188	0.3775	0.2029	0.0223	-0.0431	0.0579	0.2973	0.5109	0.3517

Source: Own elaboration

Table A3 (continued). VSME values for non-financial companies using 6 variables due to (1)

Nº	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
40	0.2608	0.5217	0.3273	0.7795	0.5237	0.4433	0.4560	0.4056	0.5173	0.3804
41	1.9909	3.2660	1.2064	0.6884	0.4759	-0.7409	-1.0121	0.2506	0.3604	0.1714
42	0.5833	-0.0539	0.1605	0.5706	0.8597	1.1137	1.5598	0.7194	0.6415	0.7474
43	1.0498	1.3058	1.9079	2.1861	1.3785	1.1129	0.8503	1.3203	1.1537	0.6460
44	0.6224	0.5149	0.6866	0.6328	0.4288	-0.6445	0.2637	1.1428	-0.0326	0.4033
45	0.1448	0.9179	0.7502	0.6986	1.0711	0.3465	0.1040	0.8626	1.9005	0.6613
46	1.6988	0.5595	0.1133	0.8224	0.4234	0.6466	0.6996	0.7305	0.6744	-0.0224
47	5.7750	-0.4524	0.4308	1.1936	1.9862	1.0100	0.8632	0.1753	0.1309	-0.0933
48	0.6921	0.4447	-0.3123	-0.0370	0.4959	-0.0606	-0.0759	-0.4658	0.4448	-0.0231
49	0.0534	0.0718	0.1135	0.3553	0.2509	0.4793	1.0105	0.6258	1.2792	1.1420
50	0.8238	1.8011	-0.0205	0.1121	0.1502	0.6140	0.5907	0.6133	0.4979	0.3093
51	0.2261	0.4751	0.2698	0.3279	0.0708	-0.0341	-0.6738	-0.1318	-0.1243	-0.0714
52	-0.0479	0.3401	0.2665	0.1236	0.2089	0.3055	0.3987	0.3452	0.3705	1.7039
53	0.6396	0.9331	0.0993	0.4087	1.0616	0.2165	0.1460	0.5698	-0.1637	-0.3202
54	2.6433	5.1423	4.8892	5.1294	5.3107	7.1114	6.4358	6.1729	4.8136	3.9122
55	1.2649	1.1358	1.5785	-0.2022	-0.2208	-0.1289	-0.6629	-0.6617	-0.4551	0.1984
56	0.0966	-0.5883	-2.9467	-0.4362	-0.5667	0.1076	-0.0003	0.3544	0.0368	0.4384
57	0.1028	0.3012	0.2657	-0.6344	-0.0276	-0.6648	-0.3677	-0.0675	-0.5784	-1.4226
58	0.3515	0.1159	0.2534	-0.0056	-0.9011	0.1684	0.9322	0.9176	0.7018	0.3939
59	0.4227	0.3885	0.3651	0.2788	0.3076	0.2396	0.4685	0.3703	0.6187	0.2154
60	0.4774	0.6628	0.4172	-0.6390	-1.2661	-0.5636	-0.3156	-0.1867	-1.4419	-2.3878
61	0.4306	0.3600	0.0027	-0.9161	0.1144	0.1641	-0.5366	-0.5838	-0.0955	-2.3016
62	0.6381	0.3831	0.2541	0.6945	1.2892	1.1102	0.8227	1.1551	0.2468	0.6579
63	0.6372	0.6743	0.6820	1.3078	1.4397	1.4038	1.4573	1.0784	0.5742	0.2061

64	0.2336	-0.3844	-0.1240	0.1882	0.3192	0.3108	4.8936	1.5274	0.0628	0.2993
65	0.6322	0.4488	0.1594	-0.0704	0.0872	0.3507	0.3646	0.3502	0.3465	0.1787
66	0.0155	0.2468	0.2858	0.3080	0.1428	-1.0281	-0.1976	0.0611	-0.5691	-0.2735
67	0.2001	0.2337	-0.0904	-0.2843	-0.6446	0.0545	0.1089	-0.0901	0.1145	0.4097
68	0.3638	0.3159	-0.6357	0.0143	0.2147	0.1705	0.1382	0.0902	-0.6769	-1.5941
69	-0.1143	-0.1612	-0.0082	0.4575	0.1557	0.0914	0.1580	0.1793	0.1637	0.1697
70	1.3511	1.2859	1.3430	1.5044	1.3462	1.2746	1.0306	1.2054	0.7318	0.4807
71	-0.2586	0.1064	0.3286	0.7259	0.5139	0.2283	0.7817	0.7814	0.6642	0.1381
72	0.2917	0.1598	-0.0581	0.6789	0.8233	0.6472	0.4780	0.3458	0.6337	0.6837
73	0.5091	0.4501	0.3027	0.2591	0.6817	0.4888	0.5254	0.3315	0.1828	-0.0395

Source: Own elaboration

Table A4. VSME values for financial companies using 6 variables due to (1)

Bank N°	Year of testing									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
F1	0.1561	0.0956	0.1706	0.1671	0.1642	0.0537	0.0656	0.0662	0.0597	-0.0085
F2	0.0196	-0.0108	0.0005	0.0545	0.0811	0.0257	-0.0085	0.0346	0.0270	-0.0429
F3	-0.0373	0.1485	-0.1087	-0.0837	-0.1053	-0.1735	-0.1752	-0.1425	-0.1191	-0.1123
F4	0.1951	-0.0889	0.1580	0.1589	0.1427	0.0880	0.0700	0.0612	0.0484	0.0293
F5	2.3794	1.3862	1.4460	0.7232	1.8019	2.4420	1.6307	0.2351	0.2222	-0.6810
F6	1.7904	1.9086	0.9840	1.2448	0.7394	1.1226	1.2765	0.9346	1.5539	1.1980
F7	1.8500	0.0796	0.0423	0.0772	0.0822	0.0482	0.1032	0.1319	0.0837	0.0800
F8	0.8233	0.4148	0.3203	0.2182	0.0796	-0.0014	-0.0715	-0.0880	-0.2444	-0.0797
F9	0.4728	0.1720	0.1547	0.3101	0.2204	0.1483	0.0570	-0.0081	-0.1066	-0.2058
F10	0.0539	0.0450	0.0608	0.1116	0.1015	0.0156	0.0081	0.0244	0.0164	-0.0227
F11	0.2159	0.1565	0.1419	0.1329	0.0834	0.0087	0.0129	0.0494	0.0383	0.0257
F12	0.9821	0.7281	0.7339	1.3477	0.7262	0.4976	0.3485	0.5080	0.5297	0.4866
F13	-0.0470	0.4599	0.3830	0.0930	0.2133	-0.2003	0.2019	0.1160	0.0058	0.2327
F14	0.6856	0.8170	0.3767	0.5085	-0.0270	0.2112	-0.1383	-0.0779	-0.2837	-1.4126
F15	4.6659	3.5610	3.1516	5.5115	3.8223	4.0687	3.8096	4.2182	-0.9909	1.8859
F16	0.1942	0.2056	0.2006	0.2186	0.1639	0.0758	0.1076	0.1168	0.0790	0.0401
F17	2.1240	1.3864	1.5248	1.7014	2.2817	2.8108	1.4779	0.7139	1.4680	1.0860

Source: Own elaboration

A Systematic Literature Review of the Impact of Cognitive Bias on Managerial Skills: Current Trends and Future Directives

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Keywords

Managerial skills;
cognitive biases;
managers; entrepreneurs;
systematic literature
review

Abstract

With the growing pressures of being a manager in recent times, it is a fair assumption that some errors can occur during their task execution. Sometimes, these errors happen due to incompetence, and other times they happen due cognitive biases. This manuscript presents a systematic literature review that sought to answer the following question: How does cognitive bias affect managers' skills? The reviewers obtained records from three research databases. After the implementation of inclusion and exclusion criteria, 20 records were analysed to answer the research question. This resulted in tabulated summaries that informed the creation of a conceptual framework. Overconfidence was the cognitive bias found to be most prominent among managers and entrepreneurs. This had mostly negative and some positive impact on managers' conceptual skills, leading to various consequences. Additionally, it was found that there is a need for more research in medium and small businesses in the agricultural, wholesale and property industries in Africa and Australia, among other trends and suggestions for future research. The authors of this review present some possible solutions for the consideration of managers and training providers. To conclude, the reviewers suggest combining similar cognitive biases such as overconfidence and the Dunning-Kruger effect to test the proposed moderating and mediating effects depicted in the conceptual framework. In addition to this, the reviewers also propose that future researchers and managers should consider the ability to deal with cognitive biases as an additional, technical managerial skill that requires consideration and mastering.

1. Introduction

The business world is placing many demands on managers. Not only are they expected to be kept abreast of the constant changes in their environments, be innovative in harsh economic settings and satisfy ever-more informed consumers; they have to do it all at the least cost to their bottom-line (Doroodi & Mohammadi, 2015:301; Faysse & Onsamrarn, 2018:23; Keh *et al.*, 2002:138; Tjosvold & Poon, 1998). Under these circumstances, managers are often required to make quick decisions without the consideration of the factors involved, leading to errors in decision-making (Pitz & Sachs, 1984:139; Tversky & Kahneman, 1974:1130) and possible long-lasting consequences in the business and managers themselves. This paper is an attempt at providing a comprehensive overview of these consequences by implementing principles of a systematic literature review (Grant & Booth, 2009:94-95). The authors of this paper are particularly interested in the impact of cognitive biases on managers, and the possible outcomes of this impact.

Managerial skills can broadly be described as the aptitude to decide business directions and strategies and lead their subordinates. The three most common approaches to managerial skills were identified

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by Katz (1974:90-102). These three categories are still relevant in recent times (Rudansky-Kloppers, 2019:208). The first is human skills, which are the capacity to interact with and motivate others. Technical skills are the ability to apply gained knowledge to trade and job-specific tasks. Lastly, conceptual skills refer to the ability to understand concepts, devise ideas and implement strategies (Rudansky-Kloppers, 2019:208-209).

Research on the constructs under discussion clearly is not novel; authors have been investigating them since as early as 1974. There is still much to learn, there are around 50 established cognitive biases that could be investigated within the managerial context and measuring all of them in one empirical study pertaining managers' skills is a daunting task. As such, the authors believe that a systematic literature review may be a good place to start elucidating the issue at hand. The current study sought to understand the relevant cognitive biases investigated in management spheres, what their impact is on managerial skills and how they can be solved, mitigated and/or eradicated. The authors mapped the current literature to highlight best practices, lessons learned from the sources and discuss future directives.

Much research on cognitive bias is in the psychological fields. From those studies, we deduce that there is a need for research in this construct in the field of business management as it potentially has an influence on managers' task execution. Cognitive bias has implication on thinking, which clearly impacts managers on many aspects of their managerial functioning (Shepherd *et al.*, 2015:11).

In the past, researchers have reported both positive and negative effects of cognitive biases on managers and particularly entrepreneurs (Busenitz & Barney, 1997). However, the comprehensive scope of the consequences of these findings on managers, entrepreneurs, and the business itself is not readily available. The current study addresses this issue by summarising the available articles and presenting the empirical findings in a condensed and approachable conceptual framework. As a common feature of systematic literature review, the current paper also makes numerous suggestions for future empirical and review studies that can be implemented by academics. The paper presents the numerous managerial implications in an accessible manner for the benefit of managers who have an interest in the topic and training programme developers who may seek to proactively address the issues or solve them retroactively.

To the best of the reviewers' knowledge, no systematic literature review has attempted to map the empirical studies investigating the consequences of the impact of cognitive biases on managerial skills. Notably, Thomas (2018) investigated cognitive biases over 20 years. This review, however, was limited to entrepreneurs, and the latest included source was from more than five years ago (2016). One database was consulted (EBSCOhost). and no PRISMA statement was given, which goes against the best practices proposed for systematic literature reviews in social sciences (Pahlevan Sharif *et al.*, 2019:32). Additionally, that reviewer was not interested in the impact of the cognitive biases on skills, choosing to focus on determinants such as the environment, personal factors and the business wherein the entrepreneurs function (Thomas, 2018:131).

Therefore, the current review sought to answer the following research question: How does cognitive bias impact managers' skills?

2. Methodology

The current review can be described as an overview with elements of a systematic literature review (Grant & Booth, 2009:94-95). The reviewers implemented a systematic search for the inclusion of research articles, summarised and tabulated characteristics of relevant studies and presents a conceptual framework that answers the research question. The rest of this section discusses the search strategy implemented, and also explains the section criteria, quality assessment and data extraction.

2.1 Search strategy

In this systematic review, the authors developed a search strategy to identify relevant literature sources. This search strategy was tailored to three comprehensive databases: Web of Science, Scopus and Science Direct, and the following search terms were used:

- Cognitive bias
- Managers
- Skills

All searches covered sources published until and including 2022; only English research journal articles, review papers and conference proceedings were included. The 2022 sources were included to provide as many records as possible and report the most up-to-date findings and trends. Table 1 shows the search strings used in the three selected databases.

Table 1: Search strings

Database	Search string
Web of Science	“Cognitive bias*” (Title) AND Manage* (Abstract) AND Skill* (Abstract) OR “Cognitive bias*” (Author Keywords) AND Manage* (Author Keywords)
Scopus	(TITLE-ABS-KEY ("Cognitive bias*") AND TITLE-ABS-KEY (skill*) AND TITLE-ABS-KEY (manage*))
ScienceDirect	Title, abstract, keywords: “Cognitive bias” AND Manager

Source: Own compilation

2.2 Selection criteria

Page *et al.'s* (2020) guidelines were implemented in the development of the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) statement presented below. The study was focused on mapping available literature on cognitive bias in the field of social sciences, business and economics and business management. The authors narrowed the subject to management sciences fields. The research span was from inception to 2022 (ending the inclusion of sources in the month June of 2022), which allowed the authors to include some of the most recent records of the current year of the conduction of the research. No geographical limitations have been put on the records included as the initial results provided the scope of the inquiry to already be sufficiently narrow. A total of 138 research articles were identified at this stage of the review process. Five records were then removed for not being presented in English, leaving a total 133 potential sources extracted from the three databases (59 from Web of Science; 46 from Scopus and 33 from Science Direct).

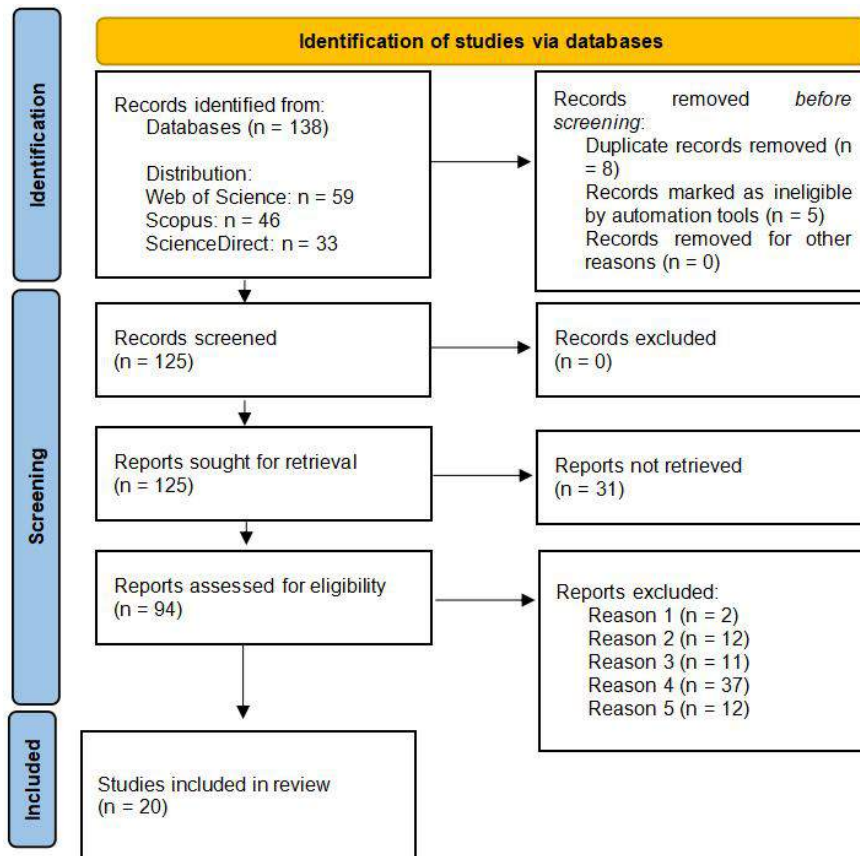


Figure 1: PRISMA statement

Table 2: Disclosure of additional reasons for record exclusions

Reason	Description
1	The publication language is not entirely English.
2	The publication is not an empirical study.
3	The publication is either not a research article or not a conference proceeding.
4	The participants of the published study are either not managers or not entrepreneurs.
5	The publication does not mention any cognitive bias in the abstract.

Source: Own compilation

*Automated removal of non-English papers.

2.3 Quality assessment

This study was only based on original research articles, review papers and conference papers. For the purpose of elevating the quality of this review, duplications were identified electronically using the reference management tool (Mendeley). All identified duplications were checked manually and confirmed to be duplicates before their removal from the records to be reviewed. This resulted in the removal of five articles. The remaining articles' abstracts were read thoroughly to assess their relevance for inclusion into the review process and initial analysis. In-depth analysis of the included articles was carried out at a later stage. The next manual exclusion criterion was to limit the sources to papers published entirely in the English language. There were only two articles that had an English title and an abstract written in French, which were excluded for additional further analysis. Furthermore, for the purpose of this study, the articles also had to mention a skill in the abstract of the article, the bias mentioned in the abstract must be a cognitive bias and there must be managerial implication of the article in the abstract. After additional filtration by the authors, 85 more publications were excluded from the study. Consequently, the authors selected 20 articles after screening and assessing each article's abstract on the inclusion and exclusion criteria. For inclusion in this systematic review, the authors had to have been able to access the full paper. One article was excluded due to lack of access to the full publication. Figure 1 (PRISMA statement) below illustrates inclusion and exclusion at every stage of the systematic literature review.

2.4 Data extraction

In the data extraction phase of this study, 20 articles were selected, and the characteristics extracted were:

- Original research papers that were peer-reviewed and published as articles, conferences papers or review studies. Conceptual papers, reports and pure case studies were excluded.
- The outputs must have been published in English in the discipline of managerial sciences.

From this literature, the authors were interested in the following aspects of the papers:

- The abstract of the research article;
- The literature review of the publication;
- The methodology followed in the study;
- The results and/or findings of the study; and
- The recommendations and/or conclusion made by the authors.

3. Results, discussion and recommendations for future research

3.1 Records distribution over the years

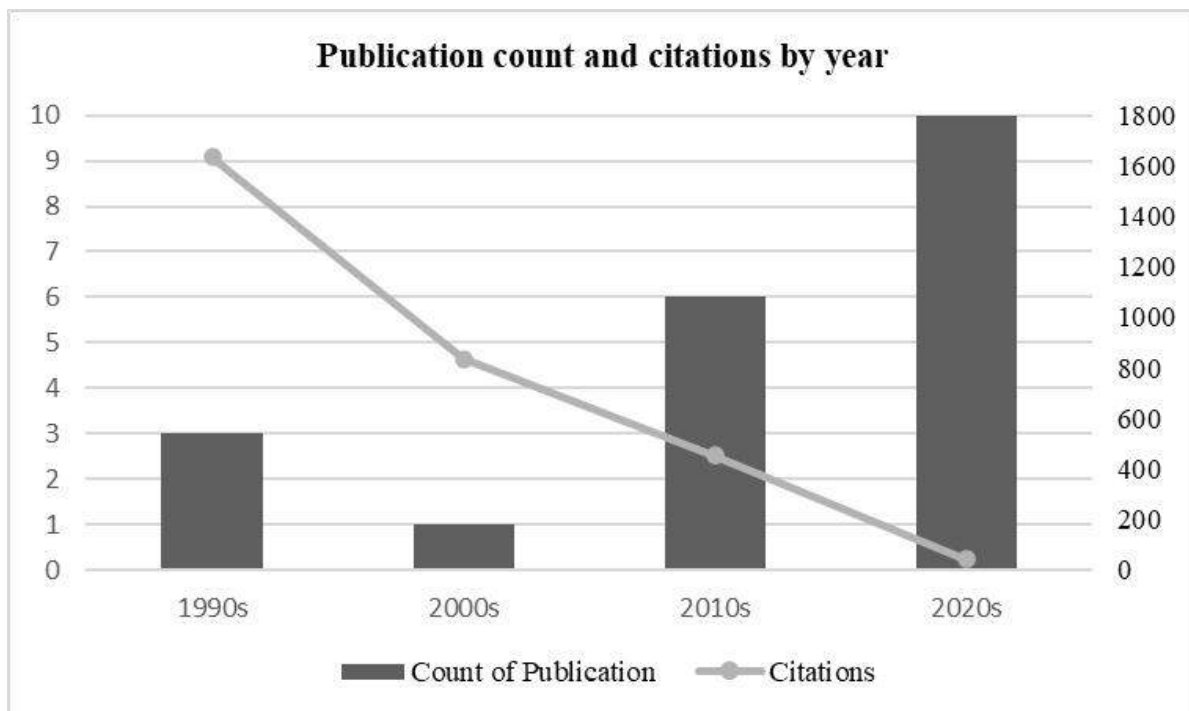


Figure 2: Publications and citations
Source: Own compilation

Figure 2 depicts the number of publications and citations from the 1990s to 2020s. The articles included in this study had a total of 2 966 citations, leading to an average of 148 citations per paper, possibly indicating significant interest and relevance of the topics under discussion. Even though there was no timeframe placed on eligibility of the papers, the earliest paper was from 1997; this paper also had the most citations. With only one eligible paper in the 2000s, there was a decline in the interest of cognitive bias in researchers studying managers. There is a significant growth in interest seen in the topics under discussion from the 2010s up to the 2020s. This growth trend is likely to continue as management science researchers become more aware of various psychology constructs due to the increase of academics and access to such information becomes more accessible. There are also many cognitive biases and combinations of biases and skills that are yet to be empirically explored.

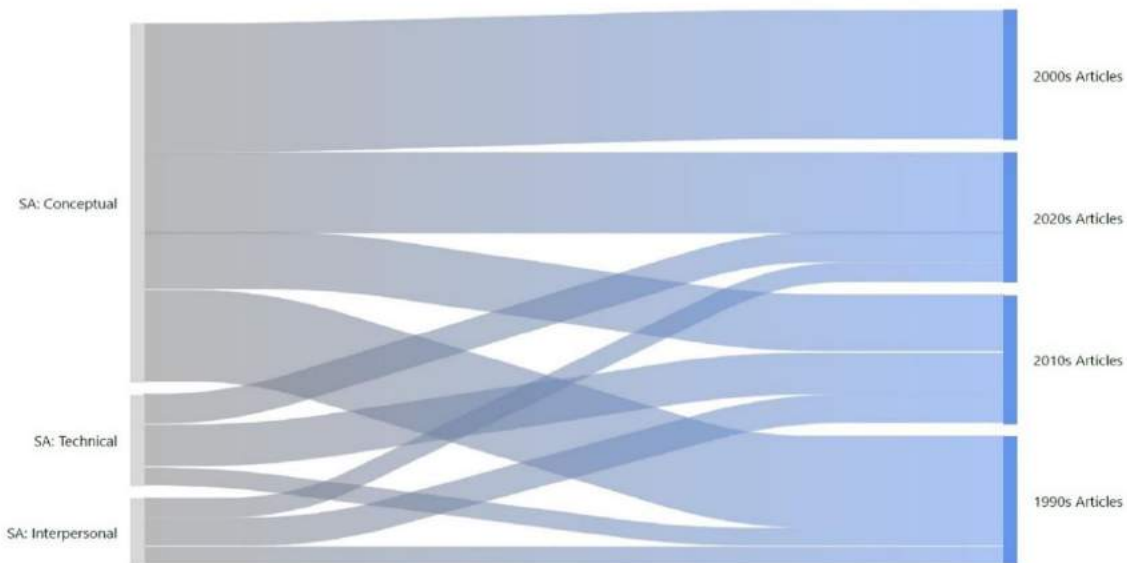


Figure 3: Skills approach focus by decades
Source: Own compilation

Figure 3 is a Sankey diagram exported from ATLAS.ti 22. The figure represents the skills approach (categorised skills) focus of the publications included in this review. It is apparent from this diagram and proceeding tables and the conceptual framework presented near the end of this paper that researchers focused mostly on the conceptual skills of managers over the years. The interest in empirically exploring managers' interpersonal and technical skills seems to have subsided recently.

The 1990s featured collaborative decision-making, communication; investment decisions; problem-solving; risk perception; strategic decision-making and thinking skills, showing relative distribution between conceptual, interpersonal, and technical skills. The publications at this time only showed that managers' skills were being affected by the overconfidence and representativeness cognitive biases.

The single 2000s article focused on conceptual skills, namely strategic decision-making, thinking skills and decision comprehensiveness. The skills were impacted by the overconfidence cognitive bias. As the quantity of articles rose drastically in the 2010s, so did the variety in skills under investigation. These publications included commercial awareness, emotional intelligence, hiring decisions, networking, opportunity discovery and forecasting, representing all three skill approaches relatively equally. The authors in this period added anchoring bias, attribution bias, a combination of framing bias with fixed-pie, Einstellung effect, loss aversion, optimism, and self-serving bias to the discussion of the types of cognitive biases impacting managers' skills.

In the 2020s, authors included ability to learn, persistence, delegation and problem-solving to the skills to the scope of managerial aptitudes impacted by cognitive biases. Evident in Figure 2, these were mostly conceptual skills. In the current decade, anchoring bias was combined with availability bias and hubris was combined with brakes bias. Future researchers could also combine some cognitive biases together in their investigation of their impact on managers' skills. The publications added base-rate fallacy, confirmation bias, groupthink, halo effect and hindsight bias.

3.2 Regional distribution

Table 3: Regional summary

Author(s) (publication)	Regions			
	Single country	Multi-country	Not stated	Continent
Busenitz & Barney (1997)	USA			North America
Tjosvold & Poon (1998)	Canada			North America
Hodgkinson <i>et al.</i> (1999)	UK			Europe
Forbes (2005)	USA			North America
Hilary & Hsu (2011)			X	N/A
Magazinius <i>et al.</i> (2012)			X	N/A
Azouzi & Jarboui (2013)	Tunisia			Africa
Caputo (2016)		USA; Italy; Other European		North America; Europe
Shu <i>et al.</i> (2018)	China			Asia
Almeida <i>et al.</i> (2019)	Australia			Australia
Zhang, Zhao <i>et al.</i> (2020)	China			Asia
Fink & Pinchovski (2020)		Brazil; Canada; India; UK; USA. Canada; Germany; Israel; Italy; UK; USA; Other.		South America; North America; Asia; Europe
Zorn <i>et al.</i> (2020)	USA			North America
Thelisson & Meier (2021)	France			Europe
Hristov <i>et al.</i> (2022)	Italy			Europe
Gu & Lin (2021)	China			Asia
Barlach & Plonski (2021)	Brazil			South America
Zhang, Bij <i>et al.</i> (2020)	USA			North America
Breiter <i>et al.</i> (2022)			X	N/A
De Sordi <i>et al.</i> (2022)			X	N/A

Source: Own compilation

Even though some authors did not specify the regional particulars of their respondents, the regional summary above shows a relatively wide distribution of interest in the research topics under discussion. However, there is a clear concentration of interest in the Americas, particularly North America, representing 35% of the studies included in this systematic literature review. The table also indicates that there is a need for more research to be conducted on African and Australian continent.

3.3 Businesses investigated

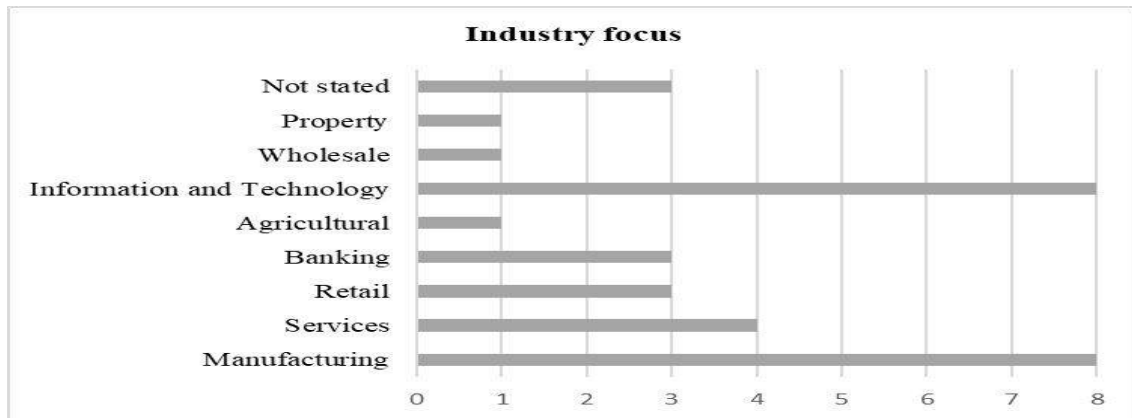


Figure 4: Industries
Source: Own compilation

Figure 4 above indicates the spread of interest in research topics according to the industry of the various businesses that the managers operated in. This indicates that managerial skills are impacted by cognitive bias from various contexts. Additionally, the impact of cognitive bias on managerial skills is not industry specific. From the figure, one can also conclude that a large emphasis is placed on the information and technology as well as manufacturing industries. Some authors did not indicate the industry where the study was conducted; yet there is a clear need for research in the property, wholesale, and agricultural industries. Future researchers can either choose to add to the body of knowledge by focusing on the industries that have been extensively covered or they may try to uncover trends and behaviour in the industries that are least explored.

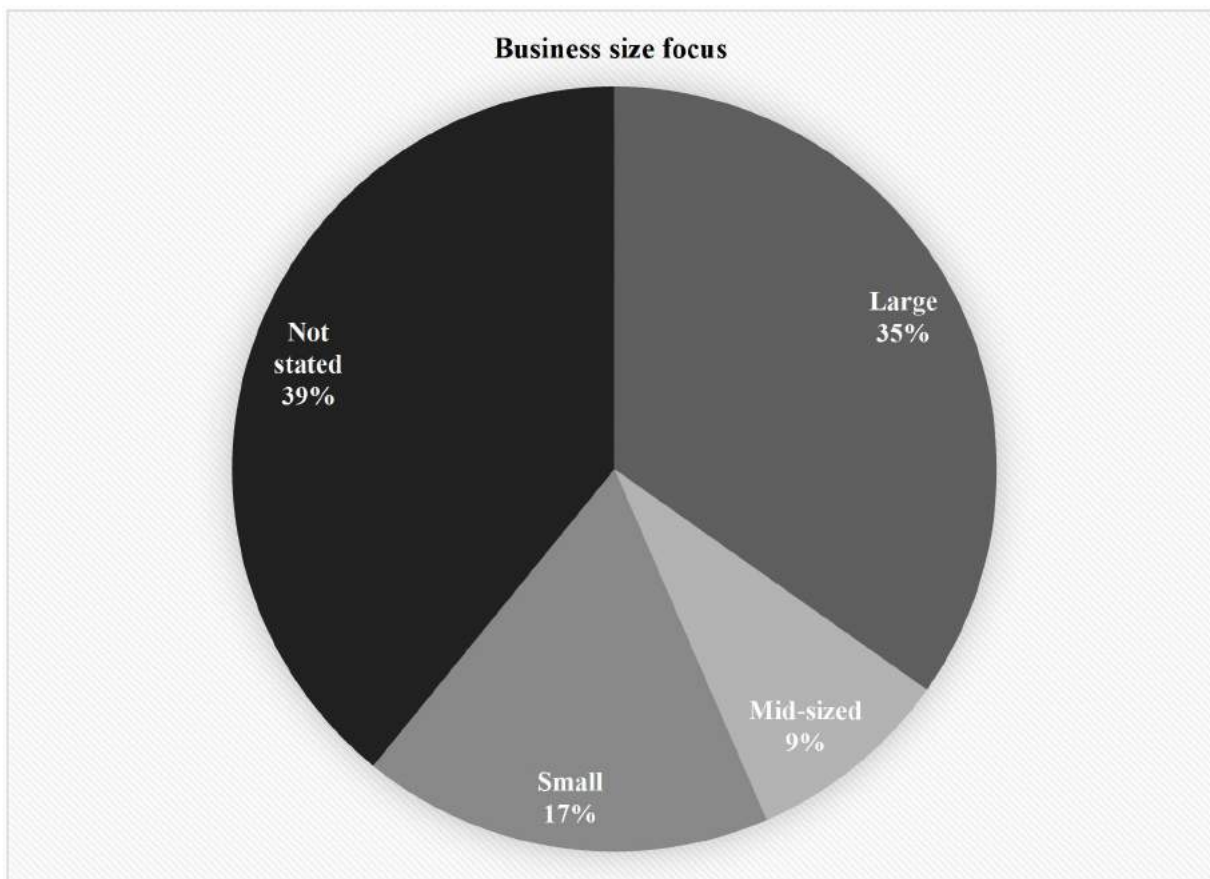


Figure 5: Business sizes
Source: Own compilation

Figure 5 shows the business size focus of the articles included in this systematic literature review. The sizes are based on the size as stated by the authors or deduced from the number of employees the business had (as stated by the authors). When not explicitly stated, the reviewers classified small businesses as those with six to 50 employees, medium-sized businesses as those with 51 to 200 employees and large businesses as those with more than 200 employees (Nieuwenhuizen, 2011:365-366; van Nieuwenhuizen & Duke, 2020:31-32). As is the case relating to the industries, it can be concluded that the affect that cognitive bias has on managers is not business-size specific. Most included publications did not state the size of the businesses that they investigated; those who did, favoured targeting large businesses. Analysis of the included studies showed that small and medium-sized business managers were most likely to only be affected by attribution, anchoring, optimism and overconfidence bias. Future publications can investigate whether managers in large business are more susceptible to cognitive biases than those of smaller businesses.

3.4 Methodological distribution

Table 4: Methodological summary

Author(s) (Publication)	Research design			Data collection method				Data collection instrument						Response rate (Theme)	Analysis approach	
	Exploratory	Descriptive	Causal	Quantitative	Qualitative	Mixed methods	Other	Survey	Interview	Experimental	Observation	Archival	Vignettes			Literature review
Busenitz & Barney (1997)		X		X				X							31%	Logistic regression analysis; bivariate analysis
Tjosvold & Poon (1998)	X				X				X						X	Structural equation analysis; correlations
Hodgkinson <i>et al.</i> (1999)			X							X			X		26%	Raw frequencies; association percentages; chi-square tests
Forbes (2005)		X				X		X				X			20%	Analysis of variance
Hilary & Hsu (2011)		X		X								X			X	Estimate logit regression analysis
Magazinius <i>et al.</i> (2012)	X				X				X						X	Document analysis; theoretical coding
Azouzi & Jarboui (2013)		X		X				X							50%	Linear regression analysis
Caputo (2016)	X					X		X					X			Zero-order correlation; analysis of variance, binary logistic regression
Shu <i>et al.</i> (2018)		X		X				X							49%	Regression analysis; exploratory factor analysis; confirmatory factor analysis
Almeida <i>et al.</i> (2019)	X					X		X	X						10%	Examination of skewness; Q plots; manual coding
Zhang, Zhao <i>et al.</i> (2020)		X		X				X							43%	Structural equation modelling
Fink & Pinchovski (2020)			X			X			X	X					17%; 27%	Rotated component matrix; mixed-effects logistic regression model
Zorn <i>et al.</i> (2020)	X					X						X			X	Asymmetry scores; variance inflation factors; analysis of variance; correlation matrix
Thelisson & Meier (2021)	X					X	X		X		X	X			X	Content analysis; Nvivo coding
Hristov <i>et al.</i> (2022)	X					X		X	X						21%	Thematic analysis; triangulation
Gu & Lin (2021)		X		X				X							41%	Partial least squares; Correlation coefficient; variance inflation factor; regression analysis
Barlach & Plonski (2021)			X			X		X	X						X	Interpretative phenomenological analysis
Zhang, Bij <i>et al.</i> (2020)		X		X				X							33%	Profile-deviation approach; zero-truncated Poisson

																regression; zero-truncated negative binomial regression
Breiter <i>et al.</i> (2022)	X					X			X					X	X	Scoping review; data overlap; triangulation
De Sordi <i>et al.</i> (2022)	X					X			X					X	X	Structured review; content analysis
Total (and average)	9	8	3	7	2	10	1	11	9	2	1	4	2	2	33%	

Source: Own compilation

The methodical summary above shows that there is a wide range of methods used in studies focusing on cognitive biases among managers. There is an emphasis placed on exploratory research designs when investigating these phenomena; correspondingly, mixed methods are commonly used to collect data from respondents. In addition to this, the table above also shows that surveys and interviews are preferred collection instruments in the research articles reviewed. Naturally, the authors of the papers above frequently implemented either regression analysis or content analysis. Empirical researchers may consider this table during the methodological planning and design of their study. The analysis approaches can then be adapted for their respective papers for comparative and conceptualisation purposes.

There is also a clear trend shown with the response rates in these studies; an average of response rates of 33% in the studies that reported response rates might indicate that there is a certain level of discomfort for managers in participating in studies of this nature. Perhaps future studies can put more emphasis on guaranteeing the anonymity when recruiting managers to participating in these kinds of studies. This might increase the level of responses gained when conducting this type of research. Additionally, researchers could begin the research process by emphasising the importance of this type of research, highlighting the mere-measurement effect beforehand (Hristov *et al.*, 2022:19; Thaler & Sunstein, 2008:70). Two of the most recent included research articles implemented a systematic literature review, which is triangulated and vindicated by conducting interviews. This trend could be the avenue taken by future academics to circumvent the low response rates among managers.

3.5 Settings and samples

Table 5: Setting and sample summary

Publication	Additional context	Sample population	Sample distribution									
		n (n =)	Sample totals	Includes non-managerial	Top management	Middle management	Lower	Entrepreneur	Mixed (Not separated in number)	Non-managerial employees	Students	Papers / records
Busenitz & Barney (1997)	Managers included were responsible for at least two functional areas. Entrepreneurs were founder-managers and currently in the process of another start-up.	219					24	124	95			
Tjosvold & Poon (1998)	Collaborative decisions between managers and employees/subordinates	33	X				24		9			
Hodgkinson <i>et al.</i> (1999)	Highly capital-intensive technological investment decisions.	140	X	52							88	
Forbes (2005)	New venture internet businesses.	108						108				
Hilary & Hsu (2011)	The managers must have made consecutive forecasts and must still have been the CEO of the business at the time of the data collection and analysis.	5768	X									5768
Magazinius <i>et al.</i> (2012)	Software development projects.	15		1	3	11						

Azouzi & Jarboui (2013)	Included listed (which were in the majority) and non-listed businesses.	180		180							
Caputo (2016)	Uses fictional scenario to test perceptions during negotiations with an intervention from third party.	56					56				
Shu <i>et al.</i> (2018)	Included participants must have had recent (in the last 3 years) entrepreneurial activities.	212					212				
Almeida <i>et al.</i> (2019)	Hiring process.	445		141		304					
Zhang, Zhao <i>et al.</i> (2020)	New venture businesses.	214					214				
Fink & Pinchovski (2020)	Software development projects.	155	X	5	29	12			4	105	
Zorn <i>et al.</i> (2020)	Employment and payment decisions after managerial failure in S&P 1 500 businesses. Sample was made up of highly experienced participants (17 year on average).	73		73							
Thelisson & Meier (2021)	Listed real estate businesses during a merger. It merged with a subsidiary of a governmental business.	896	X					54		842	
Hristov <i>et al.</i> (2022)	Perceptions based on entire career experience and not just a single case.	100		65	35						
Gu & Lin (2021)	Entrepreneur from the most productive areas in growing economies with new venture businesses as the sample.	175					175				
Barlach & Plonski (2021)	New venture businesses in developing countries financial, economic, and cultural centre of the region.	8		8							
Zhang, Bij <i>et al.</i> (2020)	Entrepreneurs in developed economies.	253					253				
Breiter <i>et al.</i> (2022)	Aerospace manufacturing.	25	X		5					20	
De Sordi <i>et al.</i> (2022)	Purposefully sought negative perceptions and experiences after entrepreneurial failure.	66	X				17		15	34	
Total		914	(68	525	72	35	99	31	28	19	666
		1	85)			1	5	3		3	4

Source: Own compilation

Table 5 summarises respondent types and management levels in the articles included in this systematic literature review. The constructs have been investigated in various settings. The topics under discussion seem to be most relevant in project management, fictional case study perceptions, mergers and negotiations, start-up businesses and post-business failure. Future reviews can consider these contextual variations for inclusion and exclusion criteria in their systematic literature reviews. These settings may also indicate triggers to the occurrence of the cognitive biases. Empirical academics may use them as indicators for the commencement of similar research projects. The impact of cognitive biases on managers was mostly explored among entrepreneurs with a total of 995 individuals participating in the studies that were included for this systematic literature review. Even

though there was an effort made to only include empirical studies with either managers or entrepreneurs, seven studies included students, non-managerial employees, and other records. This is probably due to publications being mostly mixed-method papers and the low response rates of managers and entrepreneurs, which was clearly a prominent feature of the included studies. Future systematic reviews can consider excluding mixed-method papers to avoid this dilution of sample inclusion. Authors investigating students as the sample population is a common occurrence in studies investigating cognitive biases; this is also a reason for the exclusion of many articles that could have been part of the current review. Future reviews can consider following this trend by excluding managers and focusing on students and non-managerial samples. However, this practice is discouraged by some authors (Caputo, 2016). Empirical researchers can also choose to focus on entrepreneurs as the sample included in their papers or even top managers to continue the trend seen in the current review. However, there is an apparent need for studies of the impact of cognitive biases among middle managers, as it is unlikely that their affect is managerial level specific. Furthermore, authors could endeavour to discover whether there are differences in the susceptibility of managers to cognitive biases based on their managerial level. Researchers are encouraged to emphasise respondent anonymity to possibly gain higher response rates, gaining acceptance before conducting this type of study among managers may also ensure more engagement from managers.

Managers' current level has a role in the tasks they execute in a business, which impacts the skills approach that they would mostly be expected to call upon in their daily activities; less exposure to conceptually challenging tasks will ultimately impact their level of susceptibility to cognitive bias (Amie-Ogan & Godsplan, 2021:59; Lugmayr & Grueblbauer, 2017:41). Notwithstanding, the included articles make no mention of this; future studies could investigate this suggested research gap.

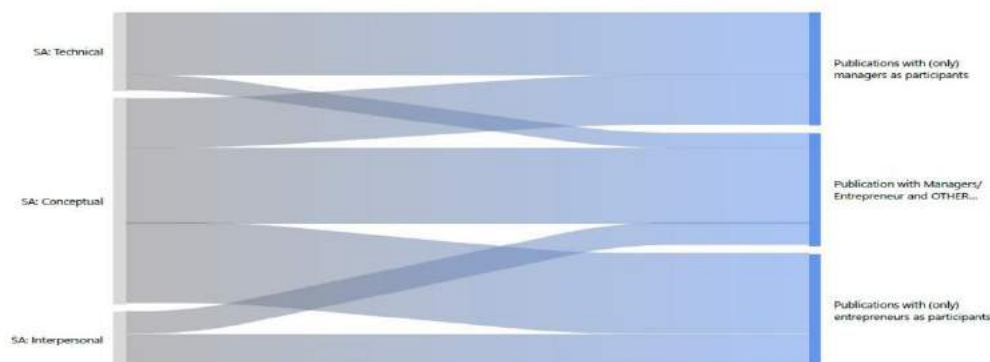


Figure 6: Skill approach by sample
Source: Own compilation

Figure 6 above is a Sankey diagram representing the skill approach focus by managerial sample (according to their publication classification). From this figure, it can be concluded that cognitive biases were more likely to affect managers' technical skills and entrepreneurs' interpersonal skills during their task execution. Further content analysis of the included articles showed that the managers were uniquely more likely to be affected by nine cognitive biases, namely choice-supportive bias, the Einstellung effect, groupthink, halo-effect, loss aversion, saliency bias, self-interested bias, sunk cost and affect heuristic. While publications with entrepreneurs had base-rate fallacy, hindsight bias, illusion of control, illusory correlation and regression fallacy as biases that seemed to impact entrepreneurs more than managers. This could be a coincidence of the impartially selected articles; nevertheless, it does present an intriguing avenue for additional comparative, empirical research.

3.6 Theories, definitions and contributions

This section explored the various definitions used by authors for the term cognitive bias; it also maps the various theories explored in the included works and provides a summary of the various theoretical contributions and managerial implications of the articles presented in this review.

Table 6: Summary of definitions and contributions

Publication	Theoretical underpinning	Theoretical contributions	Managerial implications
Busenitz & Barney (1997)	Behavioural decision theory	Confirms that skilled entrepreneurs do not necessarily make skilled managers.	Biased managers/entrepreneurs are beneficial during the fledgeling years of a business. Biased managers/entrepreneurs should be allowed to function in situations where their bias can allow the possible benefits (efficacy, creativity) while having limited detriment to the business.
Tjosvold & Poon (1998)	Theory of interdependence; cooperation theory	Postulates that relationships between managers and non-managers mitigate some cognitive biases.	Managers should promote healthy, collaborative relationships between managers and non-managers.
Hodgkinson <i>et al.</i> (1999)	Organisation theory	Cognitive mapping has a mitigating effect on cognitive biases.	Managers ought to equate current problems with passed ones to learn from past successes during the decision-making process.
Forbes (2005)	-	Overconfidence in entrepreneurs is influenced by their ownership of the business. Entrepreneurs who founded established businesses tend to be more overconfident than new-venture entrepreneurs.	Determining which managers are most susceptible to cognitive biases may have preventative effects on cognitive biases.
Hilary & Hsu (2011)	Theory of self-attribution	Confirms that people place less emphasis on the forecasts made by overconfident managers.	Managers should be alert to the fact that various stakeholders take the estimations made by overly confident managers less seriously than they probably should.
Magazinius <i>et al.</i> (2012)	-	In addition to bias having an influence on the occurrence of inaccuracies, people sometimes purposefully make inaccurate estimations.	Managers should be aware that more technically superior forecasting techniques may mitigate, but do not entirely eliminate inaccuracies.
Azouzi & Jarboui (2013)	Agency theory	Emotional intelligence scores can be used to employ managers who will likely be the least susceptible to cognitive biases.	Encourages early access to emotional intelligence training.

Caputo (2016)	Social cognition theory	Confirms that cognitive biases can be mitigated by external interventions as well as third parties.	Framing techniques can be used to de-bias negotiation processes.
Shu <i>et al.</i> (2018)	Generation theory; strategic management theory; network management theory; dimensional social theory; social exchange theory	Confirms a positive relationship between networking, opportunity recognition, cognitive biases and political skills.	Managers should seek to enhance their networks in the political sphere.
Almeida <i>et al.</i> (2019)	Intelligent career theory; RBV theory; theory of human capital	Denotes the importance of culturally diverse staff and their inclusion in decision making.	Managers should opt for diversity in their team and ensure that vast opinions are sought and considered during decision-making processes.
Zhang, Zhao, <i>et al.</i> (2020)	Social cognition theory; special network theory	Provides insights into the effect of cognitive bias on entrepreneurs' effectuation and causation behaviour during interpersonal interactions.	Managers are encouraged to seek comprehensive information.
Fink & Pinchovski (2020)	Substitution theory	Agile framing leads to increased bias when compared with plan-based framing. Confirms that access to the most relevant information limits the time-saving bias; however, it does not irradiate it.	People who support managers ought to provide them with the most relevant and most timeous information during the decision-making process.
Zorn <i>et al.</i> (2020)	Social exchange theory	Confirms that the more experienced top management is, the less likely they are to make cognitive bias-related errors.	It is recommended that managers continuously seek to improve their awareness of cognitive bias to dampen their impact. Less experienced managers should seek the inputs of more senior managers before making decisions.
Thelisson & Meier (2021)	-	Sheds light on the impact of cognitive biases as a hinderance to the negation processes; adding to merger and acquisition literature.	Managers should be made aware of the potentially divisive impact of cognitive bias in mergers. They can proactively reduce their impact if they can pre-emptively recognise them.

Hristov <i>et al.</i> (2022)	Strategic management theory	The proposed framework integrates cognitive psychology insights and suggests possible solutions to cognitive biases.	The paper provides a roadmap for managers to use to attain effective and efficient performance.
Gu & Lin, (2021)	Cognitive bias theory; theory of social and economic organisation	Managers in smaller business are more affected by cognitive biases.	Less experienced managers in small businesses should be monitored by more experienced managers; they should be accessible to assist in decision-making.
Barlach & Plonski (2021)	Gestalt theory; classic economic theory; leadership theory	More knowledgeable managers tend to have an easier time finding contradicting information than novice ones do. Found no significant difference between managers' exhibition of cognitive bias and the amount of experience they had.	Suggests that managers actively seek contradicting points of view before deciding on a course of action.
Zhang, Bij <i>et al.</i> (2020)	Logic theory; probability theory	The paper proves that a normative rule based on statistics and probability theory does not benefit entrepreneurial behaviour or performance.	The study uses Kahneman's (2003) typology to categorise relevant cognitive biases into two broader biases (availability and representative).
Breiter <i>et al.</i> (2022)	-	Operations managers may benefit from increased awareness of cognitive biases.	Suggests that even just participating in a cognitive bias study may have rudimental improvements on managers ability to deal with cognitive biases. Provides a jump-off point for managers and researchers in operations management for the lessening of disruptions and improvement of reliability of managers and operations systems.
De Sordi <i>et al.</i> (2022)	Theory of entrepreneurship	Confirms and elaborates major risks of entrepreneurships; aiming to mitigate cognitive bias that blindly encourage entrepreneurial thinking and behaviour.	Managers should be aware of the detrimental effects of entrepreneurial behaviour. Particularly the impact of their failure.

Source: Own compilation

The authors (Barlach & Plonski, 2021; Busenitz & Barney, 1997; Fink & Pinchovski, 2020; Hodgkinson *et al.*, 1999; Zorn *et al.*, 2020) mostly cited Tversky and Kahneman (1974) when providing a definition of cognitive biases. Moreover, other than social cognitive bias theory, the table above shows no clear theoretical uniformity in the included studies.

Caputo (2016) makes a notable methodological contribution by straying from the common trope of using students and/or inexperienced individuals as its sample. It also incorporates vignettes and other experiment tools from other research areas to investigate behaviour during negotiations within realistic contexts. As mentioned earlier, Breiter *et al.* (2022) and De Sordi *et al.* (2022) make use of a combination of interviews and systematic literature reviews to bolster the relevance of their investigations. These articles might be pioneering the way forward to dealing with low response rates in research dealing with cognitive biases among managers.

3.7 Empirical advancements

In this section, the reviewers summarise the specific cognitive biases that impact specific managerial skills along with what that impact is, the possible moderators and mediators identified by the authors on an article-by-article basis. The table presented below also indicates the consequences of these impacts by first listing the negative outcomes and then the positive ones where applicable.

Table 7: Summary of empirical advancement gained from included articles

Publication	Themes		Impact			Moderation	Mediation	Outcome
	Cognitive bias(es) investigated	Skill(s)	Negative	Positive	Neutral			
Busenitz & Barney (1997)	Overconfidence bias; representativeness	Strategic decision-making; thinking skills; problem-solving; risk perception	X	X		Commercial awareness	-	<p>Unrealistic expectation of outcome; Warped perception; Inability to recognise potential opportunities; Inability to recognise core/cause of problems; Inability to see interconnected nature of problems and/or behaviour; Making unnecessarily risky decisions; Diminished accuracy.</p> <p>Enables quick decision-making; Improved efficiency; Enables timely seizure upon opportunities; Increased opportunity recognition; Allows simplified approach to problem-identification; Enhanced understanding of the business environment; Allows simplified approach to problem-solving; Improved entrepreneurial performance; More creative product development.</p>
Tjosvold & Poon (1998)	General reference to cognitive bias (not explicitly distinguished)	Ability to collaborate; ability to deal with interference; communication	X			-	-	Inability to recognise potential opportunities; Limits varying inputs; Inhibits effective problem-solving
Hodgkinson <i>et al.</i> (1999)	Framing bias	Strategic decision-making; problem-solving; thinking skills; investment decision-making	X	X	X	Cognitive mapping	-	Unaddressed bias compound with others. Decisions made based on manipulated perception instead of reality; Increased risk-aversion decision-making; Increased risk-

								seeking decision-making; Warped perceptions. Allows simplified approach to problem-identification.
Forbes (2005)	Overconfidence bias	Strategic decision-making; decision comprehensiveness; thinking skills	X			Education; Awareness	Past success; Age; External equity funding	Causes disruptions during the decision-making process; Diminished accuracy.
Hilary & Hsu (2011)	Overconfidence bias; attribution bias	Managerial credibility; ability to make forecasts	X	X			Past success	Loss of managerial credibility; Increased forecast precision
Magazinius <i>et al.</i> (2012)	Overconfidence bias; anchoring bias; optimism bias	Ability to make forecasts	X			-	-	Decreased managerial awareness; Unaddressed bias compound with others; Diminished accuracy; Warped perceptions.
Azouzi & Jarboui (2013)	Einstellung effect (lack of mental flexibility); loss aversion bias; optimism bias	Emotional intelligent	X			Emotional consciousness	-	Decreased efficiency of governance mechanisms
Caputo (2016)	Anchoring bias; framing bias with fixed-pie; self-serving bias	Ability to negotiate	X			Education; Informative framing techniques; Ability to learn; Experience; Agreeableness; Emotional stability	Extraversion	Decreased information processing; Inability to recognise potential opportunities.
Shu <i>et al.</i> (2018)	General reference to cognitive bias (not explicitly distinguished)	Commercial awareness; opportunity discovery; networking	X	X		Experience	Prior success; Susceptibility to cognitive bias	Decreased access to information; Inability to recognise potential opportunities. Enables timeous seizure upon opportunities.

Almeida <i>et al.</i> (2019)	General reference to cognitive bias (not explicitly distinguished)	Hiring decisions	X			Training; Experience	Hierarchal rigidity	Causes disruptions during the decision-making process; Decreased diversity in human resources; Disrupts communication; Decreased access to varying points of view; Warped perceptions
Zhang, Zhao, <i>et al.</i> (2020)	Illusion of control; Overconfidence bias	Strategic decision-making	X	X		-	-	Overestimation of accuracy Improved business survival; Increased persistence; Increased use of effectuation in new ventures
Fink & Pinchovski (2020)	Framing bias; time-saving bias	Time-related decision-making	X			Experience; Access to information	-	Decreased goal realisation; Unrealistic expectation of outcomes
Zorn <i>et al.</i> (2020)	Choice-supportive bias	Hiring decisions	X			Experience; Access to information	-	Decisions made based on manipulated perception instead of reality; Loss of managerial credibility; Warped perceptions
Thelisson & Meier (2021)	Anchoring bias with availability bias; temporal bias; Hubris bias with brakes	Thinking skills; ability to negotiate	X	X			Social pressure; Expert's role (Failure to recognise the contributions of others)	Decreased managerial awareness; Disrupts communication; Inability to see interconnected nature of problem and/or behaviour; Loss of managerial credibility; Perpetuates ignorance of cultural differences Enables timeous seizure upon opportunities.
Hristov <i>et al.</i> (2022)	Affect heuristic; anchoring bias; availability bias; overconfidence bias; groupthink; optimism bias; halo effect; saliency bias; self-interested bias; sunk cost fallacy	Strategic decision-making; thinking skills	X			-	-	Decreased managerial awareness; Inability to see interconnected nature of problems and/or behaviour; Unrealistic expectation of outcomes

Gu & Lin, (2021)	Anchoring bias; attribution bias	Collaborative decision-making; ability to delegate	X			Experience	Business size; Past success.	Decreased trust between managers and subordinates; Loss of managerial credibility; Hinders rational thought; Limits ability to learn; Limits varying inputs; Managerial burnout. Enables timeous seizure upon opportunities.
Barlach & Plonski (2021)	Einstellung effect	Problem-solving; risk perception	X			-	-	Increased likelihood of business failure
Zhang, Bij <i>et al.</i> (2020)	Availability bias; representativeness heuristic; hindsight bias; illusory correlation; availability bias; base-rate fallacy; illusion of control; regression fallacy	Strategic decision-making		X		-	-	Improved entrepreneurial performance
Breiter <i>et al.</i> (2022)	Anchoring bias; attribution bias; confirmation bias	Managerial credibility	X			-	-	Inability to recognise core/cause of problems; Inability to see interconnected nature of problems and/or behaviour
De Sordi <i>et al.</i> (2022)	Optimism bias	Commercial awareness	X			-	-	Unrealistic expectation of outcomes; Warped perceptions
Total			19	7	1			

Source: Own compilation

Table 7 above summarises all the themes found in the studies that were included in this systematic literature review. The themes found are the skills under investigation (either explicitly stated or derived from analysing each article) and the cognitive biases that have an impact on the skills. The table also articulates whether the impact on these skills was negative, positive or neutral. This table explains the outcomes and/or consequences of the impact of the cognitive biases on the managerial skills. Unsurprisingly, the majority of authors describe negative impacts of cognitive bias on managers' skills. Interestingly, there are seven instances (Busenitz & Barney, 1997; Hilary & Hsu, 2011; Hodgkinson *et al.*, 1999; Hong *et al.*, 2019; Shu *et al.*, 2018; Thelisson & Meier, 2021; Zhang, Bij, *et al.*, 2020; Zhang, Zhao, *et al.*, 2020) of cognitive biases having a positive effect on managerial skills and subsequently, describing

favourable outcomes. The findings of this table are synthesised and presented as the conceptual framework below, answering this systematic review's research question.

3.8 Conceptual framework

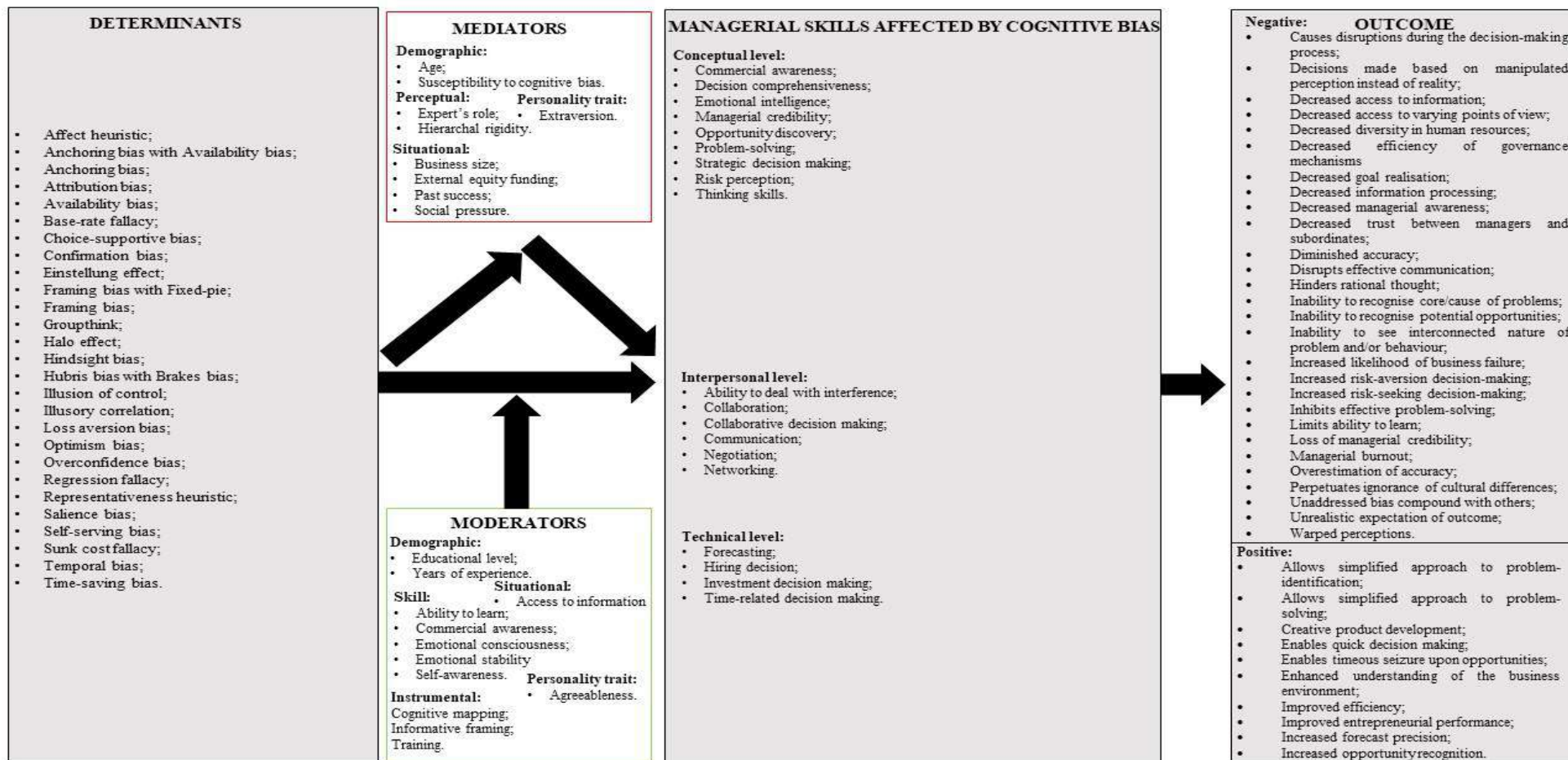


Figure 7: Consequences of the impact of cognitive bias on managers' skills

The conceptual framework presented above can be considered a snapshot of Table 7's findings; or as a derivative of an antecedents, determinants, and outcomes (ADO) model that gives a bird's eye view of the topic under discussion and the answer to the research question (Goyal *et al.*, 2021:1183; Pahlevan Sharif *et al.*, 2019:163). Future researchers can attempt to empirically confirm or discount the various moderators and mediators presented in the figure

Managerial implications
The preceding sections highlighted various issues regarding the impact of cognitive biases on skills for the consideration of managers and entrepreneurs. In this section, the reviewers present pertinent possible solutions for managers to consider.

Senior managers are encouraged to ensure the fostering of informative interactions between managers and subordinates, and promote collaborative relationships between managers and subordinates (Tjosvold & Poon, 1998:328). This enables access to information and promoting trust and credibility. Correspondingly, mapping thoughts during the decision-making process (Hodgkinson *et al.*, 1999:997) create audit trails that can be used for reflections and gaining awareness of the emergence of cognitive biases.

Forbes (2005:623) proposes preventive measures for dealing with cognitive bias. During the recruitment of managers and other employees, the human resources department can implement an assessment of cognitive biases to indicate which cognitive bias the individual is most susceptible to. The department can then provide the necessary training to either mitigate vulnerability through awareness or allay the cognitive biases before ever suffering their consequences.

Framing, which is based on fairness, can be utilised to accelerate the achieving agreement between parties in negotiation processes (Caputo, 2016:4304). Managers are also encourage to increase their awareness by attending cross-cultural training programmes that highlight the importance of diversity backgrounds and points of view (Almeida *et al.*, 2019:332). Finally, making information more accessible and digestible also assists in de-biasing managers, increasing accuracy and enhancing managerial credibility (Breiter *et al.*, 2022:1402; Fink & Pinchovski, 2020:99).

4. Conclusion

By highlighting the articles included, this systematic literature review reinforces the foundation of the body knowledge and eases its accessibility to novice researchers and managers. The current study can serve as a starting point for managers and academics that seek to delve into the cognitive biases that impact managers' skills. It outlined the abilities, specific skill approach as well as the outcomes of the various interactions. The content analysis showed some mediating as well as moderating variables that respectively enhance or mitigate the suggested relationships. Future empirical studies can determine whether the presented conceptual framework is relevant and can be confirmed through statistical methods. Furthermore, the suggested model can be tested in various comparative settings, including but not limited to determining whether the model holds water in different functional areas such as marketing and operations departments.

Overconfidence is the most prevalent cognitive bias; typically impacting managers' conceptual skills. This conclusion echoes the findings of Thomas (2018:139). Following the examples of Caputo (2016) and Thelisson and Meier (2021), future empirical researchers could combine ubiquitous cognitive biases (like overconfidence) with a similar and/or seemingly related, yet unexplored cognitive bias, such as the Dunning-Kruger effect (Dunning & Kruger, 1999) among managers. Furthermore, since there has been a trend to focus on conceptual skills in recent years, future authors could investigate this combination as it relates to strategic decision-making, opportunity discovery, thinking skills and problem-solving in the various gaps and existent settings covered throughout this systematic literature review.

The reviewers conclude that the ability to deal with cognitive biases, similar to dealing with interference during communication, should be considered to be a managerial skill by academics and business leaders in the future.

Acknowledgments

The researchers would like to thank Dr Aloe Meintjes who availed himself as independent reviewer of inclusion of sources in case of inclusion discrepancy among the authors.

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Advancing the Prospects of Women in Academic Leadership: A Study of a Selected South African University

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Keywords

Career progression,
Academic leadership,
Women inclusiveness,
higher education

Abstract

There is evidence that efforts to empower women in academia in South African universities over the past number of decades have not borne significant fruit. The objective of this study was to determine ways in which to advance and empower women for positions of academic leadership in a South African university. This study was motivated by the existing gap revealed in previous literature addressing leadership and decision-making positions with a limited number of women in South African universities. A qualitative research method was employed with strict adherence to participatory action design, involving Walter Sisulu University's permanent academic staff. The respondents participated in a qualitative interview during which they shared their subjective views on the challenges women academics face in their career path in attaining leadership roles within the selected South African university. An extensive literature review was conducted to support the information collected from respondents, providing contextual insights on the topic under investigation. The findings reported on existing structures that the university has put in place to address the challenges of aspiring women leaders; the measures to improve and sustain the representation of women in leadership roles; and the ways to empower aspiring women leaders at the university. The study revealed that measures such as the eradication of verbal and emotional harassment against women in academia; the enforcement of gender equality measures in the workplace; and the transparent process of shortlisting and employment of academic leadership positions, among other factors, were vital to improving the representation of women in academic leadership roles in a South African university. It is recommended that measures such as women's mentorship initiatives, regular professional leadership development programmes focused on women, and recognition for the outstanding performances of women, among other factors, could be significant in advancing aspiring women in academic leadership within a selected South African university..

1. Introduction

Notwithstanding government regulations and policies, women continue to be underrepresented in leadership roles in organisations in general and universities in particular (Coe, Piggott, Davis, Hall, Goodell, Joo & South-Paul, 2020; Herbst, 2020). Prior studies, such as Blumenau (2021) and Dappa, Bhatti and Aljarah (2019), have acknowledged that organisations with a fair representation of women in leadership roles are incredibly efficient in terms of operations, productivity and adherence to work ethics. According to Flabbi, Macis, Moro and Schivardi (2019) and Catalyst (2013), there is a link between the number of women on boards of directors and in senior leadership roles and organisational effectiveness. According to a study of Fortune 500 companies in the United States of America (USA), firms with three or more women on their boards of directors and in executive positions typically achieve superior organisational and financial performance, improved corporate governance, less unethical behaviour, increased corporate social investment and improved corporate reputation (Catalyst, 2013).

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Women leaders are gradually becoming more visible in work contexts, which is seen as a sign that women leaders are distressingly underrepresented (Coe et al., 2020; Sandler, 2014). Concerning their academic career, it is evident that women join the academic workforce far later than males, owing to cultural and patriarchal constraints that confine women to childrearing, support for their husbands, and practically all other household obligations (Herbst, 2020; Post, Latu & Belkin, 2019). Consequently, progressive nations across the globe have enacted various legal frameworks to enhance women's leadership development and growth within universities and in other sectors of engagement (Isaacs, Strydom & Mbukanma, 2022).

In the South African context, Post, Latu and Belkin (2019) and Eagly and Carli (2003) emphasised an understanding that women do not approach academic leadership in the same way that men do. Additional awareness of the value of female leaders in South African universities is based on the realisation that globalisation and national cultures require that women adopt male-determined leadership styles if they want to access leadership positions. Workplaces are becoming more diversified, and women's leadership approaches are acknowledged as contemporary. Ramohai (2019) and Atkinson, Wyatt and Senkhane (1993) support the notion that the majority of women are latecomers to leadership positions in South African universities and the public service, arguing that women constitute South Africa's 'true unmined treasure'. To emphasise women's leadership in the public service, the South African government designed and approved an equity-related regulatory framework that must be enforced to preserve and promote women's rights (McIlongo & Strydom, 2021).

As designed by the South African government, these legal frameworks are meant to prioritise and foster women leaders' growth and develop procedures to promote equality. These legal frameworks include, but are not limited to, the Constitution of the Republic of South Africa Act 108 of 1996; the Public Service Act 38 of 1994; the Commission for Gender Equality Act 30 of 1996; the Employment Equity Act 55 of 1998; the Skills Development Act 97 of 1998; the Skills Development Levies Act 9 of 1999; the Promotion of Equality and Prevention of Unfair Discrimination Act 4 of 2000; and the National Qualifications Framework Act 67 of 2008. In addition, HERS-SA (Higher Education Resource Services South Africa) and HELM (Higher Education Leadership and Management), under the umbrella of Universities South Africa (USAF), are dedicated to promoting and supporting women in higher education to solve global equality and access concerns, as well as local leadership management demands. Currently, women are still underrepresented in the leadership positions in South African universities (Herbst, 2020; Moodly & Toni, 2019) and it appears as though an enabling and supporting legal framework does not yield the desired outcomes. As such, the need to investigate the variables that impede women leaders from progressing to higher levels of academic leadership, despite their recognised worth to optimal performance, emerges.

2. Problem Statement

This study was undertaken to ascertain the ways to advance the prospects of women in academic leadership at a selected South African university; motivated by the underrepresentation of women in leadership positions in South African universities. Previous studies, such as Herbst (2020) and Ramohai (2019), emphasised that males have continually dominated leadership roles in South African universities, with few positions given to women. In most cases, this situation becomes untenable because the limited number of leadership positions filled by women are, for the most part, acting positions (Herbst, 2020; Moodly & Toni, 2019). As a result of this reality, the gender imbalance in academia and women's underrepresentation in senior academic positions have both been a source of concern for scholars worldwide. However, it is well documented that women often face obstacles in their professional trajectories as they advance to senior roles in several different organisations (Jalilianhasanpour, Chen, Caffo, Johnson, Beheshtian & Yousem, 2020; Sarseke, 2018). Perhaps, when examining gender representation trends in South African universities, it is critical to consider both women's underrepresentation and men's overrepresentation in academic leadership roles.

While there is a tendency toward equity between all academic employees in many nations, statistics on the number of women employees occupying leadership positions across institutions of higher

learning drop dramatically in relation to other positions (Idahosa, 2020; Ramohai, 2019). Women's employability at universities has been hindered by male dominance and the restrictive career path patterns in many institutions (O'Connor, 2019). As a result, gender identity has become a critical factor in the professional advancement and the social acceptability of men and women (Jalilianhasanpour et al., 2020; Nyoni & He, 2019). The fact that women are underrepresented in our institutions and in our society does not diminish the importance of their role in promoting solid values and good education in our society. Measures to promote women's career advancement in academia are complex because of the persistent dominance of males, which impedes attempts to achieve gender equality (Liani, Nyamongo & Tolhurst, 2020; Rutledge, 2020). It may be necessary to design and execute evidence-based intervention programmes to improve gender equality, particularly in South African institutions of higher learning because of the known benefits of staff diversity (Strydom, 2017).

Nevertheless, because of the gender disparity in academic leadership in South African universities, ambitious academic women in our society have expressed conflicting views, varied interpretations and mixed thoughts about their academic career progression (Sadiq, Barnes, Price, Gumedze & Morrell, 2019; Urban & Chantson, 2019). In other words, the current trend of male dominance in academia has a significant influence on women's participation and gender equity. As a result, the ability of South African universities to effectively represent women's interests and beliefs is negatively impacted on by rising gender discrepancy in decision-making positions (Sadiq et al., 2019; Urban & Chantson, 2019). Considering that women are underrepresented in academic leadership positions, it is critical to identify strategies that will increase their chances of advancement. Against this backdrop, this research sought to find measures to improve women's chances of getting into academic leadership positions in South African institutions. The research objectives for the study conducted at Walter Sisulu University in South Africa:

- To recognise existing structures the university has put in place to address the challenges aspiring women leaders face in attaining decision-making positions;
- To identify measures to improve and sustain the representation of women in leadership roles at the university; and
- To ascertain ways to empower aspiring women leaders at the university.

The rationale of this study is that the findings will assist academia by providing significant recommendations that could be implemented to improve the number of women in academic leadership positions in a South African university.

3. Theoretical Framework

Everyday experience may be better understood with the application of theory. A theory is a broad description of how a variety of events are related systematically; placing objects in an expanded context deepens our knowledge of both the whole and the components that make up the whole, according to York College of Pennsylvania (2015). Numerous theories have been developed regarding whether men and women differ in their approach to leadership; whether this difference is one of style or substance; whether the differences are accurate or perceived; whether one leadership approach is more impactful than another; and which approach is more likely to result in success. Thus, in conceptualising the subject under investigation in this study, four selected schools of thought, namely biology and sex; gender role; casual factors; and attitudinal drivers, are discussed below because they can assist in providing logical insights into advancing the prospects of women in academic leadership. It is important to note that these schools of thought are seen from the point of view of men and women aspiring or occupying leadership roles.

3.1 Biology and Gender

This school of thought appears to be predicated on the assumption that leadership is biologically determined; inherent in males; and that males have an intrinsic ability for leadership that is governed by biology, behaviour and culture; hence unachievable by women (Oko-Otu & Chidume, 2021;

Hoffman, Woehr, Maldagen-Youngjohn & Lyons, 2011). As a result, only men can take on the role of a successful leader. A large portion of the supporting theories, such as the great man theory and the trait theory of 18th and 19th century ideologies posited by Hoffman et al. (2011) and Organ (1996), confine leadership studies to males. Biological sex is premised on the idea that males are meant to be leaders, which seems to be skewed. An underlying assumption of this biologically motivated approach may have been that women could ascend to leadership positions just as quickly as they could become men.

Unsurprisingly, subsequent research findings do not support this approach and limit further research in this dimension. While a few studies have established gender differences in leadership style, other research indicates that they do not exist (Oko-Otu & Chidume, 2021; Shaked, Gross & Glanz, 2019). In their studies, Joshi, Wakslak, Appel and Huang (2020) and Heintz, Kramm and Ruch (2019) show that men and women have significantly more in common than differences in their leadership practices and are equally successful. As a result, with little evidence supporting biological sex as a viable study hypothesis for differentiating male from female leadership, the biological sex method loses its place in more comprehensive investigations. Interestingly, as learning evolves, the biological method seems to persist. Even though several researchers have discovered negligible differences between the inherent ability of male and female managers, even within university communities, stereotypes exist that depict women as less capable leaders. Such stereotyping, among other assumptions, becomes a significant factor that fuels the underrepresentation of women in leadership positions in universities and needs to be eradicated.

3.2 Gender Role

This approach acknowledges the role of socialisation and explores the notion of gender role as a determinant of leadership. Some studies, such as Joshi et al. (2020) and Heintz et al. (2019), investigated the broader notion of the gender role to see whether leadership effectiveness or the rise of new leaders could be connected to traits considered to be more usually male or female in the workforce. Simply put, the study found that gender role is a more significant predictor of the development of a leader than sex (Joshi et al., 2020; Heintz et al., 2019). However, gender roles have a new dimension, with male, female and androgynous currently being included in the mix of genders in most organisations. It is fascinating to think about what androgyny findings in terms of leadership position might entail. Even in today's workplace, many people believe that the stereotypical masculine traits of men are critical to success, without considering a range of behaviours and attitudes that are generally acceptable, appropriate and desirable for a person to function in a leadership position. Nevertheless, considering the gender role approach is vital in this study because this approach enables an institutional structure that identifies an individual's intrinsic ability and development towards leadership positions.

3.3 Causal Factors

A causal factor is described as any significant unintentional, unintended contributor to an incident (an adverse event or unpleasant situation) that, if avoided, would have either prevented the incident from occurring, decreased its severity or prevent a recurrence (Martin, Hughes, Epitropaki & Thomas, 2021; Karlou, Afarinesh & Zargar, 2019). As applicable to this study, causal factors involve identifying and considering a variety of other contributing factors challenging the advancement of women in attaining academic leadership positions. A comprehensive examination of all the elements influencing leadership effectiveness, or the emergence thereof, and their consequences for analysing genuine or perceived male versus female differences is undoubtedly beyond the scope of this study. The emphasis of this ideology, on the other hand, is on a selection of causative factors presented to give the reader a feeling of the themes under consideration. Consideration of the underlying causes offers some insight into this problem. A woman's attitude, self-esteem and previous work experience, as well as the sociocultural and corporate environment, are all factors that could risk her potential to be a successful leader (Martin et al., 2021). Managing these incidental elements to enhance the prospects of women in academic leadership requires the participation of individuals, university institutions and the government. Individuals may identify and learn the necessary skills and programmes to increase their capability. As a result, academic institutions and the government could collaborate to provide a

platform for training, development, and equipping people to acquire the necessary knowledge for leadership.

3.4 Feminine Attitudinal Drivers

Abid (2020) and Guillet, Pavesi, Hsu and Weber (2019) assert that new ideologies, often referred to as feminine values, have emerged in management. These ideologies, centred on consensual relationships, contrast with the competitive and authoritative attitude often associated with conventional masculine management. They encourage a distinct management approach to communication, leadership, negotiation, organisation and control (Miranda, 2021; Abid, 2020). This balance of values is increasingly seen as critical to organisational success, most especially in institutions of higher learning and corporate organisations (Guillet et al., 2019). However, most current thought conceptualises a feminine leadership style markedly distinct from its masculine counterpart. According to Bauer (2020), some feminine qualities provide an advantage to female leaders.

Feminine characteristics include enhanced communication abilities (particularly the capacity to listen effectively and be empathic), excellent intermediary skills (for negotiation and dispute resolution), well-developed interpersonal skills and a soft approach to dealing with people (Guillet et al., 2019). However, providing an opportunity for these feminine qualities to be exercised in South African universities does not eliminate the efforts of males but rather provides a platform where women's interests are fairly represented and for the transformation of the entire organisation. Thus, a growing body of research confirms the substance of this direction, namely that feminine attributes are more conducive to transformational leadership, while male characteristics are more conducive to transactional leadership (Bauer, 2020; Appelbaum, Audet & Miller, 2003).

4. Literature Review

Segregationist policies created substantial racial and gender inequities in South Africa. Men and women were equally victimised by exploitation and discrimination (Van Hout & Wessels, 2021; Ndinga-Kanga, Van der Merwe & Hartford, 2020). The issues faced by women academics at South African universities have been explored in concept. Some scholars, such as Letsoalo and Rankhumise (2020), Liani et al. (2020) and Walker (2020), blamed the fundamental issue on women's sociocultural beliefs. Contrary to the South African constitution, sociocultural gender constructions promote male dominance and female servitude. In South African universities, institutional sexism is subtle when the viewpoints and actions of male academics are prioritised over those of female academics (Albertus, 2019; Nordling, 2019). These contexts support institutional sexism and have a negative impact on the careers of women academics.

Women academics have traditionally faced several challenges in advancing to leadership positions in higher education. The hegemony prevailing during the apartheid years was patriarchal. Thus, both the patriarchal hegemony of the time and apartheid excluded women from the workplace. During apartheid, women academics were systematically excluded from mainstream South African intellectual culture and denied opportunities to establish themselves inside universities (Mokhele, 2013; Naicker, 2013). Multiple forms of discrimination and prejudice hampered those determined to pursue leadership in their academic careers. The gender gap continues to grow since most younger female academics must manage work, education and family. However, Breeze and Taylor (2020) and Walker (2020) claim that African women's identity within our cultures and communities prevents academic development and advancement to academic leadership since most women are expected to manage home duties and not pursue a job. Compared to their male colleagues, most South African women lack the ambition to further their professions in academics and in other fields (Nieuwoudt, Dickie, Coetsee, Engelbrecht & Terblanche, 2020). Mukorera (2020) and Sá, Cowley, Martinez, Kachynska and Sabzalieva (2020) claimed that the South African context inhibits the required efforts of women empowerment initiatives on training and career orientation towards promoting women's academic careers. However, more aggressive actions are necessary to erase the considerable gender inequality within South African universities.

The new democratic system had to confront a significant degree of gender inequality, and higher education institutions were among those most in need of adjustment. In their studies on women in academic leadership, Mokhele (2013) and Mazibuko (2006) praised the efforts of South African institutions to promote gender and equity promotion activities. Higher education governance and administration must contend with many power sources, competing agendas, decentralised organisations and limited resources to achieve women's inclusiveness in academic leadership. Power centres included schools, faculties, colleges, executive management, senates, and councils. Although major institutional restructuring to enhance women's progress, especially black women's progress, has happened since South Africa's democratic birth, old prejudices continue (Coe, Piggott, Davis, Hall, Goodell, Joo & South-Paul, 2020; Walker, 2020). These prejudices continue to damage rather than empower women. In South Africa, the reality is that merely 5 percent of the total number of professors at higher education institutions are black women. And only six of the 26 vice-chancellors at public universities in the country are women.

Discrimination within professional hierarchies and the structure of opportunities for women must be addressed if leadership in the academic careers of women is to be advanced (Letsoalo & Rankhumise, 2020; Liani et al., 2020 & Walker 2020). The South African Employment Equity Act 55 of 1998 regulates the standards and structures of employment within South African institutions. In keeping with the Employment Equity Act of 1998, a transparent recruiting procedure will improve women's participation in and advancement into leadership positions in South African universities. Similarly, gender development and mentoring programmes for ambitious female academics promote the inclusion of women in the leadership structures of South African universities (Liani et al., 2020 & Sadiq et al., 2019). As a result, poor self-esteem is addressed by the implementation of empowerment and mentoring programmes (Isaacs, Strydom & Mbukanma, 2022; Mcilongo & Strydom, 2021). A positive outcome and thus a greater sense of self-efficacy is expected since women's career paths should be unrestrained by institutional norms or assumptions about women, especially black women (Netnou & Strydom, 2020).

5. Research Methodology

In this study, a qualitative research technique was used. A qualitative research technique, in essence, assists researchers to investigate and comprehend the significance of a social or human problem in order to propose answers to real-life socioeconomic difficulties (Creswell, 2014:32). The creation of ideas that assist researchers to comprehend social phenomena in natural (as opposed to experimental) contexts, with proper attention to the participant's experiences, opinions and interpretations of real-life circumstances, is a significant element of qualitative research (Fletcher, 2017:184; McCusker & Gunaydin, 2015). As a result, this study adopted a participatory action research design. Participatory action research entails researchers and people collaborating in order to understand and improve a problematic situation (Fine & Torre, 2019). Participatory action research focuses on social change that promotes diplomacy and challenges inequality; it is context-specific, frequently focusing on the needs of a particular group; it is iterative, involving research, action, and reflection; and it frequently aims to 'liberate' participants by increasing their awareness of their situation and empowering them to act (Husni, 2020; Fine & Torre, 2019).

Walter Sisulu University (WSU), a developmental, comprehensive university with four campuses located in the Eastern Cape was sampled for this study. As a result, 30 permanent academic staff members of both genders (male and female) at WSU were interviewed for qualitative data collection purposes. To analyse the interview responses, the researchers used a thematic approach to data analysis using ATLAS.ti version 9, which helped to categorise the themes that emerged from the participant responses. Given the nature of this research, which included engaging with participants using interviews, ethical clearance was acquired from WSU, with certificate number 2021/01/BCEL/EXTERNAL. The sample for this study was confined to permanent staff members at WSU, which is consistent with the study's objectives and the logistical limitations of collecting primary data during the Covid-19 pandemic. However, it was anticipated that permanent academic staff at WSU would provide the critical data necessary to accomplish the study's goals.

6. Data Analysis and Presentation

Data analysis is the act of assembling and interpreting enormous amounts of data. It involves a complex, time-consuming, innovative, and intriguing process of data interpretation (Lester, Cho & Lochmiller, 2020; Michael & Schucany, 2017). Saturation of responses occurred with the 19th participant out of 30 anticipated participants (permanent academic staff of WSU, including both males and females). As a result, 19 fully completed responses from participants were obtained. In summary, this study relied heavily on the subjective responses of the participants to determine the best strategies for advancing women's academic leadership prospects in a selected South African university.

A thematic analysis was conducted to guarantee that the opinions of each participant were grouped and classified into distinct themes and sub-themes. Thus, the researchers used the processes and methodology established by theme analysis to analyse and present qualitative interview data succinctly. Table 1 indicates the steps and methods in the thematic analysis.

Table 1: Steps and Methods in Thematic Analysis

Step	Method	Explanation
1	Organising data	Questions were numbered, sorted, and prepared for data analysis.
2	Review of transcripts	The researchers reviewed the data to familiarise themselves with the data collected and ensure that the collected data reflected the direction of the study.
3	Stage one coding	Initial emerging themes were labelled and categorised.
4	Stage two final coding	The coding process was used to sort related data, so that related headings with similar content were grouped. These formed the categories under the themes.
5	Representation of data	The findings in the themes were represented through ATLAS.ti version 9 in figures and network linkages, followed by thematic presentations of participants' verbatim words.

To guarantee the utmost confidentiality and anonymity of the respondent, as stipulated in the ethical clearance permission, pseudonyms were given to the respondents who participated in the study (see Table 2).

Table 2: Pseudonyms of the Participants

Participants	Pseudo Names	Job Designation
Participant 1	WSU1	Lecturer
Participant 2	WSU2	Deputy Director
Participant 3	WSU3	Professor
Participant 4	WSU4	Professor
Participant 5	WSU5	Senior Lecturer
Participant 6	WSU6	Senior Lecturer
Participant 7	WSU7	Senior Lecturer
Participant 8	WSU8	Head of Department (HOD)
Participant 9	WSU9	Lecturer
Participant 10	WSU10	Professor
Participant 11	WSU11	Lecturer
Participant 12	WSU12	Senior Lecturer

Participant 13	WSU13	Professor
Participant 14	WSU14	Professor
Participant 15	WSU15	Lecturer
Participant 16	WSU16	HOD
Participant 17	WSU17	Senior Lecturer
Participant 18	WSU18	Professor
Participant 19	WSU19	Lecturer

There are several ways to code data but, according to Deterding and Waters (2021), coding is an approach used to evaluate the transcribed information and categorise it into the relevant unit and sub-unit groups. For theme presentations of participants' verbatim responses, pseudonyms were used to help with the logical presentation of the responses. Following this step, the transcribed data were classified into themes and categories to find ideas relevant to the study's research objectives. The themes and categories of this study are presented below.

6.1 Themes on the Existing Institutional Structures at a South African University that Address the Challenges Women Face in Attaining Decision-Making Positions

This section of the study explores the participants' understanding of the existing institutional structures at the university that address the challenges women face in attaining leadership/decision-making positions. This theme aligns with the study objective that seeks to identify existing structures the university has put in place to advance aspiring women leaders. Thus, participants were asked to provide their views based on their experience, and ATLAS.ti was used to identify the participant's perceptions, as presented in Figure 1.

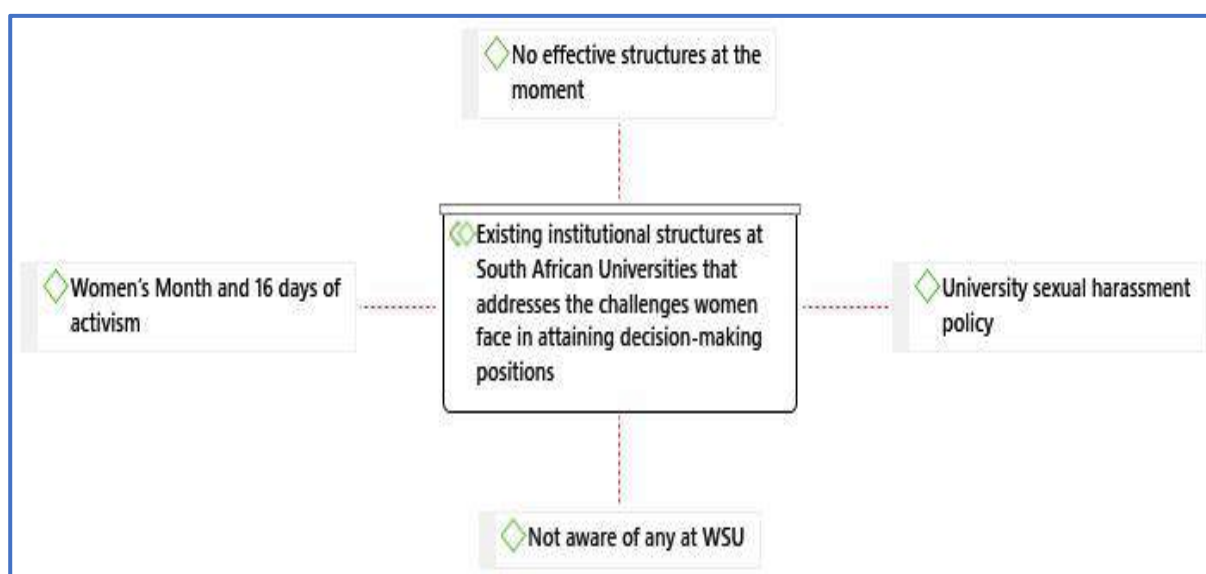


Figure 1: Response to the question about existing institutional structures in a South African university that address women's challenges in attaining decision-making positions

Figure 1 provides a network diagram depicting the participants' views on existing institutional structures at a South African university that address the challenges women face in attaining decision-making positions. It was ascertained from the responses gathered from participants that universities in South Africa, in general, and in WSU, in particular, have no existing structures that help with advancing the prospects of women in academic leadership, besides the university sexual harassment policies. However, some of the participants added that the only time women's interests are considered is during women's month and the 16 days of activism against gender-based violence, which has not

significantly influenced the leadership succession structures of South African universities. See below verbatim extracts from participant comments.

WSU1 said 'it is mostly lip service':

We live in a country where we have a 'Women's Month' and '16 days of activism'. As if the other months and the other days are not important for women, too. Also, the whole 'women and children' dialogue clumps women together with children.

WSU5 said 'none':

I only know of HERS and HELM, which are external structures as resources, but no structure I know within the few universities in South Africa.

WSU6 said 'none at WSU':

There might be limited access to women holding decision-making positions, and even then, they are usually under severe scrutiny.

WSU19 said 'I am not aware of any specific one'.

Hypothetically, there is this assumption that employment equity policies secure and guarantee the representation of all genders within the university community. Perhaps, the question arises whether the employment equity policy has enhanced the succession of academic leadership positions with the inclusion of women. Conceptualising the responses gathered from the participants in this study, it is significant that the university communities have no structures that aid in advancing the prospects of women in academic leadership. This gap in academic leadership structures or policies is in line with the arguments of Moodly and Toni (2019) and Ramohai (2019), who emphasised the notion that proactive structures for women to represent their interests within South African universities are lacking, and that there is an urgent need to resolve this situation by gathering holistic ideas from academics of both genders about the nature of such proactive structures.

6.2 Themes on the Measures to Improve and Sustain the Representation of Women in Leadership Roles in a South African University

This part of the study examined the participant's understanding of the measures taken to improve and sustain the representation of women in leadership roles at the university. This theme aligns with the study objective that seeks to identify ways to advance women's prospects in academic leadership roles at a South African university. Thus, participants were asked to state their opinions about these factors, and ATLAS.ti helped to identify the theme from the participant's responses, as presented in Figure 2.

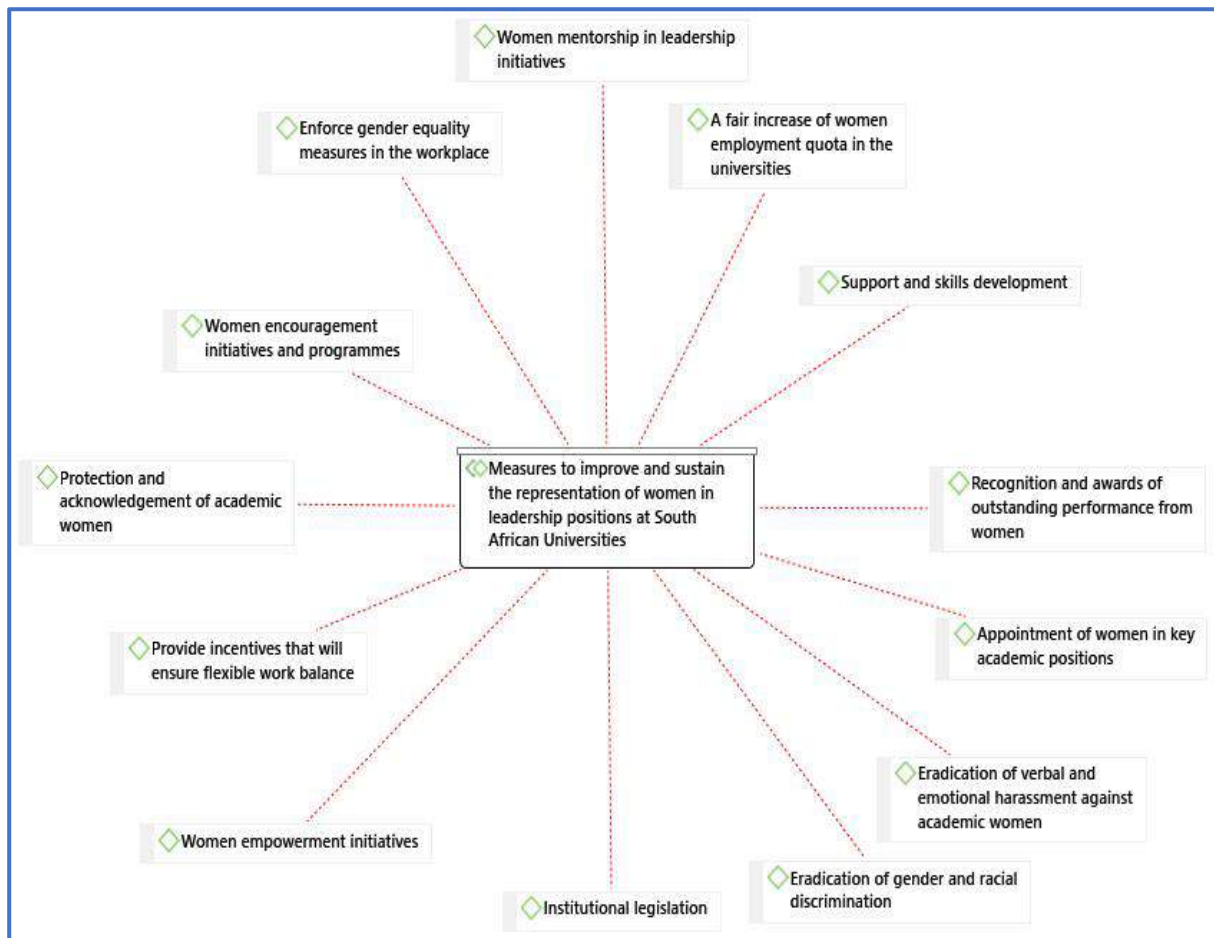


Figure 2: Measures to improve and sustain the representation of women in leadership roles in a South African university

Figure 2 provides a network diagram depicting participants' views on measures that could be taken to improve and sustain the representation of women in leadership roles within a South African university. It was ascertained from the responses gathered from the participants that measures such as eradication of verbal and emotional harassment against academic women; a modest increase of the women employment quota in the universities; women empowerment initiatives; women mentorship in leadership initiatives; the eradication of gender and racial discrimination; recognition and awards for outstanding performance by women; and enforcing gender equality measures in the workplace were mentioned as a vital element for improving and sustaining the representation of women in leadership roles in South African universities. Some verbatim extracts from the participant's comments are presented below.

WSU1 said that:

the perpetuation of the inferiority status of women maintained by the academic institutions must end with redress of the unjust practices. Increase the percentage of women in academic leadership or management positions. Create forums to discuss and address verbal and emotional harassment.

WSU2 said that:

more effort should be made on women empowerment initiatives. Specific policies should be developed in this regard, and women should be groomed for leadership early in their careers. Institutions must also have well thought, sustainable programmes geared towards growing their timber. This could include retaining student leaders and grooming them (through relevant studies and leadership programmes) into future management positions. Furthermore, women should be recognised and awarded for their outstanding leadership.

WSU8 said that:

institutions should develop a policy on 50:50 male to female representation in administrative and senior academic positions just as they have done in parliament.

WSU9 said that:

there is a need to review the existing policies that resulted in women being marginalised or mistreated.

WSU15 said that:

legislation from the institution would aid in this regard and design programmes that equip specifically women in leadership positions with unique skills meant for women.

In line with the views of the participants, Al-Qahtani, Ibrahim, Elgzar, Sayed and Essa (2021) and Avolio et al. (2020) argue that providing incentives that will ensure flexible work balance, support and skills development are essential in the workplace, as well as the eradication of gender and racial discrimination. In addition, women empowerment and mentorship initiatives are vital for improving and sustaining the representation of women in leadership roles in South Africa (Mcilongo & Strydom, 2021). Nevertheless, women also have a responsibility to acquire the skills and knowledge required to prepare them for the possibility of attaining leadership positions in a university (Al-Qahtani et al., 2021; Breeze & Taylor, 2020).

6.3 Themes on the Ways to Empower Aspiring Women Leaders in a South African University

This part of the study examined the participant's understanding of empowering aspiring women leaders in South African universities. This theme emerged from the study objective which sought to ascertain ways to empower aspiring women leaders at the university. Participants were asked to provide their views in this regard and the use of ATLAS.ti helped to identify a theme from the participant's responses, as presented in Figure 3.

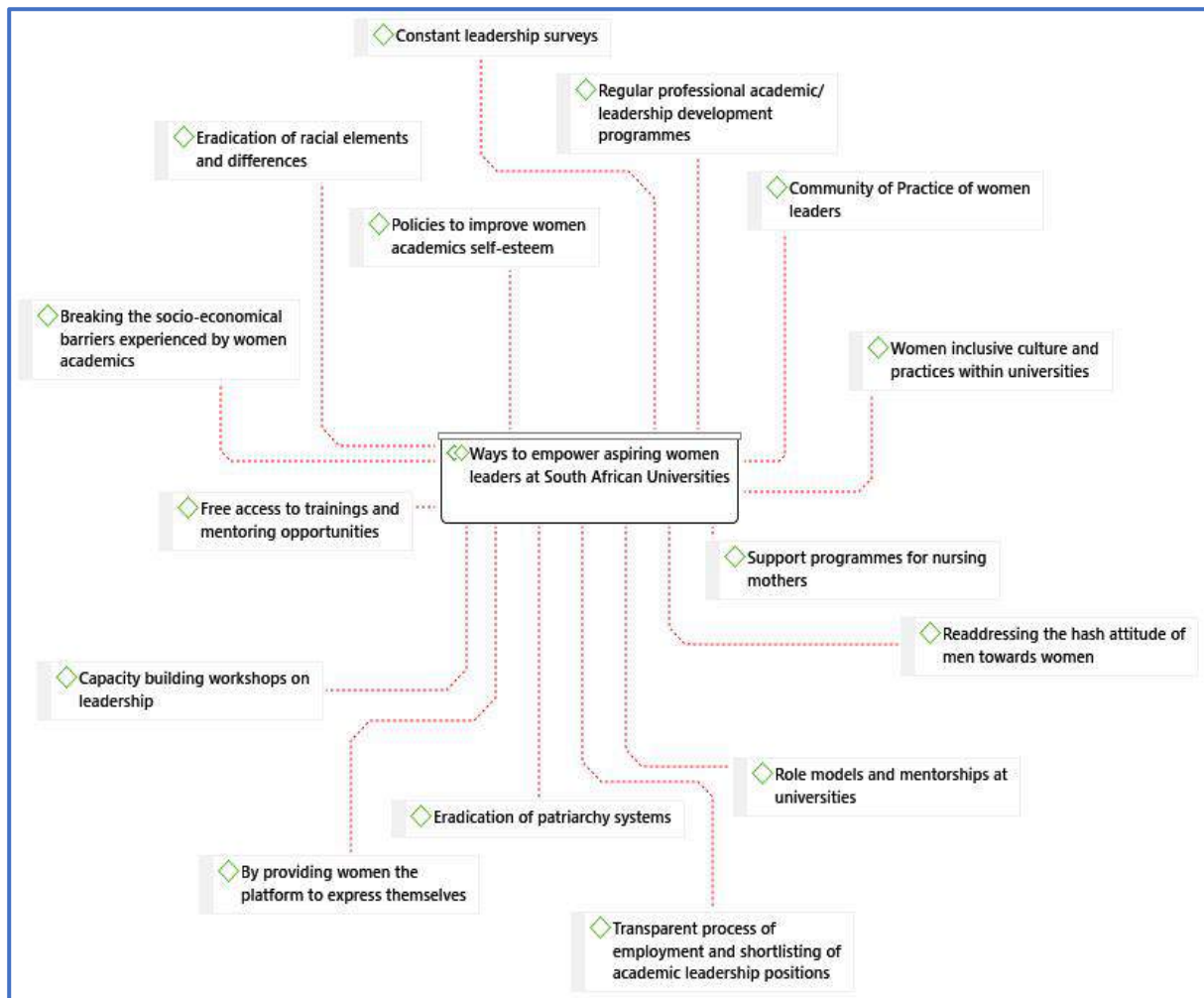


Figure 3: Ways to empower aspiring women leaders in a South African university

Among other mechanisms to empower aspiring women leaders in a selected South African university, as depicted in Figure 3, emphasis was placed on free access to training and mentoring opportunities; the breaking down of socioeconomic barriers experienced by women academics; policies to improve the self-esteem of women academics; the use of role models and mentorships by universities; addressing the hash attitude of men towards women; and support programmes for nursing mothers. However, it was also ascertained that the institutions, the government, and women, themselves, as individuals, have a role to play in empowering aspiring women leaders in South African universities. Some verbatim extracts from the participants’ comments are presented below.

WSU1 said that:

breaking the socioeconomical barriers experienced by women academics will not happen overnight. There is much resistance to change, clearly visible in many academic institutions, where women continue to be undermined and denied leadership positions. Women who aspire to leadership positions must show determination, perseverance, courage, and patience. Role models and mentors can help mould and empower the young generations of women leaders.

WSU3 said that:

women should partake in mentoring other women. This is difficult, as there are few women, especially at our institution (WSU). They should be encouraged to apply and know that they will not be undermined by men in their departments/divisions when they are appointed. As far as I am concerned, having women in leadership positions will not work until the men change their attitudes.

WSU6 said that:

there must be some severe amendments on the parts of the HEI's systems. I would advocate that the critical starting point is the recruitment stages; the adverts must be clear and directly target women; the shortlisting processes should be more transparent, especially as most shortlisting and interview panels are male-dominated. It is also important to take cognisance of institutional culture that primarily reflects SA patriarchy systems with its beliefs, values, and norms. Whether acknowledged or not, there are still racial undertones and differences of whether it is 'white woman or black woman' in decision-making positions; and the institution concerned.

WSU7 said that:

women need to freely access training and mentoring opportunities and regular professional academic/leadership development programs.

WSU10 said that:

it is vital to provide capacity-building workshops with topics relevant to women's struggles in leadership.

WSU13 said that:

there is a need for a community of practice of women leaders who share their experiences and challenges with other women to come up with solutions and plan for succession from women to other women. Continued leadership surveys to identify challenges for both men and women so that aspiring women leaders can learn.

The role of the university communities in empowering women towards attaining academic leadership positions cannot be overemphasised. As Breeze and Taylor (2020) and Moodly and Toni (2019) rightly posit, the starting point to establish women's interests in the workplace is at the employment stage. This assertion implies that the employment process must be transparent, properly recognising fair employment quotas allocated to both males and women. Perhaps, when a fair opportunity is given to both men and women, advancing to compete for academic leadership positions would be reconciled with gender equity (Liani et al., 2020; Naicker, 2013; Mazibuko, 2006).

7. Key Findings and Managerial Implications

The objective of this study was to find measures to advance the prospects of women attaining academic leadership positions in a South African university. The outcome of the literature review and the data gathered from the participants revealed that a concerted effort on the part of women as individuals, universities as institutions and the government is required to advance women's academic leadership prospects in South African universities. The key findings and managerial implications are listed below:

- **Existing institutional structures put in place to address the challenges of aspiring women leaders:**

The findings of this study revealed that there is virtually no existing institutional structure (with regard to the scope of this study) in place to address the challenges women face in attaining decision-making roles in academic leadership. However, some of the participants added that the only time when women's interests are considered is during special women's day celebrations or events by women's rights movements, neither of these activities have significantly influenced the leadership succession structures in academia. As a result, although it is evident that there is a gap in academic leadership succession structures in South African universities, the establishment of proactive structures and policies for women to promote their interests inside South African universities is recommended. Hence, there is an urgent need to resolve this impasse in order to acquire comprehensive and equal input from members of the various genders involved in academic leadership and decision-making.

- Measures to improve and sustain the representation of women in academic leadership roles:**

In ascertaining the views of the participants in this study on the measures required to improve and sustain the representation of women in leadership roles in a South African university, considering the existing limited number of women in the leadership and decision-making structures, the following action should be considered by management: measures such as the eradication of verbal and emotional harassment against female academics; women mentorship and leadership initiatives; eradication of gender and racial discrimination; recognition and awards of outstanding performance of women; and the enforcement of gender equality measures in the workplace are recommended as vital measures for improving and sustaining the representation of women in leadership roles at South African universities.
- Ways to empower aspiring women leaders at a South African university:** Empowering aspiring women leaders in academia is a complementary dimension to the other measures required for advancing the prospect of women in academic leadership and decision-making positions. Accordingly, the findings from the study revealed that management should implement mechanisms, such as free access to training and mentoring opportunities; assist in breaking the socioeconomic barriers experienced by women academics; offer programmes to improve the self-esteem of women academics; provide role models and coaching programmes at universities; assist in readdressing organisational culture, especially the harsh attitude of some men towards women; and implement support programmes for nursing mothers. All these initiatives could aid in the advancement of women and would be significant in the empowerment of aspiring women leaders at a South African university.

8. Conclusion

Prospective academic women encounter gender inequities, under-representation and numerous hurdles in attempting to advance their academic leadership and decision-making careers. Previous researchers have investigated these barriers faced by women in academia. The aim of this research was to determine ways to advance the prospects of women attaining academic leadership positions in a South African university. To achieve this, a qualitative research approach was adopted, with careful adherence to the participation action design, which serves as the study's foundation. Qualitative interview responses were collected from permanent academic staff at WSU and analysed. From the findings of the analysis, the researchers recommend that the generalisation of the findings of this study should be treated with the utmost care, since the study's findings remain within the scope of the sampled population.

This study was able to build in-depth knowledge on the theoretical approach and previous authors' contributions on the subject of the advancement of women's leadership in South African universities. Accordingly, the findings of this study revealed that a significant gap exists in the structures designed to advance and promote the prospects of women towards attaining leadership positions. In closing this gap in academic leadership succession structures, measures such as women's mentorship in leadership initiatives; the enforcement of gender equality measures in the workplace; the appointment of women in key academic positions; the provision of incentives that could ensure flexible work balance; the eradication of gender and racial discrimination; and the eradication of verbal and emotional harassment against academic women are recommended.

The findings also revealed that advancing the prospect of women in academic leadership requires empowering them with the requisite platform from which they could promote their ambitions. In line with advancing aspiring women in academic leadership, measures such as the transparent process of employment and shortlisting of academic leadership positions; regular professional leadership development programmes for women; a community of practice of women leaders; a women inclusive culture within universities; free access to training and mentoring opportunities; programmes to improve the self-esteem of women academics; role models and coaching opportunities; and support programmes for nursing mothers were ascertained as ways to empower aspiring women academic leadership in the selected South African university.

“I’m no longer accepting the things I cannot change..... I’m changing the things I cannot accept.”
Angela Davis

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Date of access: 22 January 2022.

A Conceptual Framework to Improve Efficiency within a Public Health Facility

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Keywords

Cost efficiency;
wrangling data

Abstract

The literature reiterates the complexities in healthcare management due to multi-factorial influences, variables, and differences within healthcare ecosystems. What many before grappled with is how to determine if a Public Health Facility is delivering services efficiently. Is the existing indicator measuring cost per patient day equivalent (C/PDE) sufficient to draw conclusions or applicable for decision-making purposes? Should other indicators also be considered simultaneously? The link between performance indicators and the budget process remains limited and could be strengthened. If these links can be established through the wrangling of data, a more scientific way of budget allocation for specialist-specific services on a like-to-like basis might be possible. This exploratory study's primary purpose is to determine if the available electronic systems can monitor specialist hospital efficiency. A mixed method is applied to determine if the wrangling of data leads to improved quality information. A conceptual framework based on specific operational management and supportive financial activity and clinical productivity per specialty can guide the way to efficiency measurement of hospitals in South Africa. The guiding principle will be that general management and health specialists should be equally involved in the process, narrowing the gap between administration and clinical expertise.

1. Introduction

Access to healthcare in South Africa is a human right as stipulated in the South African constitution Section 27 1. (a) (Act No 108, 1996). While the average life expectancy increases at a steady pace of 0,4% per annum as reported in the United Nations World population trends, the burden of disease is increasing in size and complexity, and the consequent patient demands on the service platforms are escalating. This increasing demand on the health system, asks for extensive budget allocation to be realized. Hospital management is known for its complexity as very few hospitals can be compared due to the differences in services delivered and population needs. Acknowledging the economic situation of South Africa and the depreciation of the Rand value against international currencies, there is a need to figure out the cost efficiencies of curative hospital-centred healthcare. The health department must operate within an environment of competing needs for limited resources (Engelbrecht, 2016). Leleu *et al.*, (2018:34) reported that with the rise in healthcare spending worldwide, there is a strong incentive to better understand healthcare spending.

As part of the transformation of the Health System in South Africa that started post-1994 and with the promulgation of the National Health Act of 2003, integration of the previously fragmented health departments was initiated. One aspect was the implementation of District Health Systems (DHS). District health systems are aligned with the 3 tiers of Government in South Africa: National, Provincial, and Local. Each district health management team is responsible for the delivery of health services to a specific geographic area and its population.

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Four years ago, the Western Cape health department realigned Regional Specialist level 2 (L2) hospitals to resort under the management of either the metro or rural health services directorates. Previously, specialist services and hospitals were clustered under one directorate with Emergency and Forensic services. The purpose of the de-clustering was to further integrate L2 hospitals to form part of the DHS and the geographic area or ecosystem they serve. This results in all the L2 hospitals having a PHC responsibility towards the sub-district population where they are situated. Chikobvu (2016:146) mentioned that providing lower-level care at a higher-level institution is inefficient as the cost provision scale is higher. The possibility exists that through the NHI, services may be purchased from both the public and private health sectors, raising questions about the relative pricing between the two sectors (Ramjee, 2013). This further emphasizes the need to determine the underlying cost of services despite the different models applied in the public and private health sectors in South Africa.

The South African National Treasury adopted the indicator logic model. This logic model is also embedded in the Policy Framework for the Government-wide Monitoring and Evaluation System. The indicators that focus on hospital efficiency include, ALOS (average length of stay), BUR (bed utilization rate), and Exp/PDE (expenditure per patient day equivalent). Ratio measurement seems very easy but does have some pitfalls. Ramjee (2013:9) also mentioned that ratio analysis is relatively easy to apply but the single-input and single-output scenario is unlikely to happen in any hospital environment. Chikobvu (2016:54) reported that managers in the public health sector's use of hospital efficiency indicators are currently strained, unlike their counterparts in the private sector. Although data is collected regularly, the interpretation of patterns is seldomly understood.

Apart from the DHIS software, there are numerous electronic systems in the Western Cape Health Department. For hospital services, there are the patient administration system, Clinicom, the pharmacy administration, and dispensing system, JAC, and the PACS/Ris radiology system are but a few of many. None of these electronic systems are interoperable and all function as standalone systems. An electronic software system, the FBU (functional business unit) Dashboard, was created to serve as a platform to receive raw data from different systems and aggregate and process data to give hospital performance information. This software package organizes raw data according to geographic areas in hospitals and provides ratios with multiple inputs and outputs that are not organized per clinical specialty and thus not meaningful for management information for decision-making, as per the defined management roles and responsibilities. The focus of this study was on applying a different approach to the use of the FBU application. Wrangling data as described by Westraadt *et al.*, (2019:334), is the process of mapping data, and transforming data to make it more appropriate and valuable for analysis.

2. Problem Investigated

Primary healthcare is the cornerstone of universal health coverage as again underpinned by the United Nations National Assembly in 2015. Despite the focus on PHC and taking the service to the people in South Africa and specifically, the Western Cape province, the majority of the provincial health budget is still funding hospi-centered curative care. The implementation of the DHS realized a vertical integration of services to address the patient care pathway. This may have resulted in specialist services covering PHC services. With that said, it is unknown how much primary health care is provided by L2 hospitals rather than by primary healthcare platforms and L1 hospitals. Although numerous national data include output, outcome, and health impact of services, apart from the efficiency indicator Exp/PDE, no further proof is evident that other available information is used for budget allocation towards specialist services. It has been noticed that efforts to improve the quality of population health maximization and resource measurement shift the focus to be directed at data collection for the sake of compliance (Chikobvu, 2016:1). A situation where a lot of data is collected but never fully utilized is indicative of a knowledge gap or possible opportunity.

In a resource-strained health environment, the “one size fits all“ allocative and technical efficiency should be reconsidered. Suppose a sole purchaser is to be established using the NHI finance model. In that case, it is of utmost importance to enable the efficiency measurement of specific specialist activities on a like-to-like basis between hospitals. The separation of variable and fixed costs during

the expenditure monitoring should be of value while a specific value to the personnel or medical staff component is separately available. No solution or system has been developed, connected, or tested so far that contributes to the position that enables public health facilities to measure efficiency per speciality service. What is available are standalone electronic information and operational systems, each developed to address single aspects of public health or performance, not interoperable, and with little management information ready for decision-making or planning purposes. Purportedly health managers in South Africa are not adequately capacitated and skilled to manage facilities (Michel, *et al.*, 2020:2). The question of whether health managers have intelligent information to make decisions, plan, monitor, and control has not been answered yet. While McIntyre and Ataguba (2017:31) mention the lack of decision-making authority at the operational level, Leleu *et al.*, (2018:36) argue that managers in non-competitive markets are not as motivated as their counterparts in competitive markets to increase efficiencies.

No evidence could be found of a scientific approach to public health hospital budget allocation based on operational performance (outputs) on a like-to-like basis. Maphumulo and Bhengu (2019:7), and Coovadia *et al.*, (2009:832) indicated that further efforts and studies are needed to assess the efficiency of strategies that are used to evaluate healthcare outcomes and improve the stewardship and management of the health systems. In the health market inquiry, competition commission report of 2017, it is clearly stated that there is an asymmetry in South African health care with inadequate health information, making it difficult to understand and compare services and facilities.

3. Research objectives

The primary objective is to investigate if wrangling, which is described as mapping and re-organizing information (Westraadt *et al.*, 2019), can lead to improved information for decision-making at an operational level, enabling hospital managers to execute their managerial roles as accountable persons within a health facility. A second objective would be to determine if this application will result in improved cost efficiency and reduce wastage.

4. Literature Review

4.1 What measures are available to determine hospital efficiency?

Donabedian (1989) recognizes Ernest Codman's 1910 contribution to quality assessment and beyond and for his central role in "the end results" idea. Codman advocated for monitoring as we know it today as health outcomes and the standardization of hospitals. Donabedian describes how Codman saw the end result idea becoming the vital link between the science of medicine and the science of management (1989:242). It is emphasized that the contribution to the desired end results should determine how money is spent and how hospitals are managed (1989:246). The South African National Department of Health issued notice 667 of 1997, wherein Chapter 6 is dedicated to Health Information. One of the major obstacles that prevented effective health service planning in South Africa was reliable information. A priority was thus given to the establishment of a central health information system. In 1994, a committee National Health Information System for South Africa (NHISSA) was established to develop a central health information system to support the effective delivery of services and monitor the implementation and successes of priority programs.

The National Department of Health, District Management Information system policy of 2011 reports that the Committee for NHISSA issued the first data set for PHC in 1999. The district health information software was adopted for collection, capturing, storage and analysis. This is referred to today as the DHIS. Over time it was expanded and now includes the PHC data, hospital information, and priority program data sets. DHIS data and information contributes to the planning for health service management. There are also weaknesses identified in the system that contribute to compromised data quality and sub-optimal use of data and information.

National Treasury issued a Framework for Managing Programme Performance Information in 2007 (NT, 86/2007). This document discusses key performance indicators and their use to measure performance against input, process, output, outcome, and impact. The purpose of indicators is explained, and emphasis is placed on the need to have a thorough understanding of the nature of

inputs, processes, and outputs as well as knowledge of the desirable outcome and impact. The following figure is used to demonstrate the relationship between the performance concepts.



Figure 1, Logic model - Indicators of economy, efficiency, effectiveness, equity (NT 86/2007:7).

The Treasury Framework further gives clear criteria for indicators that include, reliability, verifiability, well-defined, cost-effective, appropriate and relevant. The logic model is used to demonstrate the conceptualization of efficiency, economy, effectivity, and equity. The Department of Planning, Monitoring, and Evaluation (DPME) is a statutory institution within the presidency since 2011 and is charged with the task of monitoring and evaluating government delivery and performance. At an operational level such as a hospital or health facility, the focus will be on the lower 3 parts of the logic model, inputs, activities, and outputs. Economic efficiency which includes technical and allocative efficiency at the operational level is thus of importance and the investigation focus of this study.

Key performance indicators are used globally to measure access to health, equity in health, and health financial expenditure (Leeder, 2016:22). The use of indicators to measure managerial and clinical processes, and financial performance of health systems or units, is by now deeply entrenched. Wronski (2021:10) found in a study with a geographic approach, applying the Delphi method during an online survey, that participants only used indicators that were relevant to them and understandable. It is further stated that a kind of “indicator chaos” can be observed, mainly due to the high number of sector-specific indicators and data (Wronski, 2021:2). Leeder (2016:23) made a statement that policymakers should be asked how performance indicator data are being used in practice. There are lessons to learn from leading countries such as the United Kingdom and many problems can be avoided by, for one, making use of “soft” data to assist with interpretation.

As already mentioned, South Africa introduced the use of indicators in the public health sector in 1999. The National Indicator Dataset (NIDS) like any other indicator framework is complex as they are structured and grouped according to multiple dimensions according (Chikobvu, 2016:35). This structuring is according to the logic model, global and local health priority programs such as maternal health, HIV/Aids and TB. The main purpose of any indicator is to act as a standardized method of measurement, either an input, activity, or output as per the logic framework or for the outcome or impact measurement. Indicators should further aid managers in the execution of their managerial functions and responsibilities. Chikobvu (2016) emphasized the situation where hospital managers receive voluminous data sets monthly, but still, need to extract the strategic information they need for decision-making. It is also reported that empirical literature on evidence-based management and decision-making processes in the public health sector is sparse. The fact that public health facility managers still need to extract strategic information from raw data, may be attributed to this reported sparsity (Chikobvu, 2016:73). Not much is known about the inferences drawn, patterns, and other managerial use of indicator data.

In the NIDS (2017), four indicators are grouped under efficiency indicators. ALOS, BUR, C-section rate, and Exp/PDE. Three of the indicators are operational or activity proxy ratio indicators, while the fourth indicator is a financial resource input vs. patient day output proxy ratio. Ramjee (2013) confirmed in his commissioned report that productivity ratios are an acceptable measure of an entity's performance, it has the advantage of being simple to apply and supplying useful information on a day-to-day managerial level. Three of the four indicators are assumed to be under the management of the facility's control, while the C-section rate is a clinical activity ratio. These four indicators and many more are reported monthly and form part of a facility's monthly routine performance data in totality. Situations arise daily or weekly where a sudden clinical care pressure or surge asks for an urgent bed availability due to overpopulation (100%+BUR) in a specific specialty while another clinical specialty may experience low bed occupancy (65% BUR). The aggregated proxy ratio will be 81% BUR and is still below the recommended 85%. In a case like this, a quick decision should take place to re-allocate beds within one facility between specialties. On hand, daily summaries or live data in the best circumstances will be able to assist with decision-making.

The requirements for using proxy ratios to measure productivity are homogenous input and output measures, which are difficult in complex multiple input and output measure scenarios. No empirical inference could be found of proxy productivity ratios applied for comparative measurement of specific specialties. ALOS or average length of stay is dependent on the reason for admission. The baseline for specialties differs where a patient under the care of a physician may stay on average 4,5 days, a patient in the orthopaedic department may stay for 6 days, and an obstetrics patient for 3 days. The hospital ALOS proxy score will be 4,5 days. The score of 4,5 days is not meaningful for decision-making if the individual ALOS is not known.

It is reported by Leleu *et al.* (2018:33) that improving efficiency only by increasing the output or lowering the input is of no value to healthcare as it does not address the maintenance or surety of quality. It is also emphasized and noted in the literature that the need to control or lower costs, while quality is accounted for has become an urgent, complex problem (Leleu *et al.*, 2018; Ramjee, 2013).

Various methods have been found in published literature, described, used, and applied to determine the efficiency in hospitals. Some include the "ingredient approach" an economical approach to estimate future costs (Olukuga, 2007:144). A step-down costing method was also applied to establish a cost per patient day (Than *et al.*, 2017:1). Several studies were found that applied the Pabon Lasso model to compare the outputs of different hospitals using proxy indicators. But the majority of studies used the Data Envelope Assessment (DEA) and variations thereof, with or without the Stochastic Frontier Analysis (SFA). Amado *et al.* (2020:1256) found an inference that both the DEA and SFA are the most widely used methods to assess technical efficiency in health systems. The reporting of DEA as the most popular mathematical method is also confirmed by Omrani *et al.*, (2022).

The Data Envelope Assessment is a mathematical programming technique that can be applied to measure the relative performance of several similar or homogenous decision-making units (DMU) (Surange, 2019:3). The DEA method was developed by Charnes *et al.*, in 1978, originally for the production industry (Simoões & Marques, 2009:41). Non-parametric linear data is used to build a technical frontier to establish a benchmark that can be used to measure other production lines. This mathematical method aims to determine the efficiency with which a DMU used the available inputs to produce a certain output. The measurement is relative to the DMU that performs the best or shows itself to be the most efficient in a group. The rest of the DMUs will be scored relative to the best-performing unit. The best performing unit will be assigned a score of 100% and the other comparing units will be assigned a score between 0 – 100% (Surange, 2019:3).

Omrani *et al.* (2022) confirm that the conventional DEA model is unable to consider uncertainty in input and output data. Small perturbations in data can cause big changes in the DEA approach's feasibility, ranking, and evaluation. To use the DEA on an annual or quarterly basis to assist with management decisions at a facility level is not possible. The credibility of the mathematical method deteriorates over shorter periods, adding to this, less data cannot compensate for the sensitivity of the

slightest perturbations. It is stated by Amado *et al.* (2020:1256), that both the DEA and the SFA address efficiency with a very naïve view, considering only the flow between input and output. The complexity of hospitals with multiple variables influences contributes to the agreement with Amado *et al.*, (2020:1256), that the application of the DEA and variations of linear non-parametric approaches to decide efficiency are naïve and not fit for purpose in this study.

Another method regularly applied is the Pabon Lasso model. It was originally developed by Pabon Lasso in 1986. This model applies 3 indices or key performance indicators, ALOS, BOR, and bed turnover rate (BTR), and given a mathematical correlation are then plotted on a graph divided into 4 quadrants by perpendicular lines derived from the average BOR on the X-axis and the average of the BTR on the Y-axis. Caution should be applied when using the average or the mean during the construction of the perpendicular lines as outliers of overly long stays in specific specialties may skew the outcome of other participants (Mehrtak *et al.*, 2014:108).

Applying the Pabon Lasso model is a well-tested and proven method to portray a graphical picture of hospitals based on their efficiency according to the 3 indices. The model, however, does not address the economic impact or provide measures speaking to the economies of scale. This confirms the recommendation of Aloh *et al.* (2020) that this method should not be used on its own, results cannot provide detailed information or confirmed reasons for the determined performance. The model can address the comparative measure of performance efficiency if it is possible to create a situation where specialties can be compared on a like-to-like basis and not hospitals per se. The economic efficiencies of specialty departments will, however still not be measurable.

Another method applied to group or cluster specialty activities is the Diagnostic-related Groups (DRG) system. The DRG system is the most used grouped package to determine activity and a payment method for services provided but not applied to measure efficiency. DRG was originally developed in the 1970s as an information tool (Ensor *et al.*, 2009:6).

Ensor *et al.* (2009:6) give a very clear description of the development of a DRG system to cost. Firstly, the cost of illnesses in specific major diagnostic groups is done. Illnesses or episodes are rather grouped per major diagnostic group as per the clinical department. The reason is that the same illness or episode may happen or get treated within another clinical department as well. The International Classification of Diseases (ICD) version 9 or 10 is mostly used to classify incidents. Criticism of the DRG system as a reimbursement or billing system is the complexity of the many options within the coding system. Only clinicians are allowed by law to make a clinical diagnosis, usually in the clinical notes, and administration staff performs the capturing of codes for billing purposes. Ensor *et al.* (2009:7) reported a 7-14% abuse of the DRG system or “DRG creep” where the DRG classifier or case manager becomes more important than the clinician. The main aim of the DRG system is to improve revenue generation and act as a costing model.

The public health sector in South Africa does not currently use a DRG system, but clinicians in this sector are expected to provide ICD 9 and 10 codes for diagnosis and treatment procedures. Compliance with the ICD 10 coding is not near 100% compliant and may compromise the application of such a system. If the use of the DRG system is an option on the table for South Africa, careful consideration should be given to pitfalls. A possible focus shift from quality and value for patients to revenue collection to artificially increase the cost for claims from a central purchaser to increase budget allocations.

4.2 Why is it necessary to have reliable information?

According to the Mintzberg management theory, management roles can be grouped into three overlapping groups (Smit *et al.*, 2007:15): interpersonal, information, and decision-making. It is explained that managers need to use the information available to introduce new ideas or restructure an organization to solve problems and allocate resources to allow for efficiency.

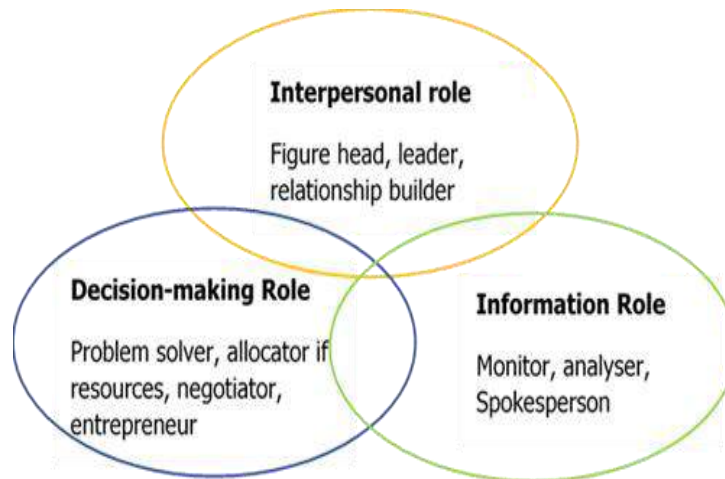


Figure 2. The overlapping role distribution of managers (According to Mintzberg) Smit *et al.*, 2007:16

Pacheco Junior and Gomez (2016) conducted a qualitative study using open interviews and applying the Method for Interpreting Meaning (MIM), based on hermeneutic-dialectical principles that seek to interpret meaning. Their purpose was to establish the decision-making of senior managers during the application of change projects that covers clinical management in Brazilian hospitals. They specifically wanted to gain an analytical understanding of innovation in hospitals or develop a new perspective of management in a hospital environment (Pacheco Junior & Gomez, 2016:2486). They reiterated that managers should not only be knowledgeable in technical scientific and predictable aspects of their organizations but should also be knowledgeable about the informal and unpredictable factors in their organizations. It is further highlighted that the decision is inseparable from the decision-making process, and action and information analysis are needed in the process (Pacheco Junior & Gomez, 2016:2487). They further found that most managers in a hospital setting had to deal with problems very quickly, and most managers use technical rationality for their decision-making. In their recommendation, they state that hospitals need more autonomy in decision-making.

Beley *et al.*, (2021) in their study on knowledge management and decision-making in Ethiopian hospitals stated that knowledge management is key to achieving and sustaining hospital efficiency. They applied a qualitative design, using an ethnographic methodology within an interpretive paradigm. They report that knowledge management is central to product-, and process innovation, and executive management decision-making. And therefore, the success of an organization depends on knowledge management (Beley *et al.*, 2021:3). It is also reported that a substantive amount of literature is available on knowledge management but there remains a gap in how administrative knowledge and clinical knowledge in hospitals can be aligned. Their survey confirmed that there are no methods or techniques to manage knowledge in hospitals. Due to this, decision-making processes in hospitals are not well supported with well-managed knowledge.

The notion that knowledge is not well managed, is supported by Alfawaz and Alharthi (2019) in an analytical descriptive study. In the conclusive remarks, it is stated that there is a statistically significant relationship between the retrieval of data for decision-making, both for administrative and clinical purposes. Health information should thus be available for decision-making. A health information system on its own will not improve efficiency, there is a need to develop an integration of systems (Alfawaz & Alharthi, 2019:65).

4.3 How can integrated information be attained

Muinga *et al.*, (2020) surveyed the levels of IT system adoption within public sector health facilities in Kenya. They indicated that hospital managers name financial accountability as their primary motivation for purchasing electronic systems. Seamless data exchange is essential for data integration. The success of interoperability depends on senior management's position on HL7. HL7 or Health Level 7 refers to a set of international standards for the transfer of clinical or administrative data between software applications. If this standard is not available, data exchange cannot happen from a

patient administration to a laboratory software system or backward for example. Usually, the billing system is the only system that does have the HL7 standard in the software package. Recommendations by Muinga *et al.*, (2020) mainly focussed on solutions including digital health systems that may improve the quality of health for patients. No empirical inference was found where HL7 standards were applied to provide an improved monitoring system that can also provide insight into economic efficiency or assist hospital managers with decision-making. Cashin *et al.*, (2017) indicated that the many standalone electronic systems such as the cash-based basic accounting system (BAS), a separate payroll (PERSAL), and a separate logistics systems (LOGIS) that is inoperable, make it difficult to aggregate and analyze data. It is also noted that due to the inoperability, it is difficult to predict the demand for services. The inoperability also makes it difficult to identify and reward efficiencies. Most countries, move away from provider or input-based budgets to purchaser or output-based budgets such as capitation or case-based methods. To achieve this, interoperability is of the essence.

The Western Cape government health has developed a dashboard to provide integrated information for managers at an operational level. It was developed by Ernst & Young in cooperation with the department in 2012. The dashboard approach was a model developed from a cost center department, aligning wards or geographic areas in a hospital to capture all financial and patient activities per ward. This dashboard, however, can't provide accurate information per clinical speciality.

4.4 Why is it necessary to wrangle data to get the right information

Empirical inferences were found in the literature that refers to the leadership and governance competencies in the public sector and that knowledge and skill among managers are still inadequate and contributing to x-inefficiencies (Michel *et al.*, 2020; Christian & Crisp 2012:734; Chikobvu, 2016:48). “The increase in the cost of inaccurate costing information and the decrease in the cost of operating more complex cost systems created a demand for more accurate product costing systems to be developed” (Botha & Vermaak, 2015:520). Ensor *et al.*, (2009) confirm this statement by indicating those past supply-driven methods where capacity and historic utilization are used and penalizing more efficient use by reducing budgets from those that can provide the same services but using fewer resources. Christian and Crisp (2012) refer to Leibenstein's comment from 1979 that incentives form part of the external measures that motivate individuals to increase their performance.

In their qualitative study to review the seminal work of Leibenstein, Christian and Crisp (2012) linked Leibenstein's theory to a modern-day complexity theory. It is recommended that more qualitative research is conducted to investigate the emergence of x-inefficiency in the public health sector in South Africa. The lack of an external measure to motivate hospital managers to increase economic performance may be a contributing factor. Ensor *et al.* (2009:1) reported that more countries outside the OECD countries are asking for formulae-based budget allocation. The basis for most formula allocations is proxy measures of need and the population of the catchment area. One of the key concerns about the fee for service payments is the possibility of “over-servicing” and the risk is shifted to the payer or insurer. With a third party responsible for purchasing services, there is no incentive for the patient or provider to limit or restrict the services to only the necessary. Ensor *et al.* (2009:5) further caution that payment for services rendered by a third party is cited as the major contributing factor to the escalation in health costs and notably so the United States. Case-based payments, such as the DRG model, have become increasingly popular to cap the excessive inputs and activities in a fee-for-service system. In a simpler form, the purchaser or provider may develop packages that are all-inclusive of treatment related to a specific procedure or condition. These case-based payments can be taken a step further and also be according to specific clinical departments (Ensor *et al.*, 2009:5).

Literature confirmed that statistical non-parametric and parametric mathematical methods do not fit to develop a framework for short-term decision-making at an operational level. Applying the DRG model on its own, will not necessarily measure cost efficiency but rather just record activities and assign a cost to the services provided. The underpinning principle applied in the DRG model of clustering services per clinical intervention together with key performance efficiency indices applied in the Pabon Lasso model can be applied to establish a conceptual framework for shorter-term

monitoring and decision making. The need for information and an easy way to monitor health activities on a day-to-day is possible with proxy indicators (Ramjee, 2017). At the same time, the science of medicine and management can be linked (Donabedian, 1989:242) in a framework that enhances decision-making. This will only be possible if mapping and organization of data can happen via a digital platform to compensate for the lack of HL7 messaging between standalone electronic systems.

5. Research methodology

The methodology used in this study is underpinned by the Theory of Change (ToC). The ToC is a pragmatic framework that describes how interventions affect outcomes or outputs. To apply complex interventions, the evaluator does not only need to understand whether but also why and how an intervention has an impact on results. Previously, the evaluation of complex interventions was criticized for not providing clear explanations on how interventions lead to real-world impact and for not examining how the interventions interact with context. ToC is a theory of how and why it works. (De Silva *et al.*, 2014:2). Logical frameworks, on the other hand, are rigid frameworks with inputs, processes, outputs, outcomes, and impact assumptions with indicators to measure success and milestones. This framework, however, does not make provision or necessarily explain how different components work together or impact the causal pathway to achieve impact nor link the activities to outcomes (De Silva *et al.*, 2014:3)

An explorative study was conducted applying a mixed method to determine the experience of stakeholders involved and do a comparative analysis of data before and after interventions were applied. A strategic focus on quality data capturing started in 2013 and went into 2014. The phased approach to mapping data and systems started in 2015. It was realized that the central system coordinators were doubtful and coding was not implemented as requested for fear of losing historical data. In 2017, refined coding took place. Secondary data from existing electronic systems were used for analysis while open interviews were conducted with stakeholders after full implementation.

The FBU dashboard was used as a digital platform to wrangle data according to clinical specialities or cluster groups, a principle borrowed from the DRG method. The principle from the Pabon Lasso to plot efficiency indices was also applied to compare data from before and after the changes were implemented to note any changes in performance outputs. The efficiency key indicator Exp/PDE was just used as a comparative proxy measure to determine the economic impact of the changes that were affected. The starting point was to sanitize the coding on the Clinicom or patient administration system. Each clinical speciality was given its unique identifier code, also referred to as the functional business unit (FBU) code. The same was done to supporting functions in the hospital with a specific Central management identifier to accommodate overhead or fixed costs. Clinicians have been involved in specifying the information they would prefer to receive on the services they deliver. Each FBU was then divided into the following sub-sections on Clinicom, making provision for inpatients, outpatients, and an administrative function.

Some specialities indicated the need to have sub-sections under their outpatient component as specific outpatient clinics are expensive and labour-intensive services, such as cardiology clinics. The next step was to sanitize the Logis or supply chain interface system, allocating a unique identifier to each Clinicom code. This will enable any financial activity for procuring goods and services with a specific FBU, whether inpatients or outpatients. The same steps were followed for the following systems as well. The JAC or pharmaceutical dispensing and warehouse system. Linking JAC activities with specific specialities within inpatient or outpatient departments. Linking the PACS/Ris or radiology picture imaging and information system, all requests and images were also linked to an FBU.

The NHLS or laboratory services and WCBS or Western Cape Blood services are systems outside the Department of Health's control, but through the unique identifiers, their expenses and reports can be aligned with the FBU mapping. The PERSAL or personnel system has limited access, but through background coding, each post was linked to feeding into the FBU dashboard to provide personnel costs per FBU.

The diagram below is an extract to indicate how some patient activities and data mapping relates to an FBU. The example indicates the tracking of general expenditure activities, laboratory usage and expenditure, medicine usage and cost implication from the pharmacy, and blood and blood products related cost. Information can be drilled down to specific detail that includes top 10 diagnoses and top medicine prescriptions as well as expired medicine per FBU. A cost-centre approach is used with a focus on the clustering of clinical services per discipline.

FBU MAPPING																		
FBU	COST CENTRE		CHIEF USER			WARD CODE	BEDS	JAC		NHLS		CLINIC	WPBTS	PACSI RIS				
SURGERY	In pt.	94038	Surg	100B	WC2	29	WDC C2	94038	Inpst	94038			SUR	Surg inpst	94164			
			EB	212B	WE3	10									Surg inpst	94021		
	Out pt.	94040	SOPD	102F			SOPD	94040	Outpst	94040	WDCPSUR	94040			Surg outpst	94040		
			Stoma	77K			WDC STOMA	94040				WC STOMA	94040					
Admin	94752	Surgery Admin	133D															
O&G	In pt. CBS	94023	Antenatal	101A	WD1N	10	Antenatal	94023	Inpst	94023			OBSSG	CBS antenatal	94023			
			Postnatal	100A	WD2M	18	Postnatal	94023							CBS post natal	94025		
	In pt. Gyn	94022	Gynae D1	201A	WD1N	3	Gynae inpst	94022	Inpst	94022			GYNAE	ICU O&G	94022			
			Gynae B3	203A	WE3	6	Gynae inpst	94022										
	Out pt. CBS	94024	CBS CPD	10CL			OBST CPD	94024	Outpst	94024	WDCOBS	94024			CBS CPD	94024		
	Out pt. Gyn	94018	Gynae CPD	20CL			Gynae CPD	94018	Outpst	94018	WDCPGYN	94018			Gynae CPD	94018		
Admin	94747	O&G Admin	133D															
ORTHO	In pt.	94049	General	112C	WC3	30	WDC C3	94049	Inpst	94049				ORT	Ortho inpst	94050		
			Elective	102E													Ortho elect	94162
			Trauma	102T														Ortho trauma
	Out pt.	94048	CPD	102C			OBPD	94048	Outpst	94048	WDCOPDR	94048						
Admin	94751	Ortho Admin	133D							WDCOPDR	94048							
ANAESTH THEATRE & ICU	In pt.	94004	Main theatre	102B			GEN THEATRI	94004	Theatre	94004	WDCOPFCP	94004	ANAESTH	Main & Gen theatr	94003			
			ICU	103A	WHC	5	GEN ICU	94004	ICU	94004					ICU	94004		
			Day theatre	102M			DAY THEATRI	94004							Day theatre	94004		
	Out pt.	94013	Pre-op	202M														
Admin	94788		143D															
EC	Trauma out pt.	94060	Casualty	100M			TRALMA	94060	Casualty	94060	WDCFEME	94060	TRAUMA/CASUALTY	EC outpst				
	In pt. overnight	94759	Overnight	200M	WCAS	12	OVERNIGHT	94060	Overnight	94759			INPSTR OVERNIGHT	EC inpst	94166			
	TCC		TCC	300M			TCC		TCC									
	Admin	94076	Admin	112D														

Figure 3. Extraction from the FBU mapping structure

At the same time, when the mapping changes were implemented, a functional change in the management structure of the executive management was also implemented. As recommended in a national protocol that was published in October 2013, giving guidelines on how to improve hospital management. One of the directives states explicitly that the executive management of hospitals should include all senior clinical managers or Heads of Clinical Units (HCU).

A functional matrix reporting system was adopted as opposed to the traditional hierarchy reporting system in the Public sector. This arrangement allowed for continued feedback improved sharing of information and shared accountability for service outputs within the facility. The process was initially intense as head clinicians are not familiar with all financial and people management policies and practices, while at the same time corporate functionaries had to learn about the impact of their services and functions on the clinical service delivery ability within specialty departments. Corporate or administrative functionaries started collecting, grouping, monitoring, and reporting per FBU, applying the clustered approach for all available data. It should be noted that there is no specific medical management position as the head clinicians took over the management roles for their own units.

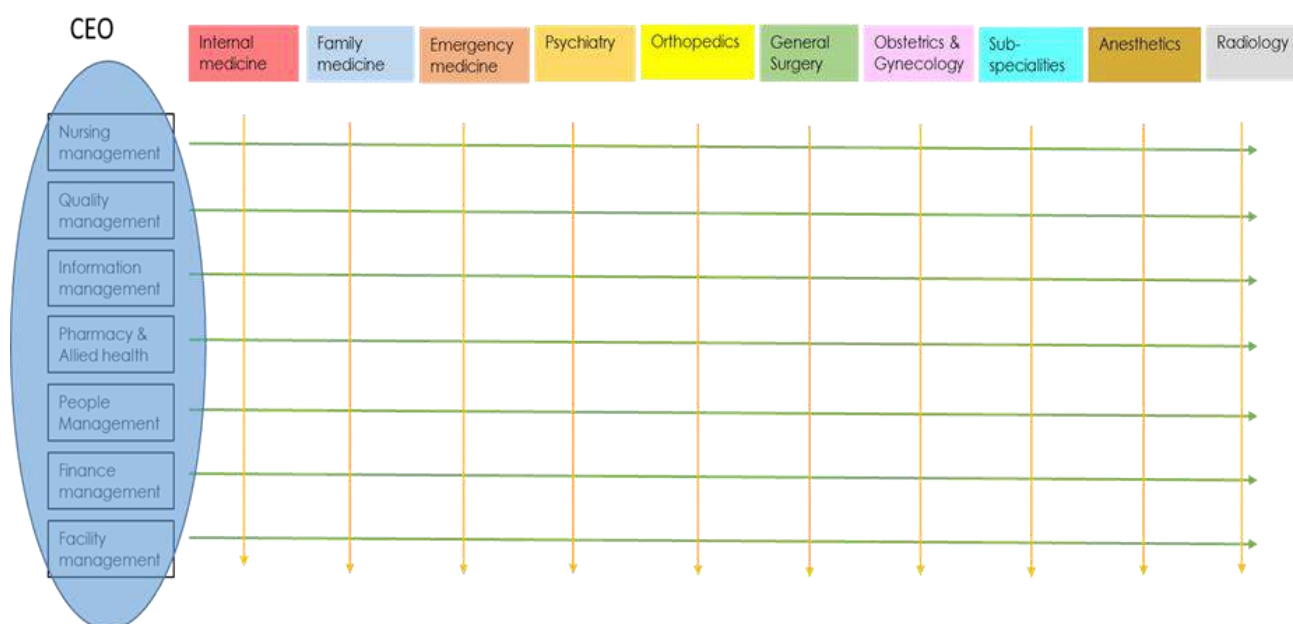


Figure 4. Management matrix structure

6. Results and Findings

The data analysis for the hospital as a unit showed remarked improvements in all patient activity indicators. The unreliable data and poor quality of data were initially of grave concern and efforts were made to focus on quality capturing. Additional resources were prioritized in 2015 to ensure enough administrative support for patient administration.

Since the inclusion of senior clinicians in the executive management in 2014, and the strategic focus on quality data, a steady increase was seen in the number of inpatient days while the separations also steadily increased. These indicators measure the number of patients admitted and discharged. Using these indicators an additional indicator was introduced, this was borrowed from the principle of the Pabon Lasso model. The Bed turnover rate was raised to measure the patient throughput per bed per annum. The implication of improved governance allowed that from the 2012/13 financial year each bed in the hospital only admitted 76,7 patients in a year, by 2018/19 each bed accommodated 83 patients in a year. The second additional indicator applied was the interval rate. The interval rate measures the time a bed is empty before another patient is received in the bed. The interval rate also improved from a little more than one day in 2012/13 to a little more than half a day before the next patient is received in a bed. Theatre efficiency improved the most with 3000 cases additional from 2012/13 to 2018/19. This while the Exp/PDE only increased with only R300 over the same period. Taking into consideration the inflation rate and increases in price indices, excellent technical efficiency was achieved considering the increase in overall PDE or patient activity.

The ALOS stayed the same over the same period, but the bed utilization BUR increased to the expected 85%. The statement made by Chikobvu (2016:149) that ALOS at a ward level or per clinical condition is a much better indicator of the severity of illness or disease than at a hospital level. This can be confirmed by evidence found in the basic analysis of data in the tables below.

Table 1. Seven-year results of Key indicator data

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Actual beds	269	277	277	277	271	271	275
Inpatient days	74,950	81,149	78,433	77,401	77,942	79,808	83,355
Patient days	76,797	83,229	80,083	79,697	80,285	82,271	85,789
Day patients	3,694	4,159	3,299	4,591	4,686	4,926	4,868

Separations	20,263	22,450	20,842	21,992	22,048	22,683	22,832
PDE	103,981	111,199	108,942	108,399	107,468	108,660	113,361
Total expenditure	R 193,744,530	unavailable	unavailable	R 326,300,788	R 353,561,128	R 368,402,021	R407,207,934.
Exp/PDE	R 3,290	unavailable	R2,769	R 3,010	R 3,290	R 3,390	R 3,592
Theatre cases	9973	10519	11497	11,107.00	11,866.00	11,737.00	12,860.00
ALOS	3.79	3.71	3.84	3.62	3.64	3.63	3.76
BUR	78.2%	82.3%	79.2%	78.8%	81.2%	83.2%	85.5%
OPD new	22,710	21,806	22,788	24,247	22,406	23,873	21,830
Follow up	26,177	28,355	27,941	25,686	24,560	20,876	23,016
OPD headcount	50,066	51,480	51,308	50,450	47,676	45,350	45,530
EC visits	31,485	32,431	35,271	35,657	33,872	33,818	37,185
BTR	74,7	81	75	79	81	83	83
IR	1.095 days	0.79 days	1 day	0,97 days	0,85 days	0,73 days	0,64 days

Being able to provide specific information to clinical specialties, them having a better understanding of the impact of performance, and measuring technical efficiency resulted in competition and internal motivation to perform better. Below are specialties-specific improvements driven by the Heads of clinical Units (HCU) without any external interference.

Table 2. Comparison at speciality or clustered level before and after sanitizing of data and mapping codes.

	Surgery		Orthopaedics		Internal medicine	
	2013/14	2018/19	2013/14	2018/19	2013/14	2018/19
BUR	71%	84%	94%	93%	95%	90%
BTR	63,7	101,3	72,5	78,2	83,6	90,41
ALOS	4	3	5	4	4	4

The additional indicator bed turnover rate (BTR) is calculated by dividing the total separations by the number of beds. In each discipline, there was a remarkable increase in the patient throughput per bed, while the ALOS in two of the disciplines was reduced. This can translate into improved inpatient care access as more people could be admitted in one period. The possibility that part of the improvement seen may also be attributed to improved quality data capturing should not be dismissed.

The re-organization of the coding system allowed support services to start reporting per clinical cluster or FBU. The most remarkable improvement was observed in the decrease in expired medicine. The response from the Pharmacy manager in the open interviews conducted is the following;

The improvement in stocktake shortages and surpluses overtime (also attached) was mostly due to the implementation of stock management principles, assigning correct access and segregation of duties on JAC, and rebuilding the JAC location. Strict monitoring of JAC errors also curbed losses and minimising bulk issues[sic] to wards and rather issuing medication per patient from the pharmacy

	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Total 18/19	Total 19/20	Total 20/21	Total 21/22	Total 22/23	
CLINICAL SUPPORT			248															248
EC			1 581				0				0		21 812	4 640	955	461	1 581	
EMS		0	868										857	638	0	500	868	
FAM MEDS	0	7	979		0				0				1 022	376	368	819	985	
ICU	15								0	0	0		8 172	6 555	3 754	259	15	
INTERNAL		586	1 427	0		0				0	0		6 853	937	2 281	2 387	2 013	
QA			0								0		27	219	0	673	0	
O & G	1 065	152	21	0	0			0		0	0		3 035	754	2 266	6 836	1 238	
ORTHO			396										44	121	8	0	396	
PEADS		0	406			0	0						701	98	3	130	406	
PSYCH							0		0				88	553	134	297	0	
SUB SPE													246	0	246	0	0	
SURGERY	653		4		0	0	0	0			0		987	305	366	965	657	
THEATRE	0			0		0							4 765	32 720	26 236	50 374	0	
Total	1 734	745	5 682	0	0	0	0	0	0	0	0	0	48 609	47 916	36 616	63 199	8 160	

Annual Value of expired medication per FBU

Support service functions also started reporting per FBU such as linen losses in the facility, meals ordered and wasted, and telephone bills. Without any active project initiation, the reporting alone has seen a reduction in wastage. Only the catering services adjusted their meal order system and over R1million was saved in one financial year due to a reduction in wastage. The wasted meals were reduced from 1223 in FY 2015/16 to 143 in FY 2018/19.

Table 3. Reduced linen losses from 10% to 2%

Provincial Report: Linen Losses 2016/2017						
Basic Stock Count	Value of Basic Stock	Losses	Value of losses	End Basic Stock	Value of end stock	Percentage of loss
45338	R 5,641,164.38	4592	R 432,299.20	40746	R 5,208,865.18	10%
Provincial Report: Linen Losses 2017/2018						
Basic Stock Count	Value of Basic Stock	Losses	Value of losses	End Basic Stock	Value of end stock	Percentage of loss
38336	R 4,724,718.17	2375	R 265,381.65	35961	R 4,459,336.52	6%
Provincial Report: Linen Losses 2018/2019						
Basic Stock Count	Value of Basic Stock	Losses	Value of losses	End Basic Stock	Value of end stock	Percentage of loss
38336	R 5,338,412.89	729	R 90,671.20	37607	R 5,247,741.69	2%

Open interviews were conducted and videos were recorded with permission from various unit managers, not only members of the executive management. The feedback is overall positive and includes comments such as;

For the first time, it felt for me as a clinician that everything is about clinical services as opposed to previously HR and finance compliance. It meant for me that I as an HCU can make decisions on how I run my unit.

Now I see the bigger picture of what the running of a hospital is all about... I understand now why a no is a no now as there are other priorities that supersede what I as a clinician wanted....

It broke down some of the old rivalries between clinical specialties as we work together now and learn about others' problems and challenges as well.....

It put me in charge of not only clinical services and doctors, but also allow me to make decisions regarding the finances, what we use in the unit and the cost implications...

We break down reports and provide feedback to each FBU manager instead of the hospital as a whole. This helps with other managers taking responsibility for HR compliance within their units.....

The exploration of both the statistical analysis as well as the qualitative feedback confirmed that the proposed framework leads to positive results in performance efficiency, not only in the clinical components of a hospital environment but also in other support services.

7. Managerial Implications

Based on the findings obtained from the framework application, there is merit to reconsider the hierarchy in reporting structures to provide a platform where senior clinicians are part of the executive management of health facilities. The qualitative findings in this study confirm bridging the gap between clinical and administrative managers, bringing together the medical and the managerial science as referred to by Donabedian (1989:242).

Opportunities and challenges that were identified in the findings seek clarity and development of guidelines to address;

- A guideline on wrangling data using a digital dashboard to sanitize systems while providing appropriate data and information for management decision-making. The main focus of such a development should be built around the unique clinical identifiers and the unique financial identifiers to link cost with patient activities within each clinical cluster.
- Development of electronic systems for support service reporting per clinical cluster to link with a dashboard. The awareness and access to knowledge already proved cost-saving initiatives and reduction in wastage.
- The access to information and ability to compare performance within one hospital proved to stimulate competition amongst FBU managers to improve performance outputs. This includes the development and innovation of processes that enhance patient referrals and timeous transfers. Theatre efficiency initiatives and arthroplasty supply chain systems were developed to ensure timeous processing and payments of consumables. These benchmark processes should be developed into standard operating procedures for use in other facilities.

8. Conclusion

The anticipated outcome of this framework development was to include all stakeholders in the decision-making process within the hospital. There is merit in applying the conceptual framework as evidence was found through data analysis that an improvement in performance output indicators was observed. Clinicians became aware and involved in monitoring their own departments' efficiency related to ALOS and the impact on Exp/PDE. Monthly reports and feedback from support service functionaries also impacted behaviour and a remarkable reduction in wastage was observed. Improved responsibility and shared accountability were observed in quarterly monitoring and evaluation meetings where clinicians raise concerns if patient data was not correctly captured and impacting their overall performance.

Further research is recommended to determine if the framework can be applied across hospitals in the same setting and create a situation where clinical specialities can be compared on a like-to-like basis rather than comparing hospitals using one economic proxy indicator only. While it may not be possible to change the hierarchical structure of other hospitals to enhance the communication platform to include heads of clinical units in the executive management, other platforms may also be created to counter the hierarchical structures. The majority of studies in health systems focus on the clinical

science and integration of clinical data toward improved value-based outcomes for patients, with limited focus on the managerial science that enables clinical service outcomes.

Limitations to the study include access to system coordination, currently, most digital and other electronic health systems are centrally controlled. It is strongly recommended that measures be put in place to address the organizational design of hospital staff structures, including information technology support, as it became part of the day-to-day functioning of health within health facilities. Refinement of the FBU dashboard should improve the quality of data and more systems integration.

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Strategic Renewal as a Moderator In The Relationship Between Business Model Innovation Through Digital Transformation and Business Performance

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Keywords

Business model innovation, Digital Transformation, Strategic Renewal, SMEs

Abstract

The purpose of this study was twofold, (1) to determine if business model innovation through digital transformation impact business performance and (2) if strategic renewal positively moderates the impact of business model innovation through digital transformation on business performance. The methodology employed in this study was quantitative, through surveys, by conducting research on small and medium-sized enterprises (SMEs) from South Africa and the Netherlands, yielding 426 responses in total. The study employed an exploratory factor analysis, followed by regression analysis and Multivariate analysis of variance to determine any significant difference between SMEs in South-Africa and the Netherlands. The results showed that business model innovation (BMI) through digital transformation positively impacts business performance. Secondly, strategic renewal, acting as a moderator, also positively increases the relationship's impact. Lastly, no significant differences were identified between South Africa and the Netherlands. This study contributes theoretically to the knowledge of the role of BMI and digital transformation on business performance and the role of strategic renewal in the successful execution of BMI through digital transformation.

Introduction

Small and medium-sized enterprises (SMEs) play an essential role across economies worldwide (North and Varvakis, 2016), having the competitive advantage of flexibility and faster decision-making over larger organisations (Fedouaki, Okar, and El Alami, 2013) which is one of the critical factors for successful digital transformation. The digital age has presented many opportunities to ensure sustainability and a competitive market position, but it has also contributed to many challenges for SMEs. One such opportunity and challenge is digital transformation, generally defined as changes to a business' structure, processes, strategy, and culture due to adopting digital technologies (Fitzgerald *et al.*, 2014; Matt *et al.*, 2015). This phenomenon has captured the attention of many scholars, practitioners, and policymakers urgent imperative, despite the long trajectory of rigorous research across multiple industries (Trenerry *et al.*, 2021). The digital age requires businesses to undergo a strategic renewal process, which includes transforming their business models to create and maintain their competitive advantage and ensure their survival (Musa and Mamun, 2018). Schmitt, Raisch and Volberda (2016, p.5) defines strategic renewal as “(a) a transformation of the firm's core capabilities associated with competitive advantage, (b) concerns the entire organization and has implications across organizational levels and (c) is essential to break path dependence and ensure the firm's long-term survival”.

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However, strategic renewal can be challenging due to the uncertainty of its outcomes. It requires a business to align its organisational structures, culture and human capital to ensure it works congruently (Teece, 2019). Many authors have argued that organisational changes must be made to accomplish digital transformation (Gehrke et al., 2015; Matt et al., 2015; Duerr et al., 2017). Business model innovation encourages practitioners to renew their strategy as it offers businesses a new way of creating value for their customers and maintaining a sustainable competitive advantage. Literature on BMI and digital transformation and its importance has increased over the past decade (Sony & Naik, 2020; Vial, 2019; Warner & Wäger, 2019). However, Imran, Shahzad Butt, and Kantola (2021) claim that there is a lack of understanding of organisational change in digital transformation. This article seeks to answer the following research questions:

- *RQ 1: Does business model innovation through digital transformation impact business performance?*
- *RQ 2: Does strategic renewal positively moderate the impact of business model innovation through digital transformation on business performance?*

Theoretical foundations and development of hypotheses

Digital transformation

Digital transformation is revolutionising industries through adopting digital technologies, also referred to as the fourth industrial revolution or Industry 4.0. It has become a buzzword amongst researchers and practitioners worldwide (Bharadwaj et al., 2013; Fitzgerald et al., 2013). This has forced businesses to change their operations and value creation by introducing new digital technologies (Vial, 2019). This, for example, includes the internet of things (IoT), cloud computing, big data, data analytics, artificial intelligence, automation, etc. (Gilchrist, 2016). These changes require businesses to revisit strategies that enable using and exploiting these digital technologies to result in better business performance (Hesse, 2018). The relationship between digital transformation and BMI has received much attention from scholars and practitioners (Vaska et al., 2021). Vial (2019) argues that adopting digital technologies is only one part of the digital transformation process, and businesses need to do much more to transform their business model digitally. Business models enable one to examine and determine the effects of digital technologies on the value creation and capturing process. In addition, BMI can enhance and improve the value creation and capturing process (Zott and Amit, 2010) and business performance (Foss and Saebi, 2017). Thus, BMI driven by digital transformation can support innovative efforts (Cenamor et al., 2019), better understand customer needs (Metallo et al., 2018), increase efficiency and revenue growth (Visnjic et al., 2018) and create sustainable collaborative efforts with external partners (Rajala et al., 2018).

Business model innovation and SMEs

Business model innovation (BMI) allows businesses to transform their business model digitally. A business model is defined as the business logic that describes how value is created for the customer and value is captured by the business (Bouwman et al., 2017). Simply put, BMI is defined as how a business identifies new ways to create value for their customers (Foss and Saebi, 2017). BMI is a process of innovation that does not only include new product or service innovation but can include, for example, making changes to production systems, new product or service offerings that enable an innovative way that customers can interact with the business, such as getting real-time updates on the manufacturing progress of a product. This can improve customer relationships (Arnold, Kiel, and Voigt, 2016). Making such changes can put a business in a competitive position; therefore, SMEs need to keep up with the business model changes and use of the digital technologies of their competitors (Gibson and Jetter, 2014). Bouwman et al. (2017) state that the fastest trend in business history is technology advancements and development, which directly impact businesses. SMEs, in particular, should be able to adapt to the disruptive technological environment, which might require a wholly new or adapted business model (Gerlitz, 2016). Marolt et al. (2018) reported that technology influences the level of BMI, which ultimately has an impact on the overall business performance of an SME. Latifi, Nikou, and Bouwman (2021) also found that if a business engages with BMI, its overall business performance will increase. The following hypothesis is thus made:

H1 + Business model innovation through digital transformation positively impacts business performance

Strategic renewal

A critical factor in achieving successful digital transformation is aligning all the changes resulting from digital transformation activities and the existing strategy. Several authors (Jafarzadeh et al., 2015; Gudergan and Mugg, 2017) have acknowledged the importance of a digital business strategy. Bharadwaj et al. (2013, p.472) define it as an “organisational strategy formulated and executed by leveraging digital resources to create differential value.” Kane et al. (2017) agree that digital transformation depends on the leadership team’s implementation of the digital strategy and not merely the use of technology. Implementing a digital strategy portrays a picture of the leadership teams’ digital abilities, the agility and scalability of operations, a digitally enabled customer experience, and digital innovations (Leischnig et al., 2017). Businesses should adopt the right digital technologies and once this is done, the organisational strategy should be revised, alongside the right skillset to ensure that the digital transformation-induced business model innovation is executed effectively (Westerman et al., 2011; Fitzgerland et al., 2014; Morakanyane et al., 2020). Many researchers (Finkelstein and Hambrick, 1996; Hambrick, 2007) found that top-level managers significantly influence an organisation’s strategy and performance. The first step in creating a strategy is communication that flows from top management and filters down to the rest of the organisation, which is a critical factor in implementing a digital strategy. It should be clear that top management is the driver behind the digital transformation process (Bonnet and Nandan, 2011). Constant communication from top management is key to ensuring all employees are informed of the changes implemented (Kotter and Cohen, 2014). Additionally, all employees should be informed that digital transformation is for the betterment of the entire organisation. To ensure survival and sustain a competitive position requires agility, an open mindset, and accepting failure (Tamm et al., 2011). Many authors have emphasised the importance of strategic renewal in the digital transformation process (Rothmann and Koch, 2014; Blatz et al., 2018; Szedlak et al., 2019; Verhoef et al., 2021). The following hypothesis is thus made:

H2 + Strategy renewal positively moderates the impact of business model innovation through digital transformation on business performance.

Research model

The research model used in this study was developed based on the literature review on business model innovation, digital transformation, and strategy. The literature reported that strategic changes are required for the successful digital transformation of the business model, which is relevant to achieving and enhancing business performance. Therefore, the research model and hypotheses are shown in Figure 1 below.

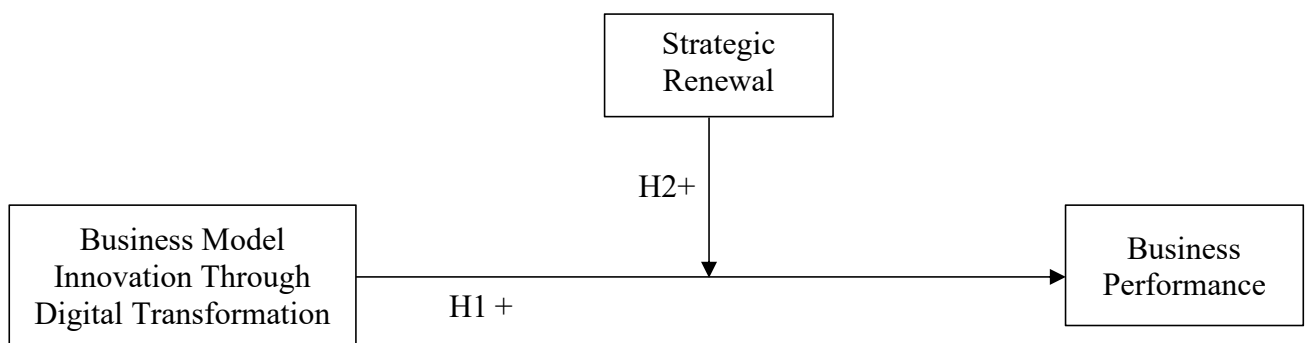


Figure 1 Research model and hypotheses

Research methodology

This section will elaborate on the dataset, variables, and methods used in this study to examine and evaluate the proposed research model. Based on the above discussion, an empirical research study is performed to determine the impact of business model innovation through digital transformation on business performance and the impact of strategic renewal as a moderator on this relationship.

Empirical setting and sample size

The target population of this study includes SMEs in South Africa and the Netherlands. As per the definition of the South-African National Small Enterprises Act, 2004 (Act No. 29 of 2004) and the European Union's (EU) recommendation 2003/361, an SME is defined based on the number of employees and turnover. The number of employees cannot exceed 250; the highest net turnover is R220 million for South-African SMEs and €40 million for Dutch SMEs. The total number of SMEs in 2019 in South Africa in the third quarter was 2 653 424, with only 779 297 SMEs in the formal sector as opposed to 1 791 431 in the informal sector (SEDA, 2019). Compared to the Netherlands, there were 1 188 786 SMEs in 2019 (SBA Factsheet, 2019). SMEs in both countries contribute significantly to job creation and the economic growth of these countries (SBA Factsheet, 2019; StatsSA, 2020). For statistical analysis, a minimum sample size of 5 times the number of items included in the data instrument is acceptable (Fox and Bayat, 2013). Thus, for this study, 40 questions were included in the instrument. Therefore a sample size of 200 is acceptable.

Data collection

The methodology employed in this study was quantitative, through the use of surveys. From January 2022 - May 2022, questionnaires were distributed online to South African and Dutch SMEs using a research company in each country to assist with data collection. In addition, contact details for South-African SMEs were obtained from YelloSA and the Small Business Directory. A total yield of 198 responses was obtained from South-African SMEs and 226 from Dutch SMEs, resulting in 424 responses.

Development of survey instrument

The item scales in the survey were developed based on extensive research on BMI, digital transformation, strategy, and business performance. Brislin (1986) stated that the official language should be used to conduct the survey to ensure the translation is accurate. Therefore the survey was constructed in English and distributed to the South-African SMEs. The English survey was then translated by a native Dutch speaker and distributed to Dutch SMEs. A five-point Likert scale ranged from 1 (strongly disagree) to 5 (strongly agree). The independent variable (BMI through digital transformation) consisted of nine scale items, the moderator variable (strategic renewal) consisted of four scale items, and the dependent variable (business performance) consisted of seven scale items.

Data analysis

The data were analysed on the Statistical Package for Social Science (SPSS). The data set was analysed using regression analysis to identify the relationships among constructs with business performance as the dependent variable, business model innovation through digital transformation as an independent variable, and strategic renewal as a moderator. The relationships between the variables were first explored using exploratory factor analyses (EFA) to determine which factors should be grouped (Yong and Pearce, 2013). The Kaiser–Meyer–Olkin (KMO) test was performed to measure the sampling adequacy and Bartlett's sphericity test to investigate the data's factorability. Following this, a regression analysis was conducted to (1) assess the relationship between the independent variable (business model innovation through digital transformation) and the dependent variable (business performance) and (2) to determine the interaction between business model innovation through digital transformation and the strategic moderator renewal. The correlation was also used to deeply explore the interrelationships between the variables and assess the strength of the linear relationship using Pearson's correlation coefficient, which also checked for multicollinearity (Pallant, 2007). Reliability was determined using Cronbach's alpha (α) to analyse the internal consistency of the sub-scales. Lastly, Multivariate analysis of variance (MANOVA) was conducted to determine any significant differences between the South African and Dutch business performance.

Findings

The demographic results of the respondents are presented in Table 1 for both countries.

Table 1: Demographic results of South Africa and the Netherlands

South-Africa			Netherlands		
	Frequency			Frequency	
	n	%		n	%
Number of employees					
Only myself (no employees)	14	7.1	Only myself (no employees)	84	37.2
< 5 employees	77	38.9	< 5 employees	37	16.4
5-20 employees	70	35.4	5-20 employees	21	9.3
21-50 employees	25	12.6	21-50 employees	27	11.9
51-99 employees	7	3.5	51-99 employees	21	9.3
100-250 employees	5	2.5	100-250 employees	26	11.5
Annual Turnover					
< R15 million	137	69.2	< € 2 million	117	51.8
R15 - R80 million	36	18.2	€ 2 million - € 10 million	34	15.0
R80 – R220 million	6	3.0	€ 10 million - € 50 million	34	15.0
> R220 million	3	1.5	I would prefer not to disclose this information.	41	18.1
I would prefer not to disclose this information.	16	8.1			
Industry					
Agriculture	1	0.5	Agriculture	12	5.3
Mining and Quarrying	4	2.0	Manufacturing	13	5.8
Manufacturing	14	7.1	Electricity, Gas, Steam & Water	6	2.7
Electricity, Gas, Steam & Water	5	2.5	Construction	9	4.0
Construction	13	6.6	Retail Motor Trade & Repair services	3	1.3
Retail Motor Trade & Repair services	1	0.5	Wholesale	13	5.8
Wholesale	6	3.0	Catering and Accommodation and other Trade	10	4.4
Catering and Accommodation and other Trade	9	4.5	Transportation, Storage, and communications	17	7.5
Transport, Storage, and communications	4	2.0	Finance and Business Services	60	26.5
Finance and Business Services	40	20.2	Community, Social and Personal Services	33	14.6
Community, Social and Personal Services	4	2.0	Other, please specify	50	22.1
Other, please specify	97	49.0			

Source: Own compilation

Exploratory factor analysis

Exploratory factor analysis (EFA) is used to analyse the relationships between variables that can determine which scale items intercorrelate. Before an EFA can be conducted, the dataset must be tested to determine if it is suitable for factor analysis (Williams, Onsman, and Brown, 2012). We used the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO), where the value should be greater than 0.6, and Barlett’s test of sphericity, where the significant value (Sig) should be less than 0.05 (p-value < 0.05). Table 2 indicates the results of these two tests.

Table 2 KMO and Bartlett’s Test for independent variables

KMO and Bartlett’s Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.947
Bartlett’s Test of Sphericity	Approx. Chi-Square	7836.172
	df	325
	Sig.	0.000

Source: Own compilation

From Table 2, it is clear that the KMO value is 0.947, which is above the acceptable norm of 0.6. Bartlett's sphericity tests are significant (0.000) with the $p < 0.05$, indicating that the data is suitable for factor analysis. The next step was to conduct a factor extraction method using the principal component analysis to see which scale items were intercorrelated. Principal axis factoring was used as the rotation method, showing both factors of eigenvalues of 1.018 and above as seen in Table 3 below.

Table 2 Total Variance

Factor	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
SR	2.596	9.986	56.893	2.158	8.299	53.748	3.467	13.336	36.111
BMI_DT	1.018	3.917	65.551	0.656	2.525	59.579	2.773	10.667	59.579

Source: Own compilation

The rotation indicated that scale items C1 and C2 correlated stronger (0.557; 0.531) with variable 2, contrary to the initial instrument. Pallant (2007) indicates that values above 0.3 indicate a moderate relationship that is acceptable. This resulted in four scale items remaining in factor 1 (strategic renewal) and nine scale items in factor 2 (business model innovation through digital transformation). Literature suggests that digital transformation is an ongoing strategic renewal process that uses digital technologies to develop capabilities to change a business's business model and culture (Warner and Wäger, 2019). Furthermore, Kane et al. (2015) claim that digital transformation requires a change in leadership, attitudes, and culture that is more open toward innovation, change, and acceptance of ambiguity. This explains the rotation results which was used to conduct the regression analysis.

Regression analysis

A regression analysis was performed to determine the following (1) the impact of business model innovation through digital transformation on business performance and (2) the interaction between business model innovation through digital transformation and strategic renewal on business performance. The regression analyses were performed separately on both countries (SA= South Africa; NL = Netherlands). Firstly, the results of H1+ indicate that the independent variable and dependant variable is significant with the $p\text{-value} \leq 0.05$. Thus, the null hypothesis was rejected, and the alternative hypothesis was accepted. Turkmen's (2013) argues that an r value between 0.3 to 0.5 represents a moderate relationship. Therefore we can conclude that a moderate relationship exist between the dependent variable (business performance) and the independent variable (BMI_DT) for both countries, (SA = $r = 0.393$; NL = $r = 0.411$) as seen in Table 4.

Table 4 Correlations of hypothesis 1

		Correlations			
		Business Performance	BMI_DT	Business Performance	Factor1
		South-Africa		Netherlands	
Pearson Correlation	Business Performance	1.000	0.393	1.000	0.411
	BMI_DT	0.393	1.000	0.411	1.000
Sig. (1-tailed)	Business Performance		0.000		0.000
	BMI_DT	0.000		0.000	
N	Business Performance	198	198	226	226
	BMI_DT	198	198	226	226

Source: Own compilation

In addition, Pallant (2013) states that the R-square value must be between 0 and 1. For both countries the R-square is appropriate (SA = 0.154; NL = 0.169). The coefficient values are used to assess the strength of a relationship. Values can range between - 1 and + 1; if a value is 0, there is no relationship, and if a value is 1, there is a relationship (Pallant, 2013). Tables 5 and 6 indicate that both countries have a sig value of $p \leq 0.05$. Furthermore, the unstandardised beta (SA = 0.330; NL = 0.316) indicates that for every one unit that BMI_DT increase, business performance will increase with 0.330 for South Africa and 0.316 for the Netherlands.

Table 5 South-African Coefficients of hypothesis 1

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.181	0.216		10.091	0.000	1.755	2.608
	BMI_DT	0.330	0.055	0.393	5.983	0.000	0.221	0.438

a. Dependent Variable: Performance

Source: Own compilation

Table 6 Netherlands Coefficients of hypothesis 1

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.465	0.159		15.501	0.000	2.152	2.779
	BMI_DT	0.316	0.047	0.411	6.750	0.000	0.224	0.408

a. Dependent Variable: Performance

Source: Own compilation

The second objective of the regression analysis was to determine the interaction between BMI_DT and the moderator SR (strategic renewal) on business performance (H2+), which was also conducted separately in both countries. Table 7 below presents the correlations for both countries.

Table 7 Correlations of hypothesis 2

Correlations									
		Business Performance	BMI_DT	SR	Int. SR	Business Performance	BMI_DT	SR	Int. SR
		South-Africa				Netherlands			
Pearson Correlation	Business Performance	1.000	0.393	0.333	-0.029	1.000	0.411	0.415	0.143
	BMI_DT	0.393	1.000	0.730	-0.404	0.411	1.000	0.771	-0.193
	SR	0.333	0.730	1.000	-0.331	0.415	0.771	1.000	-0.194
	Int. SR	-0.029	-0.404	-0.331	1.000	0.143	-0.193	-0.194	1.000

Sig. (1-tailed)	Business Performance		0.000	0.000	0.340		0.000	0.000	0.016
	BMI_DT	0.000		0.000	0.000	0.000		0.000	0.002
	SR	0.000	0.000		0.000	0.000	0.000		0.002
	Int. SR	0.340	0.000	0.000		0.016	0.002	0.002	
N	Business Performance	198	198	198	198	226	226	226	226
	BMI_DT	198	198	198	198	226	226	226	226
	SR	198	198	198	198	226	226	226	226
	Int. SR	198	198	198	198	226	226	226	226

Source: Own compilation

Table 7 shows that the independent variable BMI_DT has a p-value ≤ 0.05 . The null hypothesis was rejected, and the alternative hypothesis was accepted. Therefore SR does have a strong impact on the relationship between BMI_DT and business performance (SA = $r = 0.730$; NL = $r = 0.771$) for both countries. The effect of the moderation is indicated below in figure 2 (SA) and figure 3 (NL), showing the positive interaction between business model innovation through digital transformation and strategic renewal on the predicted business performance.

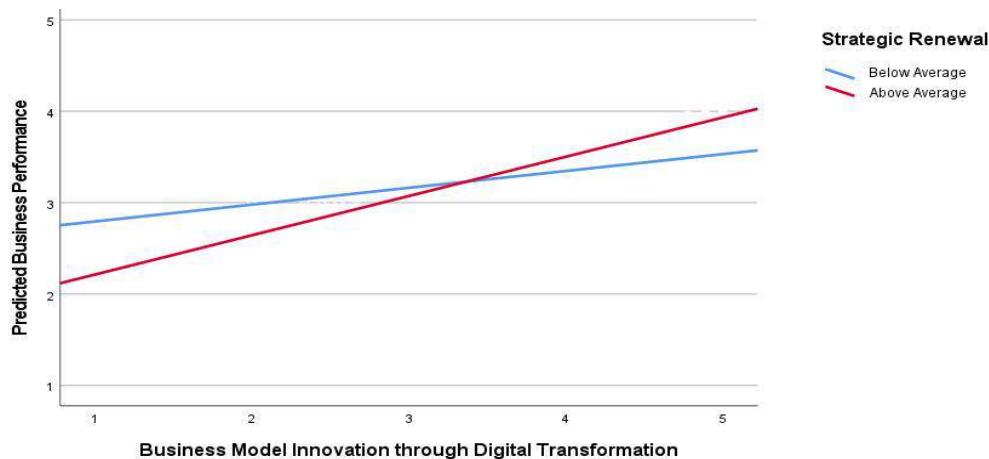


Figure 2 Interaction between business model innovation through digital transformation and strategic renewal on business performance for South-Africa

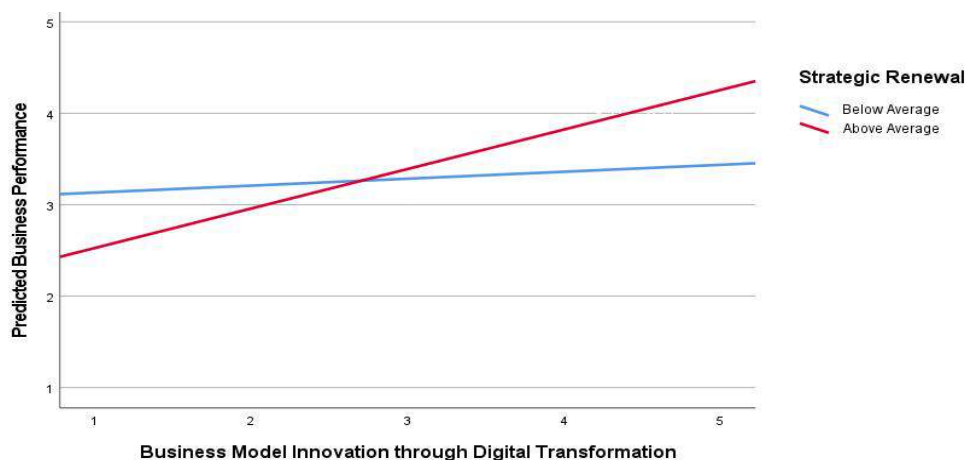


Figure 3 Interaction between business model innovation through digital transformation and strategic renewal on business performance for the Netherlands

The results also did not indicate any normality concerns or multicollinearity, as all VIF values were below ten and all tolerance values below 0.1 (Pallant, 2007). Reliability was also used to measure how well the variables measure a single construct. Cronbach's alpha (α) coefficient was calculated. Both values were above 0.7, BMI_DT (0.932) and SR (0.851), which is regarded as a reliable scale (Tavakol and Dennick, 2011).

Lastly, Multivariate analysis of variance (MANOVA) was conducted to determine any significant differences between the South African and Dutch business performance. The dataset of both countries was combined to perform the MANOVA tests. Firstly, we tested for any outliers, and in total, six outliers were evident based on the Mahalanobis distance value of 29.777, which is above the critical value of 16.27, indicating multivariate outliers (Pallant, 2007). After the outliers were removed, the Box's Test of Equality of Covariance Matrices was conducted. The results indicated that the data had not violated the assumption of homogeneity of variance-covariance matrices as the sig value is $p \geq 0.001$ (0.021). In addition, Levene's test indicates that none of the variables have a sig value of $p \leq 0.05$ as all values exceed 0.3, suggesting that we have not violated the assumption of the equality of variance for these variables. Finally, we conducted the Wilks' Lambda test to determine any significant differences between the two countries. The results show no significant difference between South Africa and the Netherlands regarding their overall business performance (Wilks Lambda = 0.847; sig = 0.000, partial eta squared = 0.153). In addition, the results of the tests of between subject's effect indicate that the sig value for the independent variables (*business model innovation through digital transformation and strategic renewal*) is $p \leq 0.05$. However, the sig value for *business performance* is $p \geq 0.05$, showing no significant difference between the two countries in terms of business performance. The same result is evident if we use the Bonferroni adjustment and divide the p-value by the number of dependent variables (3). The sig value remains $p \geq 0.05$.

Discussion

Implications for Theory and Research

The purpose of this study was to analyse the relationship between business model innovation through digital transformation and business performance by incorporating strategic renewal as a moderator that facilitates the relation between BMI through digital transformation and business performance. Strategic renewal has been noted in the literature as a contributor to digital transformation success, but not as a moderator that can strengthen the relationship. Therefore the findings forms the novelty of the study by indicating that strategic renewal acts as moderator that can strengthen the relationship. Firstly, the study contributes to the literature on the role BMI plays in digital transformation and how this can impact the overall business performance. This topic is mainly explored in literature through the impact of BMI or digital transformation on business performance and the lack of findings on this as a combined factor impacting business performance. Furthermore, this study focused on specific business performance indicators, which enhances and widens the current research. The results of hypothesis 1 show that BMI through digital transformation positively influences business performance. The results are supported by Foss and Saebi (2017) and Latifi et al. (2020), who reported that a business that engages with BMI would see an increase in its overall business performance. In addition, other studies indicated that digital transformation impacts the level of BMI, which can then impact business performance (Hesse, 2018; Marolt et al., 2018).

The second theoretical contribution of the study is the role that strategic renewal plays as a moderator in the relationship between business model innovation through digital transformation and business performance. Previous literature has reported that managerial capabilities foster strategic changes such as digital transformation, leading to improved business performance (Helfat and Martin, 2015; Li et al., 2018). In addition, many studies have reported that digital transformation is a managerial responsibility as it moves beyond technical requirements and involves changes to the business model, employee motivations, attitudes, and skill requirements (Li et al., 2018). Various authors (Rothmann and Koch, 2014; Blatz et al., 2018; Szedlak et al., 2019; Verhoef et al., 2021) have emphasised the need for strategic renewal for digital transformation, however, none of the studies analysed the impact of strategic renewal on the relationship, which is a novel contribution of this study. The results of

hypothesis 2 indicate that strategic renewal positively moderates the relationship between BMI through digital transformation and business performance. As the level of BMI through digital transformation increases, the impact of strategic renewal also increases. SMEs should therefore focus on renewing their strategy to accommodate digital transformation. This can be achieved by implementing a digital strategy and transformation plan. SMEs should also align their employee training with the new strategy to ensure employees are skilled and capable of using digital technologies. Strategic decisions should also be based on data and analytics. These findings are supported by literature with many authors (Bonnet and Nandan, 2011; Kane et al., 2015; Leischnig et al., 2017; Zhang et al., 2022) stating that a digital strategy should be implemented by the leadership team, which will portray the digital abilities and skills of the leadership team. Human and financial resources should also be integrated and controlled during the digital transformation (Zhang et al., 2022).

The data was collected from SMEs from both an emerging economy (South Africa) and a developed economy (Netherlands) which is the third theoretical contribution of this study. The results indicate that there was no significant difference in business performance between the SMEs of the two countries. This broadens the analytical findings of the research towards the execution of BMI through digital transformation and its impact on business performance. This offers a future research opportunity to test the same model in other emerging and developed countries to strengthen the findings. In addition, the reasons for these results were not explored and can be examined and explored in future research studies.

Managerial implications

The findings of this study will assist SMEs in adjusting their focus on the importance and contribution of digital transformation to business performance. Firstly, the study sheds light on the need for BMI, particularly through digital transformation, as it positively influences business performance. This can be achieved by renewing its strategy to accommodate changes in digital technologies driven by top-level management. SMEs should adopt digital technologies to create new value for their customers, introduce new products or services, improve internal processes, train employees regularly to develop digital capabilities, collaborate with external partners, and use digital technologies to develop additional revenue streams. Secondly, strategic renewal is required. SME business owners need to develop and implement a digital transformation plan and digital strategy and base their strategic decisions on data and analytics. Lastly, all of the above will result in improved business performance in terms of growth in sales, net profit, market share, penetration rate, speed to the market, customer satisfaction, and operational efficiency.

Limitations and future research

There are some limitations in this study since the study was conducted on South-African and Dutch SMEs during a specific time, which can threaten the generalisability of the study. This, however, creates a future research opportunity to conduct research in other emerging and developed economies. Secondly, the survey instrument is a newly developed instrument based on an extensive literature review, which offers future researchers an opportunity to validate the model on another sample and analyse the results using structural equation modelling (SEM). Future research studies can include multiple moderators that could positively impact the relationship of BMI through digital transformation on business performance, such as business culture renewal and organisational structure.

Conclusion

The purpose of this study was to analyse the relationship between business model innovation through digital transformation and business performance by incorporating strategic renewal as a moderator that facilitates the relationship between BMI through digital transformation and business performance. The study was conducted on SMEs from South Africa and the Netherlands, yielding 426 responses. The study employed an exploratory factor analysis, followed by regression analysis and MANANO tests to determine any significant difference between the two countries. The results indicated that BMI through digital transformation positively impacts business performance and strategic renewal, acting as a moderator, which positively increases the relationship's impact. Also, no significant differences

were identified between the two countries, which offers a future research opportunity to explore the reasons behind the result. This study contributes theoretically to the knowledge of the role of BMI and digital transformation on business performance and what SME business owners and managers can do to achieve this.

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An HR Perspective of Leadership: A Demographic Analysis

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Keywords

HR professional bodies, passive avoidant leadership, transformational leadership, transactional leadership

Abstract

There is an urgent need for integrating leadership and HR research. Previous studies on whether there are demographic differences pertaining to how South African HR professionals perceive their leadership styles are limited. A quantitative research method within a positivistic research paradigm was used to conduct research. HR professionals who were members of two HR professional bodies participated in the study by completing an existing leadership questionnaire. Purposive sampling was used. The response rate to the 205 questionnaires received back from the initial 520 questionnaires distributed was 39.42 per cent. Data were analysed by using an ANOVA, t-test and correlation analysis. There were no significant differences and relationships in how the respondents perceived leadership (transformational and passive avoidant) except for transformational leadership, the difference was between the 51-plus years old age group and the 18 to 30 age group. The present survey shows that age is an important demographic factor in transformational leadership perception. These differences must be managed in order to ensure that there is an alignment in how operational and strategic HRM functions are planned and executed.

1. Introduction

Human resource (HR) leaders had a difficult job during and at the apparent apex of the Covid-19 pandemic, they also experience stumbling blocks currently to adapt to a constant change in the introduction of technology in a digitised workplace. The COVID-19 pandemic has fast-tracked digitalisation trends while heightening the importance of employee resilience and well-being in adapting to the widespread job and technological disruption (Trenerry, Chng, Wang, Suhaila, Lim, Lu & Oh, 2021:1). More than 50 per cent of HR leaders struggled in 2019 to ensure that employees possess the skills necessary for a digitised workplace and Covid-19 has led to numerous HR challenges (Bingam, 2020). An HR leader must be able to step up in a time of crisis and think and act creatively (Nahavandi, 2016:6). An important highlighted aspect of leadership is the ability to influence others to come together around a common vision and to bring about change to secure a desirable future (Daft, 2014:6). Leaders around the world face challenges that span all areas of business (Hameed & Sharma, 2020:2379). Boninelli and Meyer (2011:446) assert that HR must always successfully deal with changes in the workplace; this being the ultimate test of leadership effectiveness. Haider, Yanru, and Yunxin (2016:39) are of the opinion that leaders in both public and private sectors must be charismatic, inspirational, good communicators, and visionaries. Leaders are central to organisational achievement, and they must be effective (Araujo-Cabrera, Suarez-Acosta & Aguiar-Quintana, 2016:201-215). The repositioning of HR may help to redefine the role of HR leaders, leadership styles, and incorporate strong technical and strategic skills (Kaluarachchi, 2014:128). According to Govender (2019:53), the overall success of HR is the identification of competency gaps and the building of relevant competency capabilities for registered HR professional bodies.

There is an urgent need for integrating leadership and HR research (Zhao, Liu, Zhu & Liu, 2020). More research on HR leadership is needed to be truly effective in this 'new normal' (Bingam, 2020).

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Studies on leadership and human resource management (HRM) both focus on understanding how people in organisations can be managed in an effective manner (Leroy, Segers, van Dierendock & den Hartog, 2018), who state further that, notwithstanding this shared goal, these two fields of research still remain independent.

2. Problem Investigated

Organisational demographic characteristics refer to the diversity of workers and are, for example, gender, age, and educational background (Greenberg, 2004). Previous studies on whether there are demographic differences pertaining to how South African HR professionals perceive their leadership styles have not been found. It is, therefore, not clear how these demographics of HR professionals may differ in terms of leadership. This formed the research gap for the current study. It is beneficial to study the relationships and differences between leadership and demographic characteristics, for example, an age-differentiated approach to leadership is important when considering healthy ageing at work (Koziel, Friedrich, Rudolph & Zacher, 2021). Even though most of the researchers found significant relationships between leadership and demographic factors, others contradict this view (Mushtaq, Qureshi & Javaid, 2019). No consensus has been reached about the relationship between leadership and demographic characteristics (Sürücü, Yeşilada & Maşlakçı, 2018). This study aims to close these research gaps.

3. Research Objectives

The main objective of the study is to determine an HR perspective of leadership by conducting a demographic analysis. The specific objectives are as follows:

- To determine if there is a significant difference in how HR professionals from different age groups perceive leadership.
- To determine if there is a significant difference in how HR professionals from different gender groups perceive leadership.
- To determine if there is a significant relationship between age and leadership.
- To determine if there is a significant relationship between length of employment and leadership.
- To determine if there is a significant relationship between highest qualification and leadership.

4. Hypotheses

The following hypotheses were formulated for the study as explained in section 5.2:

- H₁: There is a significant difference in how HR professionals from different age groups perceive leadership.
- H₂: There is a significant relationship between age and leadership.
- H₃: There is a significant difference in how HR professionals from different gender groups perceive leadership
- H₄ There is a significant relationship between length of employment and leadership.
- H₅ There is a significant relationship between highest qualification and leadership.

5. Literature Review

5.1 Leadership

According to Hogan and Kaiser (2005), the leadership literature can be sorted into troubadour tradition and academic tradition. Hogan and Kaiser (2005) state that the troubadour tradition is by far the larger and more popular literature which consists of the experiences of leaders but there is little supporting evidence and is unreliable. The academic tradition consists of empirical results about leadership. This study aims to add value to the academic tradition literature where seminal authors like Stogdill (1950) state that leadership is all about influencing activities to set and achieve goals. Burns (1978) was renowned for distinguishing two types of leadership, namely transactional and transformational which he deliberated as mutually exclusive. Bass (1985) states that these two

leadership styles are complementary to one another. For the purpose of this study, the focus will be on transformational leadership, transactional leadership and passive avoidant leadership.

Transactional leadership can be defined as the exchange of agreed-upon targets and goals between the management and the employees (Ojokuku, Odetayo, & Sajuyigbe, 2012:202). Transactional leadership focuses on day-to-day operations (Northouse, 2016) and consists of two substyles:

- Contingent reward: The leader focuses on illuminating the task and requirements (Antonakis, Avolio & Sivasubramaniam, 2003) as well as offering meaningful rewards when tasks are completed (Andrews, Richard, Robinson, Celano & Hallaron, 2012).
- Management-by-exception (active): Active leaders try to avoid a serious problem in advance, and set clear rules and alerts based on regular checks (Judge & Piccolo, 2004).

Transformational leadership focuses on harmonising relationships between the leaders and subordinates. A transformational leader motivates followers to perform and realise their full potential by providing direction (Huber, 2010). Belias and Koustelios (2014:187) emphasise that transformational leaders look beyond their self-interest, and commit their followers to greatness by inspiring them. Birasnav (2014:205) states that top management should exhibit transformational leadership while implementing strategies in the organisation. Cossin and Caballero (2013:5) mention that transformational leaders can make a success of a weak business plan and create a positive situation by encouraging employees to be creative in problem-solving situations. Transformational leadership consist of five sub-styles:

- Idealised influence (attributed): The leader who possesses charisma is perceived to have confidence (Antonakis *et al.*, 2003).
- Idealised influence (behaviour): The leader believes in him or herself all actions are according to personalise values and purposes.
- Inspirational motivation: The leader empowers and motivates followers, is optimistic, and demonstrates faith in achieving goals and visions (Avolio & Bass, 2004).
- Intellectual stimulation: The leader obtains ideas from their subordinates, engages with their followers, and guides them to find new processes (Kirkbride, 2006).
- Individual consideration: The leader has knowledge of his or her followers, takes into consideration that the followers have strengths, reserves and needs, and accentuates their irreplaceability (Avolio & Bass, 2004).

In contrast to the above two leadership styles, passive avoidant leadership is reflected by high levels of avoidance, employees being left alone to accomplish their tasks, indecisiveness, and indifference (McColl-Kennedy & Anderson, 2005:115). Passive avoidant leaders do not exhibit proactive leadership and they delay reacting to urgent matters (Grill, Nielsen, Grytnes, Pousette & Törner, 2019). This leadership style tends to avoid interaction with their followers and maintain great social distances (Hinkin & Schriesheim, 2008:501). Leaders practising this leadership style provide inadequate guidance and, thus, often bring about ineffective supervisor-subordinate relationships (Antonakis & House, 2014:746). Goodnight (2011:822) alludes to the fact that the passive avoidant leadership style is more effective in organisations with qualified employees who have the autonomy to perform the duties on their own. According to Alloubani (2016), passive avoidant leadership consists of two substyles:

- Management-by-exception (passive): The leader acts passively and acts only when the problem has already transpired.
- Laissez-faire: The leader does not lead and avoids responsibility.

5.2 Previous studies on demographic variables and leadership

Previous studies on whether there are demographic differences pertaining to how South African HR professionals perceive their leadership styles could not be found. This section consists of relevant studies conducted in any environment and country.

5.2.1 Previous studies on age and leadership

Wegge, Schmidt, Piecha, Ellwart, Jungmann, and Liebermann (2012) state that researchers have defined three sub-dimensions of age differentiated leadership: leadership focused on younger employees (e.g., giving younger employees the support that they need), leadership focused on older employees (e.g., involving older employees in the discussion of upcoming changes at work), and an approach to leadership that balances the needs of both younger and older employees (e.g., promoting a positive 'togetherness' between younger and older employees). According to the study by Larsson and Björklund (2021), the younger group of leaders (29 years old or younger), rated themselves more negatively than the mid-aged (30 to 50 years), and older (51 years or older) leaders. Badura, Grijalva, Newman, Taiyi Yan, and Jeon (2018) state that a gender gap is expected to have declined over time but that a contemporary gender difference remains in leadership emergence. In the study of Larsson and Björklund (2021), young male leaders scored higher in transactional leadership. Sürücü et al. (2018) found that age was significantly related to transactional and transformational leadership. From this information the following hypotheses were derived:

- H₁: There is a significant difference in how HR professionals from different age groups perceive leadership.
- H₂: There is a significant relationship between age and leadership.

5.2.2 Previous studies on gender and leadership

According to Badura et al. (2018), differences in how gender groups perceive leadership leads to a gender gap. Sürücü et al. (2018) found that gender is significantly related to transactional and transformational leadership. Werdhani et al. (2018) found that there was a positive and significant correlation between transformational leadership and gender. From this information, the following hypothesis was derived.

- H₃: There is a significant difference in how HR professionals from different gender groups perceive leadership.

5.2.3 Previous studies on length and leadership

Koziel, Friedrich, Rudolph, and Zacher (2021) found that there is relationship between length of employment and leadership. In the study of Werdhani, Sulistomo, Herqutanto, Wirawan, Rahajeng, Sutomo, and Mansyur (2018), there was a positive and significant correlation between transformational leadership and length of employment. Sürücü, et al. (2018) found that length of employment was significantly related to transactional and transformational leadership. From this information, the following hypothesis was derived.

- H₄ There is a significant relationship between length of employment and leadership.

5.2.4 Previous studies on highest qualification and leadership

Sürücü et al. (2018) found that there was no relation between transactional leadership and transformational leadership and education level. Limited studies were available on this variable and its relationship with leadership. From this information, the following hypothesis was derived.

- H₅ There is a significant relationship between highest qualification and leadership.

6. Research Methodology

6.1 Research Design

This study was conducted within a positivistic paradigm, using a cross-sectional research design and a quantitative research approach.

6.2 Sample

The South African Board for People Practices (SABPP) aims to professionalise the HR function (SABPP, 2022) and the Institute of People Management provides knowledge and tools for strategic and operational people management and development (IPM, 2022). The population of this study consisted of human resources professionals registered with the IPM, with a membership pool of 2013 and the SABPP with a membership pool of 6 906. The professional bodies sent the questionnaire link to all their members and 205 questionnaires were received back. This sample size is accepted according to the sample guidance of Bartlett, Kotrlik and Higgins (2001).

6.3 Measuring Instrument

The Multifactor Leadership Questionnaire (MLQ), as employed by Avolio and Bass (2004), was used in its original form to measure leadership consisting of transformational, transactional, and passive avoidant leadership factors.

6.4 Reliability and Validity

According to Nunnally (1978), a Cronbach's alpha of 0.7 and higher represents good or high internal consistency and reliability. The alpha coefficient of the leadership factor had an acceptable Cronbach alpha score of 0.845, where all the individual items contribute well to the total reliability. A factor analysis was not conducted, because the leadership is an existing questionnaire and the factors (transformational, transactional, and passive avoidant leadership) therefore have already been identified. To ensure content validity, 14 HR experts (8 experts were from academia and 6 experts were from industry) examined the questionnaires to see if any improvements were needed but no improvements were suggested.

6.5 Data Collection

The Faculty Committee for Research Ethics, with Ref #: FCRE2017/FR/08/006-MS (2), granted approval for this study. The researcher had to ensure that the data collection process followed the prescribed procedure. Permission was obtained from the SABPP and the IPM for the distribution of the research questionnaire to its members. The survey itself was created in Survey Monkey in an online format and the link was sent to the SABPP and IPM members to complete the research questionnaire.

6.6 Data Analysis

ANOVA and a t-test were used to determine the demographic differences in leadership. When ANOVA and a t-test were conducted to test for statistically significant differences between demographic characteristics and leadership, significant differences were identified when the p-value stabilised at < 0.05 . The p-value allows the assessment of whether or not the groups differ significantly from one another. If this probability is lower than the conventional 5% ($p < 0.05$), the difference is statistically significant (unlikely to have arisen by chance). Smaller p-values ($p < 0.01$) are sometimes called highly significant because they indicate that the observed difference would happen less than once in a hundred times if there was really no true difference. In conclusion, a significance value below 0.05 is an indication of significant differences between the variables and a significance value over 0.05 is an indication of no significant differences between variables.

A correlation analysis was conducted to determine the relationship between leadership and the demographic variables. The Spearman Rho between leadership and the demographic variables was conducted. Seminal author Cohen (1988) suggests that a small relationship is represented by an r ranging from 0.10 to 0.29, a medium correlation is identified by an r ranging from 0.30 to 0.49, and a large and significant relationship is identified by an r ranging from 0.50 to 1.0. An R -value of 1 indicates a perfect positive correlation, while -1 indicates a perfect negative correlation, 0.5 indicates

a moderate positive correlation, -0.5 indicates a moderate negative correlation, and 0 shows no correlation. The larger the absolute value of the coefficient, the stronger the relationship between the variables. The table below illustrates correlations between the variables. Since any correlation that is greater than 0.5 is large, according to Cohen (1988), this value will be considered a practically large correlation.

7. Results and Findings

First, the profile of the respondents is briefly discussed and thereafter the ANOVA, t-test, and correlation analyses.

The age distribution of 15.8% were in the 18 to 30 age category, 27.7% were in the 31 to 40, 37.7% were in the 41 to 50, and 22.8% of the respondents were 51 years and above. The highest number of responses were in the 41 to 50 age category. Regarding the length of employment, the respondents with between six and ten years and eleven- and twenty years' work experience; each equally accounting for 25.4% (52) of the total respondents. With reference to the qualifications, the results provided show the highest on the list for the level of qualifications at 29.8%, 61 respondents had a bachelor's degree/BTech. Interestingly, more males than females participated in this study which indicates that the significant number of females in the HR profession is expanding. On the employment status, the results display that 86.8% (178) of the respondents were permanently employed. Lastly, most of the respondents resided in Gauteng. This illustrates that HR professionals seek new opportunities in Gauteng, which impacts negatively on the skilled professionals in other provinces.

Table 1 presents the ANOVA for age.

Table 1: ANOVA - significant discrepancy for different age groups

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Transformational leadership	Between Groups	1.734	3	0.578	3.800	0.011
	Within Groups	29.954	197	0.152		
	Total	31.687	200			
Transactional leadership	Between Groups	1.615	3	0.538	2.318	0.077
	Within Groups	44.609	192	0.232		
	Total	46.225	195			
Passive avoidant leadership	Between Groups	1.568	3	0.523	1.097	0.352
	Within Groups	90.550	190	0.477		
	Total	92.118	193			
	Total	147.490	196			

Source: Own compilation

From the results in table 5.137, it is clear that age differed significantly in transformational leadership indicated that $p = 0.011 (< 0.05)$, which was a statistically significant difference of $F(3.800)$. There were no significant differences between age and transactional leadership, and between age and passive avoidant leadership. The nature of these differences was explored by means of post hoc tests, reported in Table 2.

Table 2: Post Hoc tests - multiple comparisons of age groups (n=205)

Scheffe's test							
Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Transformational leadership	18-30	31-40	-0.114	0.087	0.633	-0.358	0.131
		41-50	-0.085	0.084	0.793	-0.321	0.151
		51+	-.28089*	0.090	0.022	-0.534	-0.028
	31-40	18-30	0.114	0.087	0.633	-0.131	0.358
		41-50	0.029	0.071	0.983	-0.171	0.228
		51+	-0.167	0.078	0.207	-0.387	0.053
	41-50	18-30	0.085	0.084	0.793	-0.151	0.321
		31-40	-0.029	0.071	0.983	-0.228	0.171
		51+	-0.196	0.074	0.078	-0.406	0.014
	51+	18-30	.28089*	0.090	0.022	0.028	0.534
		31-40	0.167	0.078	0.207	-0.053	0.387
		41-50	0.196	0.074	0.078	-0.014	0.406
Transactional leadership	18-30	31-40	-0.030	0.109	0.994	-0.338	0.277
		41-50	-0.016	0.105	0.999	-0.312	0.280
		51+	-0.231	0.112	0.239	-0.547	0.085
	31-40	18-30	0.030	0.109	0.994	-0.277	0.338
		41-50	0.014	0.089	0.999	-0.237	0.265
		51+	-0.201	0.097	0.238	-0.475	0.073
	41-50	18-30	0.016	0.105	0.999	-0.280	0.312
		31-40	-0.014	0.089	0.999	-0.265	0.237
		51+	-0.215	0.093	0.150	-0.476	0.047
	51+	18-30	0.231	0.112	0.239	-0.085	0.547
		31-40	0.201	0.097	0.238	-0.073	0.475
		41-50	0.215	0.093	0.150	-0.047	0.476
Passive avoidant leadership	18-30	31-40	0.126	0.158	0.889	-0.321	0.572
		41-50	0.062	0.152	0.983	-0.367	0.491
		51+	-0.117	0.162	0.913	-0.574	0.340
	31-40	18-30	-0.126	0.158	0.889	-0.572	0.321
		41-50	-0.064	0.128	0.970	-0.425	0.298
		51+	-0.243	0.140	0.390	-0.637	0.151
	41-50	18-30	-0.062	0.152	0.983	-0.491	0.367
		31-40	0.064	0.128	0.970	-0.298	0.425
		51+	-0.180	0.133	0.609	-0.554	0.194
	51+	18-30	0.117	0.162	0.913	-0.340	0.574
		31-40	0.243	0.140	0.390	-0.151	0.637
		41-50	0.180	0.133	0.609	-0.194	0.554

Source: Own compilation

For transformational leadership, the difference was between the 51-plus age group and the 18 to 30 age group. For transactional leadership and passive avoidant leadership, there were no significant differences in the perceptions from different age groups.

The table below illustrates the gender results. The t-test is used to assess the equality of means for a variable calculated for two or more groups.

Table 3: Levene's Test for equality of variances for leadership

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Transformational	Equal variances assumed	1.166	0.281	-0.311	201	0.756	-0.01739	0.05586	-0.12753	0.09276
	Equal variances not assumed			-0.312	198.475	0.755	-0.01739	0.05574	-0.12730	0.09253
Transactional	Equal variances assumed	1.895	0.170	-0.774	196	0.440	-0.05557	0.07182	-0.19721	0.08607
	Equal variances not assumed			-0.776	193.346	0.439	-0.05557	0.07159	-0.19677	0.08563
Passive avoidant leadership	Equal variances assumed	0.243	0.623	-1.185	194	0.238	-0.11774	0.09940	-0.31378	0.07829
	Equal variances not assumed			-1.186	192.118	0.237	-0.11774	0.09927	-0.31355	0.07807

Source: Own compilation

There are two parts for testing a hypothesis using 'independent sample' t-tests. The first part is Levene's Test for Equality of Variance and the second part is the t-test for Equality of means. One of the assumptions of the t-test is that the variances of the 2 groups are equal. This assumption is met in the case of all the scales. The study has shown that the t-test was not significant for leadership ($p > 0.05$). Therefore, it is concluded that there are no significant differences between gender and leadership.

The relationship between age and leadership is presented in table 4.

Table 4: The relationship between age and leadership

Correlations			
			Age
Spearman's rho	Age	Correlation Coefficient	1.000
		Sig. (2-tailed)	
	Transformational	Correlation Coefficient	0.188
		Sig. (2-tailed)	0.007
	Transactional	Correlation Coefficient	0.197
		Sig. (2-tailed)	0.006
	Passive avoidant leadership	Correlation Coefficient	0.061
		Sig. (2-tailed)	0.397

Source: Own compilation

The results in table 4 reveal that there was no significant relationship between age and leadership.

In table 5 the relationship between highest qualification, length of employment and leadership is presented.

Table 5: The relationship between length of employment and highest qualification and leadership

			Highest qualification	Length of employment
	Transformational	Correlation Coefficient	0.201	0.160
		Sig. (2-tailed)	0.004	0.023
	Transactional	Correlation Coefficient	0.125	0.097
		Sig. (2-tailed)	0.080	0.172
	Passive avoidant leadership	Correlation Coefficient	0.022	0.080
		Sig. (2-tailed)	0.762	0.268

Source: Own compilation

Table 5 reflects the correlation levels between the highest qualification and leadership. It was clear that there was not a significant relationship. Highest qualification can, therefore, not be seen as a variable that relates to leadership. Table 6 also shows the relationship between length of employment and leadership. There was not a significant relationship. Length of service can, therefore, not be seen as a variable that relates to leadership.

In table 6, a summary of the hypotheses outcomes (accept/reject) is presented.

Table 6: Summary of the hypotheses outcomes

Hypotheses	Accept/Reject
H ₁ : There is a significant difference in how HR professionals from different age groups perceive leadership.	Accept (only for transformational leadership)
H ₂ : There is a significant relationship between age and leadership.	Reject
H ₃ : There is a significant difference in how HR professionals from different gender groups perceive leadership.	Reject
H ₄ : There is a significant relationship between length of employment and leadership.	Reject
H ₅ : There is a significant relationship between highest qualification and leadership.	Reject

For transformational leadership, the difference was between the 51-plus age group and the 18 to 30 age group. Larsson and Björklund (2021) also found significant differences between age and leadership in their study.

There was not a significant difference in how HR professionals from different gender groups in South Africa perceive leadership. This finding contradicts the findings of Sürücü *et al.* (2018), Badura *et al.* (2018) and Larsson and Björklund (2021) who found differences in how young male leaders perceived leadership. That said, these studies were not conducted in South Africa, and neither were cited in the rest of this section.

There was not a significant relationship between age and leadership in this study. This finding contradicts the findings of Werdhani *et al.* (2018) and Sürücü *et al.* (2018) who found that age was significantly related to leadership.

There was not a significant relationship between length of employment and leadership in this study. This finding contradicts the finding of Koziel *et al.* (2021), Werdhani *et al.* (2018) and Sürücü, *et al.* (2018) who found that length of employment was significantly related to leadership.

In this study, there was not a significant relationship between highest qualification and leadership. Sürücü *et al.* (2018) also found that there was no relationship between transactional leadership and transformational leadership and education level.

This conclusion means that there were no significant relationships between the demographic groups and leadership as well as no significant differences. Only HR professionals older than 51 and between the ages of 18-30 perceived transformational leadership differently but they did not perceive

transactional leadership and passive avoidant leadership in a different manner. Age is therefore an important characteristic when it comes to the transformational leadership of HR professionals. On preparing the workplaces for digital transformation on multi-level factors, analysis has highlighted the importance of demographic factors in the perception of leaderships needs to be viewed in the context of the individual, group, and organisational levels. Social norms and peer and management support may influence group outcomes such as adaptability, empowerment and participation, team effectiveness and resilience. At the individual level, factors such as age, gender, education, experience and skill levels, job type, job tasks and personality are all probable factors to play a role in digital transformation outcomes. Factors such as work-related well-being, and stress, task performance, productivity, organisational commitment and turnover, job satisfaction all plays and significant role. At the organisational level, leadership, organisational culture and climate are likely to influence digital transformation outcomes, yet may be moderated by factors such as human resource management, support for training, and organisational setting.

A limitation of this study is that it was cross-sectional in nature and cannot be generalised to all South African HR professionals and other professional HR bodies in the world.

There were no significant differences and relationships in how the respondents perceived leadership (transformational and passive avoidant) except for transformational leadership, the difference was between the 51-plus years old age group and the 18 to 30 age group. These differences must be managed in order to ensure that there is an alignment in how operational and strategic HRM functions are planned and executed. It is recommended that the SABPP and IPM create an awareness of the importance of HR leadership in the workplace. Interventions and think tanks be implemented by the SABPP and IPM to obtain more information about how older and younger HR professionals perceive transformational leadership. Such interventions can also be implemented in organisations to improve HR leadership. It is also recommended that HR professionals acquire the necessary leadership skills to propel transformation in order to always successfully deal with changes in the workplace.

Future research can be conducted by using a qualitative research method to obtain rich data on why older and younger South African HR professionals perceive transformational leadership in different manners.

8. Managerial Implications

To summarise what the results mean in terms of actions, top management must be aware that HR professionals older than 51 and between 18 and 30 years of age may perceive transformational leadership in a different way. Transformational leadership is crucial in terms of managing change and is, thus, important to be aware of the differences between younger and older HR professionals. Older HR professionals may see charisma, their belief in themselves, their values and purposes, empowerment, achieving goals and visions, engagement, and knowledge of their followers as well as their irreplaceability differently than younger HR professionals. These differences must be managed in order to ensure that there is alignment in how operational and strategic HRM functions are planned and executed.

Human resource (HR) leaders struggled previously to ensure that employees possess the skills necessary for a digitised workplace and it has led to numerous HR challenges. HR leaders must in times of change and crisis management, think and act creatively and possess the ability to influence people to get a common vision to secure a desirable future. For managers to be effective leaders, they need to be charismatic, good communicators, inspirational and visionaries. In order to obtain a competitive advantage for the business, HR professionals should be leaders with a vision, inspire and engage regularly with management.

9. Conclusion

The present survey shows that age is an important demographic factor in transformational leadership perception. There were no significant differences and relationships in how the respondents perceived leadership (transformational and passive avoidant) except for transformational leadership. These

differences must be managed in order to ensure that there is an alignment in how operational and strategic HRM functions are planned and executed. Older HR professionals and younger HR professionals must be aware of the fact that they perceive transformational leadership in different ways. The future of HR lies in HR leaders who offer operational value, respond to demanding organisational challenges, and link human capital decisions with business strategy.

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Does Transformational Leadership Influence Both Talent Management and Work Engagement Of South African Automotive Artisans?

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Keywords

Automotive artisans,
Talent management,
Transformational
leadership, Work
engagement

Abstract

It is imperative to be aware of the influence that transformational leaders may or may not have on talent management and work engagement of artisans, as a scarce skill, within the South African automotive industry. This article focuses on determining if transformational leadership influences both talent management and work engagement of artisans in this industry. A survey research design and a quantitative research approach were utilised. This study was descriptive and cross-sectional. Structural equation modelling was used to analyse the data. The results show that transformational leadership influences talent management but not work engagement of artisans within the South African automotive industry. This study adds to the literature by highlighting the influence of transformational leadership on talent management but also the fact that this leadership style does not influence the work engagement of the craftspeople in this particular industry. Strategies, policies, and procedures must be developed and implemented to retain South African automotive industry artisans.

1 Introduction

Within the South African economy, the South African automotive industry is one of the most substantial segments (Sharma & Naude, 2021). According to Teti (2016), the South African artisan profession needs to expand and transform. Wildschut and Ralphs (2016) believe that there is a scarcity of artisans in South Africa. In order to be ready for the fourth industrial revolution, the reskilling of artisans within the South African automotive industry is essential (Hufkie, 2021). The retention of skilled and engaged employees requires an empowering and positive leadership style (Mey, Poisat & Stindt, 2021). For organisational practice, it is important to understand that employees may experience fluctuating levels of engagement when performing their work. Research has shown that engaged workers are more inclined to help their colleagues (Bakker & Albert, 2018). However, it is also important to know the general levels of engagement and whether these levels can be influenced by human resources practices (Bakker & Albrecht, 2018) such as talent management. Talent management and work engagement will not be possible without such a proper and positive leadership style (Shikweni, Schurink & Van Wyk, 2019). Within the South African automotive industry, a transformation leadership style is essential to develop strategies to increase the work engagement of artisans and manage their talent.

The theoretical contribution of this study lies in the fact that new knowledge about transformational leadership and its influence on talent management, as well as its non-influence on work engagement within the South African automotive industry, has been developed. This study practically contributes to the adoption of a transformational leadership style to influence talent management among artisans in the automotive industry. New avenues need to be found to improve the work engagement of these artisans, as transformational leadership is found not to influence work engagement.

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2 Problem Investigated

Being an artisan or craftsman is scarce in South Africa and the retention of these employees is of utmost importance. Transformational leadership, talent management, and work engagement are seen as factors that can assist with the retention of artisans. As seen in the above section, studies were conducted to determine if transformational leadership influences talent management and work engagement but it is not clear if this will be the case within the South African automotive industry. It is unclear if transformational leadership influences both talent management and work engagement in the South African automotive industry, and this is a problem this study seeks to address. The question therefore arises: Does transformational leadership influence both talent management and work engagement? This study aims to assist with answering this research question and closing this research gap.

3 Research Objectives

The research objective of the study is to determine if transformational leadership influences talent management and work engagement.

4 Hypotheses

The following hypotheses were formulated for the study:

- H₁: Hypothesis 1: Transformational leadership influences talent management
- H₂: Hypothesis 2: Transformational leadership influences work engagement

5 Literature Review

The organisational behaviour theory refers to the study of human behaviour in a business environment. Organisational behaviour is a multi-disciplinary field that aims to investigate human behaviour in organisational settings and is concerned with studying individual, group, and organisational processes, while also incorporating concepts and processes within society (Mahek, 2019). Robbins (cited in Mahek, 2019) describes organisational behaviour as the field of a study aiming to obtain knowledge regarding the impact that groups, individuals, and structures have on behaviour within organisations in order to apply this knowledge towards improving the effectiveness of the organisation. The study of organisational behaviour is applied to HRM functions and its related subjects help us understand how people in organisational environments think, feel and act (Shanaz, Dlvn & Vala, 2020). The organisational behaviour theory is a branch of academic study that aims to investigate how and why people act in certain ways within different types of professional groups.

Pfeffer (2007) mentions three aspects of the organisational behaviour theory:

- As social beings, people prefer to interact with one another and are affected by others' opinions and actions.
- People are concerned about equality, fairness and justice.
- Organisations are embedded in a social context and are influenced by other organisations.

The three constructs (transformational leadership, talent management and work engagement) of this study fall within the organisational behaviour theory. The organisational behaviour theory was therefore used as a theoretical framework and underpinning theory for this study. Next, transformational leadership, talent management and work engagement and previous studies about the influence of transformational leadership on talent management and work engagement are discussed.

5.1 Transformational Leadership

Leadership is the capacity to influence others through inspiration not manipulation (Munroe, 2014). The impact of leadership on employees' behaviour and organisational operations and outputs is the focus of management theorists (Samimi, Cortes, Anderson & Herrmannet, 2021). Although the concept of leadership has been contested over the past decade, empirical evidence shows that transformational leadership characterises an effective form of leadership at the organisational, sectorial and national levels (Gyensare, Otoo, Asare & Twumas, 2016). Charisma and vision are associated with transformational leadership (Gellis, 2001).

The creation of a vision and the formation of guidelines to achieve goals can inspire others to achieve their goals (Antonopoulou, Halkiopoulos, Barlou & Beligiannis, 2021). Transformational leadership is a style of leadership that inspires followers to transcend their self-interests by changing their morale, ideas, interests and values, and motivates them to perform better by pursuing collective goals (Bass, Avolio, Jung & Berson, 2003). Transformational leadership aims to transform the goals and values of followers and motivate them to perform beyond their expectations by inspiring their confidence in their capabilities (Bass & Riggio, 2006). A transformational leader should engage followers in a relationship in which both parties motivate each other to higher performance and moral purpose (Lajoie, Boudrias, Rousseau & Brunelle, 2016). Transformational leadership behaviour directly influences employee performance. Nikezić, Purić, and Purić (2012:288) add that transformational leaders challenge prevailing beliefs, values, goals, and patterns, and then establish alternatives that promote the commitment of subordinates. Avolio, Waldman and Yammarino (1991) mention the dimensions of transformational leadership:

- Idealised influence: social and moral actions as well as the eagerness to execute the organisation's strategy.
- Inspirational motivation: being able to share an appealing and value-adding vision.
- Intellectual stimulation: permitting others to obtain knowledge.
- Individualised consideration: give others a sense of ownership in the organisation's goals.

5.2 Talent Management

Silzer and Dowel (2010) state that talent management is all about strategies to implement recruitment, development, management, and the retention of talent to achieve organisational goals. The attraction, development and retention of technical and managerial talent are essential for top management (Alic, 2016). While this challenge is not a new one for senior leaders, it has become more critical than ever, due to the technology, business model, and consumer-preference disruptions affecting the automotive industry (Doucette, Hensley, Kaas & Rittstieg, 2020). There must be a relative degree of growth in talent (Alic, 2016; Abdollahbeig, 2017). Talent is about developing employees so that they can execute their duties in an innovative manner (Rodrigues & Rebelo, 2019). Kafetzopoulos and Gotzamani (2022) summarise talent management as (includes recruitment and selection activities), developing (includes training and career development activities) and retaining (includes satisfaction and compensation activities).

Top management has to make deliberate and organised efforts to optimally attract, develop and retain competent and committed employees who bear significant influence on the overall sustainable performance of the organization (Thunnissen, 2016). Talent management is of strategic importance for human resource management, particularly as a euphemism for "people" as resources that are simultaneously unique, valuable, rare and inimitable (Lewis & Heckman, 2006). There are three talent management perspectives according to Lewis and Heckman (2006):

- The practices and activities of the human resource department.
- A primary focus on the concept of talent pools by concentrating on the internal workforce.
- A focus on high-performing talent and generic talent.

Doucette *et al.* (2020) found that the HR strategy must be linked to talent and the workforce must be up-skilled and reskilled in order to ensure productivity.

5.3 Work Engagement

Over the past two decades, the number of studies on work engagement has increased rapidly. One reason why work engagement is such a popular concept is that it is a very good predictor of employee, team, and organisational outcomes (Bakker & Albrecht, 2018). Schaufeli (2012) points out that the concept of work engagement, first emerged in the nineties. Work engagement is usually referred to as a positive mental state – being connected to work. An indicator of good mental health is employees' work engagement (Schaufeli, Taris & Van Rhenen, 2008). Schaufeli and Bakker (2010:11) state that

“work engagement refers to a positive, affective-motivational state of high energy combined with high levels of dedication and a strong focus on work”. Daily engagement refers to daily levels of vigour, dedication, and absorption that may fluctuate as a function of daily demands, resources, and proactive behaviours (Bakker & Albrecht, 2018). Dedication, vigour and absorption should be visible in workers whilst working (Schaufeli, Salanova, Gonz ales-Rom a & Bakker, 2002). Vigour and dedication are the main dimensions of work engagement (Schaufeli, 2013). Vigour is about the mental energy and the discretionary effort of workers (Schaufeli *et al.*, 2002; Sonnentag, 2017). Dedicated workers are adding value to the organisation (Sonnentag, 2017). Absorption necessitates involvement in doing job-related tasks in the workplace (Schaufeli, Martinez, Pinto, Salanova & Bakker, 2002). Bursts of energy and enthusiasm are part of being engaged in one’s work (Bakker & Albrecht, 2018).

Bakker, Demerouti and Sanz-Vergel (2014) state that various research articles on conditions in the workplace play a role in the level of engagement. Research over the past decade has revealed that work engagement may fluctuate within persons – across time and situations (Bakker & Albrecht, 2018). Although Schaufeli and Bakker (2003) have argued that an overall score of work engagement may be equally useful in empirical research, in order to fully understand how organisational identification affects engagement, it is important to understand its relationships with the three specific dimensions of engagement (Karanika-Murray, Duncan, Pontes & Griffiths, 2015).

This study aims to give insights into the interplay between transformational leadership, talent management and work engagement by examining the influence of transformational leadership on both talent management and work engagement.

5.4 Previous Studies about the Influence of Transformational Leadership on Talent Management and Work Engagement

Studies about the influence of transformational leadership on talent management are limited, but there are several studies about the influence of transformational leadership and work engagement. The relationship between talent management and leadership in any organisation is considered a positive relationship (Irtaimah, Al-Azzam & Khaddam, 2016). Sadeli (2012) found that transformational leadership influences talent management, and Schinzel (2022) found that there is a link between talent management and responsible leadership. The findings of Gautam and Enslin (2019) indicate that transformational leadership moderately predicted work engagement more than transactional leadership.

An increasing number of studies suggest that transformational leadership influences work engagement (Breevaart, Bakker, Hetland, Demerouti, Olsen & Espevik, 2013; Tims, Bakker & Xanthopoulou, 2011; Tuckey, Bakker & Dollard, 2012). Transformational leadership influences engagement in the hospitality industry in Sri Lanka (Thisera & Sewwandi, 2018) which is consistent with earlier studies by Ree and Wiig (2019), Breevaart, Bakker, Hetland, Demerouti, Olsen and Espevik (2013), Datche and Mukulu (2015), as well as Tims, Bakker and Xanthopoulou (2011) where transformational leadership influences work engagement.

6 Research Methodology

A survey research design within the positivistic research paradigm and a quantitative research method were employed. This study was descriptive and cross-sectional.

6.1 Sampling

Artisans from 152 automotive organisations participated in this study. All the brands from the nine South African provinces were part of this study. The population consisted of 1 045 artisans that were employed within the South African automotive industry. Purposive sampling was used to select the artisans that were compelled to attend training at three different training venues in South Africa. A total of 609 respondents completed the questionnaires. More male respondents (96.72%) than female respondents (3.28%) participated in the study. The majority of the respondents were African with 43.64%, followed by their white counterparts with 31.74%, mixed races represented 15.87% and the remaining 8.76% represented Indian participants. There were 34 (5.6%) respondents in the age group

of 31-40 years, 13 (2.1%) respondents were in the age group 41-50 years old and only 2 (0.3%) respondents were older than 51 years. The majority of the respondents (56.83%) possess a grade 12 certificate and 17.7% an N4-N6 (National) qualification. The data showed that 77.80% of the respondents who completed the questionnaire had tenure of service between 1 and 5 years, 14.50% less than 1 year, 5.9% between 6 and 10 years of service, 1% between 11 and 20 years of service, 0.3% between 21 and 30 years of service and 0.50% had more than 31 years of service. Lastly, there were 78.9% vehicle petrol mechanics 78.9% compared to vehicle diesel mechanics who were 18.5%. Vehicle spray painter was only 1% and the other individual fields of artisan work were less than 1% each.

6.2 Measuring Instrument

A 5-point Likert scale was used as follows: 1 – Completely disagree; 2 – Partially disagree; 3 – Uncertain; 4 – Partially agree; 5 – Completely agree.

The results presented in Table 1 showed that the Cronbach's alpha values for all the variables are between the cut-off point of 0.5 and 0.7. The Dillon-Goldstein's rho for all the variables was above 0.7 which indicates homogeneity of the factor. The results suggest that all the variables are reliable regarding internal consistency. The quality of a measurement model was examined by testing the convergent validity, which shows the degree to which the indicators under the constructs are related. Convergent validity shows the amount of variance the indicators have in common: high factor loading and average variance extracted (AVE). According to Hair, Sarstedt, Hopkins and Kuppelwieser (2014:106) "AVE loadings above 0.5 are indicators of convergent validity". The results displayed in Table 1 indicate that the AVE loadings were above 0.5, except for continuance commitment with 0.3. The final model factor loadings are also reported in Table 1.

Table 1: Internal consistency of the questionnaire

Variable		Number of items	Cronbach's alpha	Composite reliability	Average variances extracted
Talent management 1: Performance planning and motivational processes	TM1	16	0.954	0.958	0.588
Talent management 2: Career development	TM2	4	0.751	0.848	0.571
Transformational leadership	TL	21	0.977	0.978	0.678
Work engagement 1: Vigour	WE1	5	0.903	0.903	0.648
Work engagement 2: Dedication	WE2	5	0.851	0.851	0.588

6.3 Data Collection

The questionnaires were distributed to the artisans who attended the aforementioned training sessions. To ensure confidentiality and anonymity, sealed boxes were used for the deposit of the completed questionnaires and informed consent letters. Different boxes were used for the informed consent forms.

6.4 Data Analysis

For data analysis, the Stata version 15 statistical analysis software was used. The demographic statistics were presented in frequencies and percentages. "The structural equation modelling (SEM), using the partial least squares path modelling approach (PLS-PM), was performed (Hair, Sarstedt, Hopkins & Kuppelwieser, 2014). Salkind (2016) highlighted structural equation modelling (SEM) as an umbrella term for techniques such as regression, factor analysis and path analysis. Bootstrapping was used to estimate the parameters and associated standard errors in the direct and indirect effect in the statistical analysis of the SEM through the non-parametric method.

7 Results and Findings

To determine if talent management predicted transformational leadership and work engagement, the direct relationship estimation of parameters and associated standard errors were reported in Table 2.

In this analysis, the identification of a loading close to 1 indicates a strong relationship, with the percentage (perc.) 0.975 equal to a 95% confidence interval. Further loadings with a zero involved in the reading of the interval [-0.068:0.154] became insignificant. Furthermore, bootstrapping was used to estimate the parameters and associated standard errors.

Table 2: Direct relationship estimation of parameters and associated standard errors

Variable			Original loading	Mean Boot	Std Error	Perc.025	Perc.975
TL	>	TM1	0.724	0.726	0.0261	0.674	0.774
TL	>	TM2	0.587	0.586	0.029	0.530	0.640
TL	>	WE1	0.022	0.024	0.048	-0.079	0.102
TL	>	WE2	0.051	0.054	0.058	-0.058	0.164

Table 2 indicates the different paths resulting from the statistical results. It was clear that transformational leadership predicted talent management (performance planning and motivational processes) (0.724). Transformational leadership was not a predictor of vigour as part of work engagement (0.022) and dedication as part of work engagement (0.051).

Structural Equation Model Assessment

The structural model was used to determine the model's explanatory power to test the developed hypothesis about the relationships among the factors. The model's explanatory power was assessed through the coefficient of determination (R^2), redundancy index and goodness of fit index.

The R^2 (R square) Determination Coefficients

R^2 indicates the amount of variance in the endogenous latent variable explained by its independent latent variables. Hair Jr, Sarstedt, Hopkins and Kuppelwieser (2014), considered R^2 values of 0.75, 0.50, and 0.25 for the dependent variables as substantial, moderate, and weak, respectively. However, Sánchez Hernández, Carvalho, Costa and Gallarde Vázquez (2015) considered R^2 values of $>.60$ as high, between 0.30 and 0.60 as moderate and below 0.30 as low.

Table 3: The R^2 (R square) determination coefficients

Variable	R^2 value loading
TL	0
TM1	0.524312
TM2	0.344336
WE1	0.364606
WE2	0.19382

The R^2 values, as shown in Table 3 are low. The R^2 for the inner model is low for attitude, behavioural intention to use and individual uses. The R^2 for TL is 0, this means that TM explain 52% and TM2 explain 34% of the variation in TL. According to Sánchez Hernández *et al.* (2015), the variation in TL is explained to a moderate degree. WE1 and WE2 factors are 0.364 and 0.193 respectively; this means that the factors WE1 and WE2 explain 36.4% and 19.3% of the variance in TL. These loadings are weak according to Hair *et al.* (2014).

The Redundancy Indexes

Redundancy measures the percentage of the variance of indicators in an endogenous block that is predicted from the independent latent variables (TM1, TM2, TL, WE1 and WE2) associated with the endogenous latent variables (LV). Another definition of redundancy is the amount of variance in an endogenous construct explained by its independent latent variables. In other words, it reflects the ability of a set of independent latent variables to explain variation in the dependent latent variable (Suzukawa & Taneichi, 2002).

High redundancy means high the ability to predict. In particular, the researcher may be interested in

how well the independent latent variables predict values of the indicators' endogenous construct. Analogous to the communality index, one can calculate the mean redundancy, that is, the average of the redundancy indices of the endogenous blocks (Table 4).

Table 4: The redundancy indexes

Latent Variable	Mean Redundancy
TL	0
TM1	0.308221
TM2	0.196466
WE1	0.23637
WE2	0.113829

The redundancy values for the endogenous latent variables are very low, which shows that the latent independent variables explain an infinitely small amount of the variance in the endogenous latent variables.

The Goodness of Fit (GoF)

The goodness of fit (GoF) can be used as a global criterion that helps to assess model performance. From this point of view, a GoF value of 0.78 could be interpreted as if the prediction power of the model is 78%. The naive rule of thumb is the higher, the better. Acceptable 'good' values within the PLS-PM community are GoF >0.7. The GoF index of 0.4742828 for the whole model is well below the suggested cut-off of 0.70 but can be accepted because no comparisons have been done yet to other variables.

The outcomes of the hypotheses, as related to artisans in the South African automotive industry, were as follows:

- Hypothesis 1: Transformational leadership influences talent management – Accepted.
- Hypothesis 2: Transformational leadership influences work engagement – Rejected.

In this study, leadership predicted talent management (performance planning and motivational processes). Transformational leadership also predicted career development as part of talent management. Sayyam, Adil and Hamayun (2020) found that transformational leadership was a moderator between talent management and employee innovative work behaviour, but not a predictor. Irtaimah et al. (2016) found that the relationship between talent management and leadership is positive.

Transformational leadership was not a predictor of vigour as part of work engagement and dedication as part of work engagement. This finding deviates from the findings of Thisera and Sewwandi (2018), Breevaart et al. (2013), Datche and Mukulu (2015), as well as Tims, Bakker and Xanthopoulou (2011) who, in their studies, found that transformational leadership influences engagement.

This conclusion means that transformational leadership's influence on talent management is an essential dimension for management and human resources (HR) of the South African automotive industry as well as adding value to the body of knowledge within the organisational behaviour theory. In order to properly deal with talent management, it is important to note that when it comes to influencing this process in a positive manner, a transformational leadership style will be appropriate and value-adding. Leadership behaviours associated with the transformational leadership style were noted in the study to be relevant in retaining talented employees. Transformational leaders bring talent to life. A transformational leadership style however does not influence the work engagement of artisans in this automotive industry.

A limitation of this study is that it was cross-sectional in nature and cannot be generalised to all the artisans in the South African automotive industry.

It is recommended to develop and implement strategies, policies, and procedures to retain artisans in the South African automotive industry. Transformational leadership styles among managers need to be developed to impact talent management among artisans in the automotive industry. New avenues need to be found to improve the work engagement of these artisans as transformational leadership does not influence work engagement in this environment.

For future research, this study can be duplicated in other countries' automotive industries in order to compare the findings. A study can be conducted to determine if talent management perhaps moderates the work engagement and transformational leadership among artisans in order to further investigate the relationship between these three variables. A qualitative study can be executed to acquire a wide variety of views on leadership, talent management and work engagement of the artisans in the South African automotive industry.

8 Managerial Implications

Technology is dramatically changing how people use cars. To stay competitive, automakers must embrace new methods of finding, hiring, and managing highly-skilled, digitally talented people. To improve the managerial impact and to apply the research results, it is important for managers within the South African automotive industry to improve their transformational leadership style to positively influence the talent management of artisans. This leadership style will not, as seen in the results, necessarily impact the work engagement of artisans. Leaders often spend their time recruiting top talent. But transformational leaders recognise that talent hardly compares to perseverance. Transformational leaders should have a heightened level of engagement and desire to impact employees positively. They, therefore, have a higher degree of involvement in the success of the other person. Breevaart *et al.* (2014) accentuate the fact that if transformational leadership influences engagement, it impacts greatly on how to better manage engagement in the workplace.

9 Conclusion

The purpose of this study is to determine if transformational leadership influences both talent management and work engagement of artisans in the South African automotive industry. It was found that transformational leadership influenced talent management, but not work engagement. It is therefore of utmost importance for managers to ensure that talent management is in place in the automotive South African industry. Strategies, policies and procedures must be developed and implemented to retain South African automotive industry artisans.

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MARKETING MANAGEMENT



Predictors towards Actual Use of M-Commerce Apps – An Emerging African Market Perspective

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Keywords

m-commerce applications; athleisure apparel; actual use; facilitating conditions; habit; behavioural intention

Abstract

The fashion industry's growth is reflective of a global movement towards a more active lifestyle and the advent of "athleisure" apparel, namely exercising and general wear clothing. Although m-commerce application purchasing has increased, this is not evident for athleisure apparel in South Africa. Adopting the unified theory of acceptance and use of technology 2 (UTUAT 2) of Venkatesh, Thong and Xu (2012), using actual use as five unique binary outcomes, the model provided insight into consumers' acceptance and use of m-commerce apps to purchase athleisure apparel. Data were collected from 250 South African millennials subjected to an exploratory factor analysis and *t*-tests, indicating that behavioural intention is most likely to influence acceptance and use.

1. Introduction

The global fashion industry contributes 2% of the world's gross domestic product and employs more than 57.8 million people. The industry has grown at a consistent rate of 5.5% per annum over the last 10 years and is currently valued at over US\$3 trillion (FashionUnited, 2022). This growth has been attributed primarily to athletic wear, which generated around US\$353.5 billion during 2020 and is forecasted to continue growing to reach approximately US\$455.46 billion by 2027 (Smith, 2022). This growth is reflective of a global movement towards a more active lifestyle and the advent of "athleisure", a term used to describe clothing that can be used for both exercising and general wear (Amed, Berg, Brantberg & Hedrich, 2017; Trefis Team, 2016). Similarly, the athletic wear retail category in South Africa has grown by 36% over the past five years, and the major trend said to be fuelling this growth has been identified as athleisure (Euromonitor International, 2017a). However, these performance figures are primarily concentrated at physical retail outlets and not online, commonly referred to as e-commerce.

According to Amed, Andersson, Berg, Drageset, Hedrich and Kappelmark (2018), the global fashion industry finds itself in a pivotal developmental phase, where digital adoption among consumers is increasing rapidly and online sales of apparel and footwear are predicted to follow suit. Argyros (2017) stated that to ensure the continued existence and success of the retail industry, retailers need to implement new technologies in their approaches. South African consumers are becoming more technologically savvy and expect their retailer of choice to offer them multiple channels through which they can engage and make purchases. Consequently, a digital retailing channel, such as e-commerce or m-commerce, complements an existing physical presence and offers the retailer another means through which to drive sales and meet steep growth targets (Quinn, Biondi & Penmetcha, 2014).

Described as a business model that permits an organisation or individual to do business via an electronic medium, such as the Internet (Bloomenthal, 2019a), e-commerce has had a marked influence on the global retail industry. E-commerce retail sales worldwide grew by a phenomenal 72.5% from 2014 to 2017, amounting to US\$2.3 trillion in 2017; and 53.5% from 2017 to 2019, amounting to US\$3.53 trillion. This figure is predicted to grow by another 85.3% by 2022, amounting

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to US\$6.54 trillion (Statista, 2019a). One of the main drivers of this growth are international emerging markets, including India, Indonesia, and South Africa (Quinn et al., 2014; Statista, 2019b). According to Saleh (2017), at 15.6%, the United Kingdom (UK) has the highest percentage of e-commerce sales globally in relation to total retail sales. The UK is followed by China at 13.8%, Norway at 11.5%, Finland at 10.8%, and South Korea at 10.5%. Manson (2016) stated that emerging markets are reportedly sitting at an average of 5%–6%. However, this is not the case in South Africa.

In South Africa, e-commerce sales currently account for 1.4% of total retail sales (World Wide Worx, 2018). That being said, TechCentral (2017) forecasted exponential growth over the next decade. M-commerce, a form of e-commerce by means of a wireless handheld device, such as a smartphone (Bloomenthal, 2019b; Persson & Berndtsson, 2015), is forecasted to grow 200% faster than e-commerce (Cox, 2016). M-commerce is marked as the single biggest driver of online expenditure growth in South Africa (Smith, 2017).

Most South Africans access the Internet via their mobile phones (Space Station, 2017) and prefer to utilise apps to shop (“What’s driving online shopping in SA?”, 2015). However, of those who do shop via their mobile phones, the category of clothing and accessories does not feature prominently (Erken, 2017; Goldstuck, 2014). With athleisure being a major trend impacting global and local growth in the fashion industry (Amed et al., 2017; Euromonitor International, 2017b), it is imperative for South African fashion retailers selling athleisure apparel to understand the reasons for this low purchasing behaviour. This study provides insights into this phenomenon by determining the constructs that influence consumers’ acceptance and use of m-commerce apps to purchase athleisure apparel in South Africa.

2. Theoretical Framework

The unified theory of acceptance and use of technology 2 (UTAUT2) provides the theoretical foundation of this study. Miladinovic and Xiang (2016) stated that the UTAUT2 outperforms all other technology acceptance theories and models. According to Rondan-Cataluña, Arenas-Gaitán and Ramírez-Correa (2015), consumers’ acceptance and use of new technologies have been actively researched since the 1980s. Various different technology acceptance theories and models have been developed over the years aimed at finding and categorising constructs that influence consumers’ behavioural intention and actual use of technology (Agudo-Peregrina, Hernández-García & Pascual-Miguel, 2014). One such a theory, the UTAUT2, was developed by Venkatesh, Thong and Xu (2012:158) and attempts to ascertain the various constructs that influence consumers’ acceptance and use of new technologies, such as online or mobile shops, and forms the basis of the research model for this study.

Rondan-Cataluña et al. (2015) proved that the UTAUT2 has 26% better explanatory power from a consumer use point of view, compared to other technology acceptance theories and models. Marriott and Williams (2016) stated that the UTAUT2 has proven successful in explaining behavioural intention in the fields of mobile payments, mobile Internet, and mobile banking research. This view was supported by Slade, Williams and Dwivedi (2013), who stated that the UTAUT2 explains up to 52% of the variance on actual use.

The UTAUT2 identifies specific key constructs, namely performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit. The model then indicates how these constructs affect consumers’ behavioural intention to use a specific technology as well as their actual use (Miladinovic & Xiang, 2016; Venkatesh et al., 2012). Many studies have investigated the constructs that influence consumers’ behavioural intention to use new technologies (Chaouali, Yahia & Souiden, 2016; Miladinovic & Xiang, 2016; Shaw & Sergueeva, 2019), but few have investigated actual use in an emerging economy like South Africa. Actual use refers to an individual using, in the case of this study, m-commerce apps when purchasing athleisure apparel in South Africa (Davis, 1986). Therefore, this study focuses on the UTAUT2 constructs that influence actual use in particular – namely facilitating conditions, habit, and behavioural intention.

Venkatesh, Morris, Davis and Davis (2003) and Venkatesh et al. (2012) are the two main studies referenced in compilation of the scales for facilitating conditions, habit, and behavioural intention. The actual use construct was compiled by combining five items from different studies. Other studies referenced in the compilation of the various scales used only one item to measure actual use (Martins, Oliveira & Popovič, 2014; Venkatesh et al., 2003, 2012), but the researchers decided to extend the construct to include five items. This was intended to extract richer insights from consumers who had used m-commerce apps to purchase athleisure apparel.

3. Theoretical Model Development

3.1. The interrelationship between facilitating conditions and actual use

Facilitating conditions are defined as a consumer's perception of the resources and support available when performing a specific behaviour (Venkatesh et al., 2012:159). In the context of m-commerce, facilitating conditions refer to the online customer support available to the consumer (e.g., frequently asked questions on the company's website, an e-mail address and/or contact number) along with a working Internet connection enabling the consumer to browse and purchase items, as well as working knowledge of the technology (Madan & Yadav, 2018; Miladinovic & Xiang, 2016). Consequently, the facilitating conditions construct is important to this study as it measures m-commerce consumers' perceptions of the support on offer when using a mobile shopping app.

The construct of facilitating conditions from the UTAUT2 and its influence on actual use has been researched in the Internet and mobile banking and mobile shopping industries (Alalwan, Dwivedi, Rana & Algharabat, 2018; Tarhini, El-Masri, Ali & Serrano, 2016; Yang, 2010). Alalwan et al. (2018) found similar results to Venkatesh et al. (2003, 2012), maintaining that there is a statistically significant relationship between facilitating conditions and actual use of Internet banking. According to these researchers, this can be ascribed to the nature of the facilities required to conduct Internet banking, such as a working Internet or Wi-Fi connection and access to a secure website or app. This is similar to some of the facilities needed to adopt mobile shopping (Miladinovic & Xiang, 2016). Yang (2010) agreed, stating that facilitating conditions are critical in consumers' adoption of m-commerce. Moreover, Tarhini et al. (2016) indicated that facilitating conditions are a significant determinant of consumers' actual use of Internet banking. They state that it is imperative for banks to invest more in infrastructural development and customer service enhancement to ensure the required service and/or training is delivered to the customers, as this significantly influences whether or not they will use Internet banking. The aforementioned studies in the Internet and mobile banking and mobile shopping sectors indicate that facilitating conditions are a strong predictor of actual use.

Based on these findings, the following hypothesis can be formulated for this study:

- H₁: Facilitating conditions have a positive influence on consumers' actual use of m-commerce apps to purchase athleisure apparel.

This hypothesis is further refined as follows:

- H_{1A}: Facilitating conditions have an influence on when last consumers used a mobile shopping app to purchase athleisure apparel.
- H_{1B}: Facilitating conditions have an influence on the amount of athleisure apparel items purchased.
- H_{1C}: Facilitating conditions have an influence on the amount of time spent shopping for athleisure apparel via mobile shopping apps per week.
- H_{1D}: Facilitating conditions have an influence on the number of mobile shopping apps visited in a given month.
- H_{1E}: Facilitating conditions have an influence on the approximate rand value of athleisure apparel purchases.

3.2. The interrelationship between habit and actual use

Habit refers to consumers' automatic execution of specific behaviours due to prior learning (Alalwan et al., 2018; Chopdar, Korfiatis, Sivakumar & Lytras, 2018; Venkatesh et al., 2012). Habit in the

context of this study refers to the extent to which a consumer will make automatic use of m-commerce apps (Miladinovic & Xiang, 2016). Lipsman (2015) stated that smartphone use is habitual today, occurring on an almost unconscious level. Research has also proven that the continued usage of apps leads to the formulation of new habits (Chou, Chiu, Ho & Lee, 2013). Venkatesh et al. (2012) indicated that this construct has a significant impact on actual use. Alalwan et al. (2018), in their Jordanian study on Internet banking acceptance and use, found that even though behavioural intention is the most important determinant of actual use, habit has the second strongest influence on consumers' actual use of Internet banking. Gupta, Dogra and George (2018) concurred, affirming that habit is a strong predictor of actual use.

Based on these findings, the following hypothesis can be formulated for this study:

- H₂: Habit has a positive influence on consumers' actual use of m-commerce apps to purchase athleisure apparel.

This hypothesis is further refined as follows:

- H_{2A}: Habit has an influence on when last consumers used a mobile shopping app to purchase athleisure apparel.
- H_{2B}: Habit has an influence on the amount of athleisure apparel items purchased.
- H_{2C}: Habit has an influence on the amount of time spent shopping for athleisure apparel via mobile shopping apps per week.
- H_{2D}: Habit has an influence on the number of mobile shopping apps visited in a given month.
- H_{2E}: Habit has an influence on the approximate rand value of athleisure apparel purchases.

3.3. The interrelationship between behavioural intention and actual use

Phong, Khoi and Le (2018) described behavioural intention as individuals' personal evaluation of their ability to perform an online transaction via a mobile device through a wireless connection. The influence of behavioural intention on actual use has been widely researched in technology acceptance literature and has been cited as the most powerful determinant of actual use (Alalwan et al., 2018:129). Alalwan et al.'s (2018) Jordanian study and Tarhini et al.'s (2016) Lebanese study, both on Internet banking acceptance and use, found behavioural intention to have a significant influence on actual use. Persson and Berndtsson's (2015) Swedish study on smartphone shopping found a statistically significant relationship between behavioural intention and actual use. Furthermore, Vasileiadis (2014) found a statistically significant relationship between behavioural intention and actual use, indicating that behavioural intention is a strong predictor of actual use. Williams, Rana and Dwivedi (2015) explored the relationship between the behavioural intention and actual use constructs of the UTAUT2 and discovered that, of 102 studies, behavioural intention had a predictive weighting of 0.82 on actual use (a score of 1 being indicative of the relationship between constructs being significant) (Williams et al., 2015). Based on these findings, the following hypothesis can be formulated for the study:

- H₃: Behavioural intention has a positive influence on consumers' actual use of m-commerce apps to purchase athleisure apparel.

This hypothesis is further refined as follows:

- H_{3A}: Behavioural intention has an influence on when last consumers used a mobile shopping app to purchase athleisure apparel.
- H_{3B}: Behavioural intention has an influence on the amount of athleisure apparel items purchased.
- H_{3C}: Behavioural intention has an influence on the amount of time spent shopping for athleisure apparel via mobile shopping apps per week.
- H_{3D}: Behavioural intention has an influence on the number of mobile shopping apps visited in a given month.
- H_{3E}: Behavioural intention has an influence on the approximate rand value of athleisure apparel purchases.

Figure 1 depicts the proposed theoretical model for this study, illustrating the different constructs of the study as well as the hypothesised relationships between these constructs.

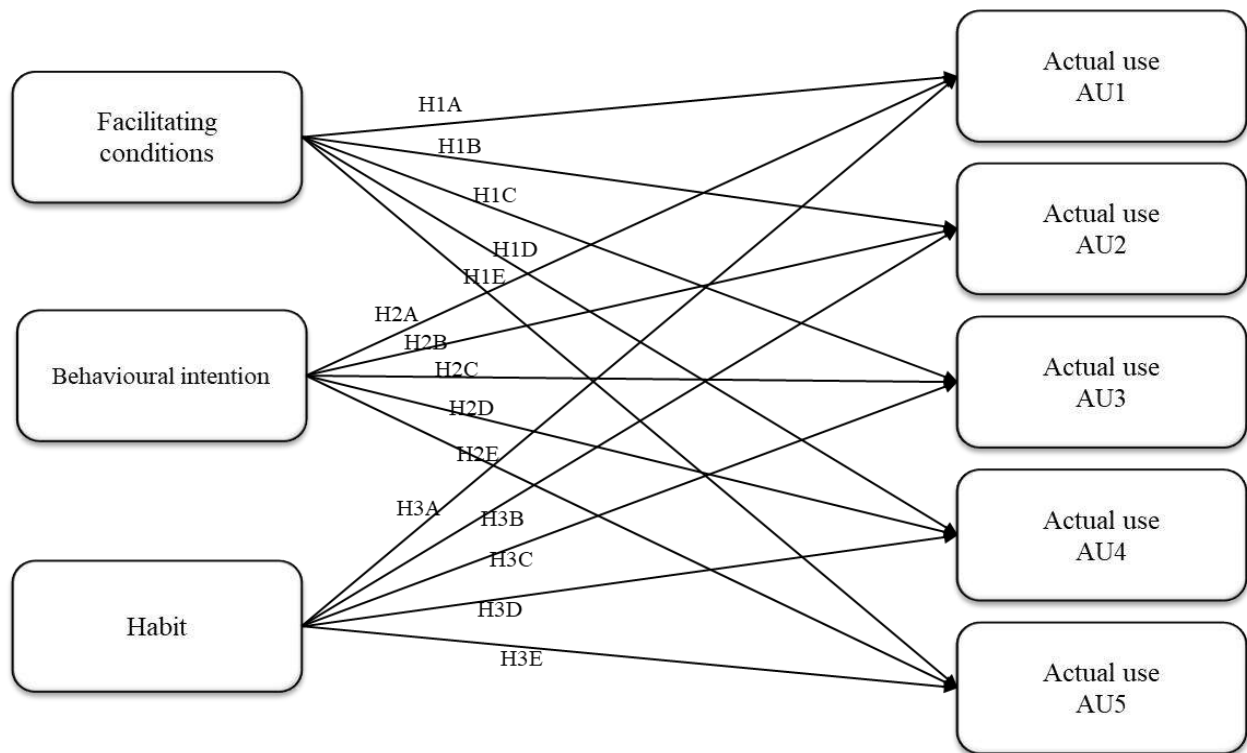


Figure 1: Proposed Theoretical Model
Source: Researcher’s own construct

4. Methodology

The study is quantitative and descripto-exploratory in nature, and flows from Karen van Niekerk’s master’s dissertation titled “Factors that influence the adoption of mCommerce applications for purchasing athletic fashion apparel”. The co-authors on this paper were the supervisors of the study. The study’s target population consisted of South African consumers who had used an m-commerce app over the last 12 months. Consumers who actually made a purchase were included in the study. According to Effective Measure (2017:2), 66% of consumers purchase online or via their mobile phones at most once every three months. An IT News Africa article (“Online shopping trends in 2017”, 2017) reported that 67% of South African shoppers who shop online or via mobile phone purchase less than 10 products a year. Therefore, 12 months was selected as an optimal period for a sufficient sample to be drawn, as the frequency of m-commerce purchases is low in South Africa. The sampling method in this study was a combination of two-part quota and convenience sampling. The quotas were created to ensure that the data represented South Africa’s population (refer to Table 1). In addition to quota sampling, convenience sampling was used as it allows the research sample to be drawn at the researcher’s convenience and permits a large number of respondents to be interviewed within a shorter time frame (Hair, Celsi, Ortinau & Bush, 2013; Zikmund & Babin, 2010).

Table 1: Quotas and Questionnaires to be Fielded

<i>Ethnicity</i>	<i>Percentage of the population</i>	<i>Number of questionnaires to be fielded (equal male and female)</i>		
		Male	Female	Total
<i>Black</i>	80.8%	101	101	202
<i>Coloured</i>	8.8%	11	11	22
<i>Indian/Asian</i>	2.5%	3	3	6
<i>White</i>	8.0%	10	10	20
<i>Total</i>	100%	125	125	250

Source: Statistics South Africa (2017)

The data collection instrument selected for this study was a questionnaire. To ensure sufficient respondents were reached, a hybrid method comprising self-completed and interviewer-administered questionnaires was used. Self-completed questionnaires were answered by the respondents and were distributed via e-mail (Benzo, Mohsen & Fourali, 2018; Saunders, Lewis & Thornhill, 2016). E-mail was used to send the questionnaire to consumers in South Africa. The respondents accessed the questionnaire by clicking on a link provided in the e-mail. In addition, interviewer-administered questionnaires were leveraged to improve the response rate. Interviewer-administered questionnaires were done in person via mall intercept, which is when respondents are approached while shopping in a mall (Malhotra, 2007). Fieldworkers from the private research company, Osmoz Consulting, were contracted to assist with these questionnaires. The research company was orientated towards the aim of the study as well as the questionnaire and its content before the pilot study was conducted to test the validity and reliability of the questionnaire.

The questionnaire comprised distinct sections, including screening questions to determine whether the respondent had used an m-commerce app to purchase athleisure apparel. Section A covered the demographic information of respondents, while Sections B and C asked questions about the constructs, including facilitation conditions, behavioural intention, habit (Venkatesh et al., 2003, 2012), and actual use. The scale to measure actual use was compiled by combining five items from different studies with the intention of extracting richer insights from consumers who had used m-commerce apps to purchase athleisure apparel. This construct was built using items from Chopdar et al. (2018) and Kloppe and McKinney (2004). The scales consisted of 4 to 13 items, depending on the construct, and previously validated five-point Likert scales (ranging from 1 = “strongly disagree” to 5 = “strongly agree”) were used to measure each of the statements for Sections B and C. Table 2 portrays the scales and their statements pertaining to this paper.

Table 2: Constructs and Items

Facilitating conditions	
FC1	I have the resources necessary to use mobile shopping apps to purchase athleisure apparel.
FC2	I have the knowledge necessary to use mobile shopping apps to purchase athleisure apparel.
FC3	Mobile shopping apps are compatible with other technologies I use when purchasing athleisure apparel.
Habit	
HT1	The use of mobile shopping apps to browse and/or purchase athleisure apparel has become a habit for me.
HT2	I am addicted to using mobile shopping apps to browse and/or purchase athleisure apparel.
HT3	I must use mobile shopping apps to browse and/or purchase athleisure apparel.
HT4	Using mobile shopping apps to browse and/or purchase athleisure apparel has become natural to me.
Behavioural intention	
BI1	I intend to use mobile shopping apps to purchase athleisure apparel in the future.
BI2	I will use mobile shopping apps to purchase athleisure apparel where feasible.
BI3	I plan to use mobile shopping apps to purchase athleisure apparel in the future.
BI4	I predict I will use mobile shopping apps to purchase athleisure apparel in the future.
BI5	I will use mobile shopping apps to purchase athleisure apparel in my daily life.
AU1: When last did you use a mobile shopping app to purchase athleisure apparel?	
1	Last week
2	Last month
3	Within the last three months
4	Within the last six months
5	Within the last year
AU2: How many athleisure apparel items did you purchase during this time?	
1	1 item
2	2–3 items
3	4–5 items
4	6 or more items
AU3: In general, how much time do you spend shopping for athleisure apparel via mobile shopping apps per week?	
1	0–5 minutes
2	6–15 minutes
3	16–60 minutes
4	Over 60 minutes
AU4: On average, how many different mobile shopping apps do you visit in a given month?	
1	1–2
2	3–4
3	5–6
4	7 or more
AU5: What was the approximate rand value of your most recent purchase of athleisure apparel?	
1	R250 or less
2	R250–R500
3	R500–R800
4	R800–R1 000
5	R1 000 or more

Data analysis was conducted to examine the 250 valid responses using the IBM Statistical Package for the Social Sciences programme, version 24. This programme applied various statistical procedures, including descriptive statistical analyses and exploratory factor analysis (EFA) and *t*-test analyses, to determine the outcome variables and test the proposed hypotheses. This assisted in the development and delivery of accurate statistical data that contributes towards the existing research field by offering improved knowledge on mobile shopping via apps in emerging markets, such as South Africa.

5. Empirical Findings

5.1. Demographic profile of respondents

An equal number of males and females answered the questionnaire. The majority of respondents were black (81%), followed by white (12%), Asian (3%), and coloured (3%); who spoke English (22%),

Zulu (21%), Sotho (17%), Tswana (9%), and the other remaining seven official languages of South Africa (30%). Respondents represented various levels of education, with most having a university degree (31%), grade 12 schooling (27%), a postgraduate degree (23%), and a national diploma or certificate (12%). Most respondents were aged 18–24 (57%) and 25–29 (21%), followed by 30–35 (12%) and 35 years and older (10%). When respondents were asked if they had used an app on their smartphones to browse and/or buy athleisure apparel, 26% indicated they use an app to buy and 74% that they use an app to browse and buy.

5.2. Reliability and validity

To ensure validity of the questionnaire, a pilot study was done. Only content or face validity was assessed during the pilot test. Content or face validity refers to a subjective judgement that considers the extent to which a specific measure seems to be related to a particular construct. It is the subjective assessment surrounding the presentation of, in this instance, the questionnaire from a relevance, consistency, and clarity point of view (Malhotra, Birks & Wills, 2012; Taherdoost, 2016). Content or face validity is assessed prior to data being collected to ensure the questionnaire covers all areas of the intended research (Hair et al., 2013). During the pilot test, a small sample of 22 respondents was included. All respondents in the pilot test indicated that they use m-commerce apps to purchase athleisure apparel online. The results of the pilot test showed that all Cronbach's alpha values for the constructs in the study were greater than 0.7 (refer to Table 3). Moreover, the respondents indicated clarity of reading of the items and no changes were made to the original items used.

Table 3: Pilot Test Results: Reliability Statistics

Construct	Number of items	Cronbach's alpha	Cronbach's alpha based on standardised items
Facilitating conditions	4	0.865	0.882
Behavioural intention	5	0.908	0.914
Actual use	5	0.772	0.777

To ensure statistical validity, the factor loadings of scale items must be more than 0.5. The average variance extracted for each construct should also exceed 0.5 (Hair et al., 2013:167; Nam, Lee & Lee, 2019; Sun, Lee & Law, 2019). Table 4 depicts the factor loadings for each of the scale items relating to the constructs used in the study. As is evident, all factor loadings were over the 0.5 mark, indicating that statistical validity was met. Moreover, there were no cross-loadings of items.

Table 4: Factor Loadings for Each Scale Item

Construct/Items	Factor loadings
FC1: I have the resources necessary to use mobile shopping apps to browse and/or purchase athleisure apparel.	0.743
FC2: I have the knowledge necessary to use mobile shopping apps to browse and/or purchase athleisure apparel.	0.756
FC3: Mobile shopping apps are compatible with other technologies I use when browsing and/or purchasing athleisure apparel	0.730
HM1: Using mobile shopping apps to browse and/or purchase athleisure apparel is fun.	0.888
HM2: Using mobile shopping apps to browse and/or purchase athleisure apparel is enjoyable.	0.933
HM3: Using mobile shopping apps to browse and/or purchase athleisure apparel is very entertaining.	0.872
HM4: Using mobile shopping apps to browse and/or purchase athleisure apparel is very pleasurable.	0.861
BI1: I intend to use mobile shopping apps to purchase athleisure apparel in the future.	0.862
BI2: I will use mobile shopping apps to purchase athleisure apparel where feasible.	0.832
BI3: I plan to use mobile shopping apps to purchase athleisure apparel in the future.	0.899
BI4: I predict I will use mobile shopping apps to purchase athleisure apparel in the	0.866

future.	
BI5: I will use mobile shopping apps to purchase athleisure apparel in my daily life.	0.604

Table 5 summarises the Cronbach's alpha values for each construct. As per Hair et al. (2013:166), any value lower than 0.7 indicates low and unsatisfactory internal consistency. As is evident, the Cronbach's alpha values for facilitating conditions and habit were above 0.7, but for actual use it was 0.377, indicating low and unsatisfactory internal consistency. This indicates that it is not possible to work with this construct as a latent construct made up of five items, as the various items do not constitute a single construct.

Table 5: Cronbach's Alpha for Each Construct

Construct	Scale items	Cronbach's alpha
Facilitating conditions (FC)	FC1, FC2, FC3	0.787
Habit (HT)	HT1, HT2, HT3, HT4	0.868
Actual use (AU)	AU1, AU2, AU3, AU4, AU5	0.377

5.3. Exploratory Factor Analysis

The analysis of the proposed model includes factor analysis with a view on factor extraction, factor rotation, and interpretation. Thereafter, EFA was conducted on the data. The different items in Table 6 were originally part of the actual use construct, which was the dependent variable to be used in the study. Each of the five items in the study were recoded into two categories and factor rotation was done. Varimax rotation was utilised with Kaiser normalisation, an orthogonal rotation solution. Orthogonal rotation results in uncorrelated factor solutions (Pallant, 2016). As can be seen in Table 6 after varimax rotation, item AU1 explained 18.841% of the variance as opposed to 31.833%, and item AU2 explained 7.368% of the variance as opposed to 22.512%. Table 6 depicts the rotated factor loadings. Majority of the items had factor loadings below the recommended level of 0.4 (Chan & Idris, 2017; Kootstra, 2004).

Table 6: Rotated Factor Matrix for the Five Dependent Variables (Five Items of Original Actual Use Construct)

Construct/Scale Items	Factor	
	1	2
AU1: When last did you use a mobile shopping app to purchase athleisure apparel? (Choose only one)	-0.028	0.476
AU2: How many athleisure apparel items did you purchase during this time? (Choose only one)	0.752	-0.031
AU3: In general, how much time do you spend shopping for athleisure apparel via mobile shopping apps per week? (Choose only one)	0.324	0.206
AU4: On average, how many different mobile shopping apps do you visit in a given month? (Choose only one)	0.125	0.303
AU5: What was the approximate rand value of your most recent purchase of athleisure apparel? (Choose only one)	0.505	0.086

Considering the findings in Table 6, it is noted that it is not possible to work with the originally proposed actual use construct as a latent construct comprising five items in the study, as the various items do not fit well with each other and cannot be combined to measure a single construct. Therefore, it was decided to represent the actual use construct as five unique binary categorical outcomes. This implies that the dependent variables in the study (as proposed by Figure 1) were created by combining five items from different studies. AU1 was sourced from Chopdar et al. (2018) and asked when last respondents used a mobile shopping app to purchase athleisure apparel. AU2 was developed by the researcher and aimed to understand how many items were bought. AU3 and AU4 were adapted from Klopping and McKinney (2004) and asked respondents how much time they spent shopping for athleisure apparel via mobile shopping apps per week as well as how many different mobile shopping apps they visited in a given month. The final item, AU5, was developed by the researcher to understand the value of athleisure apparel purchases. The five proposed outcome variables were

linked to the constructs of facilitating conditions, habit, perceived risk, and behavioural intention (see Figure 1). Table 7 details the frequencies for the five dependent variables in the proposed model.

Table 7: Actual Use Constructs – Frequencies

AU1: When last did you use a mobile shopping app to purchase athleisure apparel? (Choose only one)		
	Frequency	Valid %
Over a month ago	118	47.2%
Within last month	132	52.8%
Total	250	100%
AU2: How many athleisure apparel items did you purchase during this time? (Choose only one)		
	Frequency	Valid %
1 item	89	35.6%
More than 1 item	161	64.4%
Total	250	100%
AU3: In general, how much time do you spend shopping for athleisure apparel via mobile shopping apps per week? (Choose only one)		
	Frequency	Valid %
Up to 15 minutes	124	49.6%
More than 15 minutes	126	50.4%
Total	250	100%
AU4: On average, how many different mobile shopping apps do you visit in a given month? (Choose only one)		
	Frequency	Valid %
1–2 apps	118	47.2%
3 or more apps	132	52.8%
Total	250	100%
AU5: What was the approximate rand value of your most recent purchase of athleisure apparel? (Choose only one)		
	Frequency	Valid %
Up to R500	100	40%
R501 or more	150	60%
Total	250	100%

5.4. T-test analysis

For the purpose of this study, actual use was represented as five unique binary categorical outcomes. Therefore, the proposed model in this study was analysed using a *t*-test analysis to establish the significance of the proposed relationships. The results of the *t*-test for each of the five constructs are as follows. For construct AU1 (i.e., “When last did you use a mobile shopping app to purchase athleisure apparel?”), the *p*-values for habit and behavioural intention were 0.000 and 0.012 respectively, both below 0.05, indicating that these constructs exerted an influence on the last time consumers used their mobile shopping apps to purchase athleisure apparel. For construct AU2 (i.e., “How many athleisure apparel items did you purchase during this time?”), the *p*-value for behavioural intention was 0.003, also below 0.05, indicating an influence on the number of athleisure apparel items consumers purchased. For construct AU3 (i.e., “In general, how much time do you spend shopping for athleisure apparel via mobile shopping apps per week?”), the *p*-value for facilitating conditions was 0.004, less than 0.05, indicating that this construct exerted an influence on the amount of time consumers spent shopping for athleisure apparel items. For construct AU4 (i.e., “On average, how many different mobile shopping apps do you visit in a given month?”), the *p*-values for habit and behavioural intention were 0.003 and 0.031 respectively. Both were below 0.05, indicating that these constructs exerted an influence on the number of mobile shopping apps consumers used to purchase athleisure apparel. Lastly, for construct AU5 (i.e., “What was the approximate rand value of your most recent purchase of athleisure apparel?”), the *p*-value for behavioural intention was 0.019. This was also below 0.05, indicating that behavioural intention influenced the rand value consumers spend when shopping for athleisure apparel items.

5.5. The influence of facilitating conditions on actual use as a binary categorical outcome construct

Hypothesis H_{1C} is accepted, with H_{1A}, H_{1B}, H_{1D}, and H_{1E} being rejected. Facilitating conditions were found to have a borderline significant influence on the amount of time spent shopping for athleisure apparel via mobile shopping apps per week. It can be inferred that, if consumers have a working Internet connection to access and use the mobile shopping app, as well as access to online customer support, more time will be spent shopping for athleisure apparel via mobile shopping apps per week. This finding is supported by Chawla and Joshi (2019) and Liang, Lee and Workman (2022), who stated that in a retailing and financial services context facilitating conditions influence consumers' online behaviour.

5.6. The influence of habit on actual use as a binary categorical outcome construct

Hypotheses H_{2A} and H_{2D} are accepted, while H_{2B}, H_{2C} and H_{2E} are rejected. The data revealed that habit has a significant influence on when last consumers used a mobile shopping app to purchase athleisure apparel. It can be inferred that habitual m-commerce app use influences usage recency. Moreover, habit shows a borderline significant influence on the number of mobile shopping apps visited in a given month. Consequently, habitual m-commerce app use influences the number of m-commerce apps used per month. Thusi and Maduku (2020) concurred, stating that habit has a direct and pertinent influence on individual usage of mobile apps in a retail banking context.

5.7. The influence of behavioural intention on actual use as a binary categorical outcome construct

Hypotheses H_{3A}, H_{3B}, H_{3D}, and H_{3E} are accepted, but H_{3C} is rejected. The data revealed that behavioural intention has a significant influence on the last time consumers used a mobile shopping app to purchase athleisure apparel. In addition, behavioural intention was found to influence the amount of athleisure apparel items purchased, indicating that the more intent consumers have to purchase athleisure apparel via m-commerce apps, the greater the number of items they will purchase. Results further indicated that behavioural intention influenced the amount of mobile shopping apps visited in a given month. And finally, behavioural intention was shown to significantly influence the approximate rand value of athleisure apparel purchases, indicating that the greater the consumer's intent to purchase, the greater the amount spent. This finding is supported by Warganegara and Hendijani (2022), who found that behavioural intention positively and significantly influences consumers' actual use in an online grocery retailing context.

Table 8 provides insight into the findings with respect to the hypotheses formulated for the study. Seven hypotheses can be supported. Based on these findings, nomological validity is also evident.

Table 8: Hypothesis Testing

Hypothesis	Variable	Variable	Sig.	Finding
H _{1A}	Facilitating conditions	Actual use 1	0.078	Rejected
H _{1B}	Facilitating conditions	Actual use 2	0.093	Rejected
H _{1C}	Facilitating conditions	Actual use 3	0.004	Accepted
H _{1D}	Facilitating conditions	Actual use 4	0.983	Rejected
H _{1E}	Facilitating conditions	Actual use 5	0.757	Rejected
H _{2A}	Habit	Actual use 1	0.000	Accepted
H _{2B}	Habit	Actual use 2	0.422	Rejected
H _{2C}	Habit	Actual use 3	0.673	Rejected
H _{2D}	Habit	Actual use 4	0.003	Accepted
H _{2E}	Habit	Actual use 5	0.285	Rejected
H _{3A}	Behavioural intention	Actual use 1	0.012	Accepted
H _{3B}	Behavioural intention	Actual use 2	0.003	Accepted
H _{3C}	Behavioural intention	Actual use 3	0.134	Rejected
H _{3D}	Behavioural intention	Actual use 4	0.031	Accepted
H _{3E}	Behavioural intention	Actual use 5	0.019	Accepted

6. Discussion

From an academic contribution perspective, similar studies in emerging African economies like South Africa have not yet been conducted, thus this study adds to the existing body of knowledge. The separation of the actual use construct into five constructs represents a further contribution to academic literature for the application of the UTAUT2 in emerging African economies, such as South Africa. Based on the low, unsatisfactory internal consistency achieved for this construct (Cronbach's alpha = 0.377; refer to Table 5), it was not possible to work with this construct as a latent construct made up of five items. This was because the various items did not constitute a single construct. Consequently, the study was adjusted to represent the actual use construct as five unique binary categorical outcomes. Both habit and behavioural intention were shown to exert an influence on when consumers last used a mobile shopping app to purchase athleisure apparel (AU1). Behavioural intention was shown to have an influence on the amount of athleisure apparel items purchased (AU2). Facilitating conditions were found to influence the amount of time spent shopping for athleisure apparel via mobile shopping apps per week (AU3). Both habit and behavioural intention were shown to influence the number of mobile shopping apps visited in a given month (AU4). Finally, behavioural intention was shown to exert an influence on the approximate rand value of athleisure apparel purchases (AU5). From an industry contribution perspective, the findings of this study make a significant contribution to mobile shopping literature in South Africa. There is limited research in the field of m-commerce in emerging African economies like South Africa (Magan, 2016). The data gathered from this study shed light on m-commerce and provide South African business owners with a more in-depth understanding of the factors that drive consumers to purchase athleisure apparel.

7. Managerial Implications

The results from this research can assist m-commerce app owners and developers in adjusting their strategies for success. The constructs and the relevant managerial recommendations are discussed in the subsections that follow.

7.1. Facilitating conditions

This study found a positive relationship between facilitating conditions and the amount of time spent shopping for athleisure apparel via mobile shopping apps per week. Hence, elements, such as an available Internet connection to access and use the mobile shopping app as well as the availability of online customer support, will lead to increased time being spent shopping via mobile shopping apps per week (Miladinovic & Xiang, 2016). To exploit this phenomenon, m-commerce app owners can implement zero-rate data usage for their apps, ensuring consumers do not incur any data costs while

using the apps (Yang, 2010). Another element of facilitating conditions that has been reported as significant is the speed in app response time. Slow response times have been shown to have a severe negative impact on customer experience. Designing a small, compressed app with a fast response time will allow users to browse the app quickly and efficiently, creating a positive customer experience. Lastly, chatbot technology is able to provide customers with automated, personalised service anywhere, at any time, and at a much lower price than employing a team of customer service representatives. M-commerce app owners can leverage chatbot technology to assist customers with their service enquiries.

7.2. Habit

The results of this study provide evidence of a positive relationship between habit and when consumers last used a mobile shopping app as well as the number of mobile shopping apps visited in a given month. Consumers are more likely to frequently use m-commerce apps or various other apps if they have already formed habitual behaviour of shopping via their mobile phones (Alalwan et al., 2018). Developers could reference the design thinking applied in top-downloaded and most-used apps to ensure the app feels familiar and intuitive to users. This will ensure the design of an easy-to-use, intuitive app whose usage will become routine and habitual far more quickly (Miladinovic & Xiang, 2016). Additionally, habitual behaviour can be encouraged through the creation of a rewards programme, where frequent app users are incentivised for continued usage. Increased app usage frequency leads to the creation of habit, which bolsters behavioural intention (Miladinovic & Xiang, 2016). M-commerce app owners and developers can also segment the user base into groups and send tailored offers, personalised discounts, and new product announcements. Users can be alerted to these offers, discounts, and rewards by means of push notifications via the app, which will encourage repeat use.

7.3. Behavioural intention

The results of this study confirm a positive relationship between behavioural intention and when consumers last used a mobile shopping app as well as the number of mobile shopping apps visited in a given month, the amount of athleisure apparel items purchased, the number of mobile shopping apps visited in a given month, and the approximate rand value of these purchases. A number of recommendations can be provided to assist managers operating in this space to exploit this finding to their full advantage. M-commerce app owners or developers could design their shopping apps to leverage smartphone capabilities to the fullest, thereby increasing utility for the consumer. In addition, it is imperative that m-commerce app owners or developers design apps with the smartphone screen size in mind. Given the small screen size, the app experience should be carefully thought out and designed, allowing for simple browsing and navigation by one hand and one thumb only (Hew, Lee, Ooi & Wei, 2015; Persson & Berndtsson, 2015; Yang, 2010). Moreover, consumers' behavioural intention can be reduced if a particular app is prone to errors or technological breakdowns (Chaouali et al., 2016). It is vital that m-commerce app owners and developers guarantee their apps are built with stability in mind and are able to handle large volumes of customers at the same time to ensure the app is available at all times (IBM, 2020). M-commerce app owners and developers should regularly release new and improved functionalities on the app, enticing existing customers to make repeat use of it and encouraging new customers to download it (Chopdar et al., 2018). An example of this includes improving convenience by allowing quicker payment (Chaouali et al., 2016). M-commerce app owners and developers may also incorporate customer reviews into apps, allowing customers to rate their overall experience and provide suggestions for improvement. Reviews have increased in popularity and trustworthiness over the last few years, and have been shown to exert significant influence over consumers' purchasing decisions (Li, Xie & Zhang, 2020; Oliveira, Thomas, Baptista & Campos, 2016; Xu, 2020; Yang, 2010).

8. Conclusion

This study successfully utilised the UTAUT2 of Venkatesh et al. (2012) as the foundation model to determine the constructs that influence consumers' actual use of m-commerce apps to purchase athleisure apparel in South Africa. The findings from the research model augment the existing body of knowledge in mobile shopping, shedding light on mobile shopping via apps in emerging markets like

South Africa. The insights gained from this study provide South African business owners with a more in-depth understanding of the factors that drive consumers to purchase athleisure apparel. Nevertheless, the study has certain limitations that can be addressed in future research. The majority of the sample (76.6%) was below the age of 30, an age group classified as millennials and the research findings are limited to this cohort in South Africa. In addition, the entire sample was drawn from the province of Gauteng, specifically the cities of Johannesburg and Tshwane. Even though Gauteng is home to the largest percentage of online shoppers in South Africa (43%), the Western Cape and KwaZulu-Natal could also be included as the next two largest provinces (Effective Measure, 2017). Future research could extend age and location to target the more general South African, thereby providing more accurate generalised data for the broader South African population (Chopdar et al., 2018; Yang, 2010). Many studies applying the UTAUT2 have only focused on consumers' behavioural intention, not actual use (Chaouali et al., 2016; Gupta et al., 2018; Hew et al., 2015; Madan & Yadav, 2016; Miladinovic & Xiang, 2016; Shaw & Sergueeva, 2019; Verkijika, 2018). This study examines consumers' actual use of m-commerce apps to purchase athleisure apparel. Future research could extend the model even further by investigating continued usage to better understand loyalty and return behaviour (Chong, 2013). Finally, since this study was cross-sectional in nature, a longitudinal study could provide additional insights for researchers and industry, as it would evaluate the changes in consumers' behaviour over time (Bashir & Madhavaiah, 2015; Chaouali et al., 2016; Chopdar et al., 2018; Farivar, Turel & Yuan, 2017; Hew et al., 2015; Verkijika, 2018).

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The Leverage of Marketing Communication Opportunities by Using Facebook in Faculties at a Selected Comprehensive University

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Keywords

Facebook; university; higher education institutions; faculties; risks; challenges

Abstract

The purpose of the study was to identify how to leverage marketing communication opportunities by using Facebook in faculties at a selected comprehensive university in South Africa. The study applied the Morse and Field approach and the sample included all faculty marketing managers of the selected comprehensive university. It was established that there is a lack of uniformity among all Facebook pages of the eight faculties at the selected comprehensive university. It is recommended that faculty staff attend a compulsory social media rules and regulations information session at the selected university, which will educate them regarding Facebook etiquette within a personal and professional capacity.

1. Introduction

Social media has become one of the main channels of communication and is slowly replacing traditional communication techniques. It can be described as a platform for people to share thoughts, ideas, and content online, as well as to build and maintain relationships (Enke & Borchers, 2021). Jordan and Weller (2018) and Mishra (2020) stated that there are numerous social media platforms that support various types of interactions. For instance, Facebook has pages that people “like”, Twitter involves followers and tweets, and YouTube allows individuals to upload and share videos.

Over the last decade, social networking has remarkably transformed the higher learning landscape. This new pathway of communication will continue to shape the higher education marketplace in the next 10 years (Chugh & Ruhi, 2018). As students increasingly use computers, tablets, smartphones, and other mobile devices in their day-to-day lives, their expectations of how universities and lecturers should communicate and engage with them have changed (Beauchamp & Nolin, 2012; Dismore, Turner & Huang, 2019; Scull, Phillips, Sharma & Garnier, 2020). According to Head, Wihbey, Metaxas, MacMillan and Cohen (2018), prospective students today gather required information by chatting with current students about their experiences at university. Furthermore, faculty administrators and marketers are always exploring new avenues to engage current and prospective university students through Facebook and other social networks (Raza, Qaza, Shah, Qureshi, Qaiser & Ali, 2020; Shields & Peruta, 2019).

Potential and existing students in the South African higher education environment spend a lot of time on Facebook. As a result, it would be beneficial for higher learning institutions to utilise Facebook for marketing and communication purposes. This is especially relevant as university students are devoted users of various social platforms, such as Facebook and Twitter. Universities have to face the challenges associated with serving a new type of university student – one who has grown up with and is proficient at technology and social media (Beauchamp & Nolin, 2012; Dismore et al., 2019). Consequently, it becomes increasingly important for universities to determine how faculties within a higher education institution in South Africa, such as the selected comprehensive university, utilise this social media platform as a marketing communication tool, especially when considering that this

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platform should be incorporated into all faculty marketing strategies. This study:

- Explores the different risks incurred by faculties at the selected comprehensive university when hosting a faculty Facebook page;
- Explains the challenges of managing faculty Facebook pages at the selected comprehensive university; and
- Identifies the support required by faculties of the selected comprehensive university for Facebook efforts.

To the authors' best knowledge, no similar study has explored how faculties within a comprehensive university or universities in South Africa use Facebook as a marketing and communication tool. Facebook is an ideal platform for marketers at the selected comprehensive university to utilise as a marketing communication tool for the institution. In this context, the main aim of this paper is to understand how different faculties at the selected comprehensive university use Facebook as a marketing and communication tool. This paper contributes to the body of knowledge on Facebook usage within universities and can assist higher education institutions to better understand how to use Facebook as a marketing and communication tool. This paper starts with an orientation towards the literature review that grounds the study, followed by the study's methodological process, findings, theoretical and practical contributions, and recommendations.

2. Theoretical Framework

Social media is a major evolution in online marketing communication. If organisations proactively engage, connect, and share information online, this platform of digital communication has the potential to create long-term customers (Assaf, Noormohamed & Saouli, 2012).

2.1. A perspective on the selected comprehensive university

According to Why Joburg (2011), this study's selected comprehensive university – one of the largest residential universities in South Africa – came into existence when three previously independent institutions of higher learning merged in 2005, namely the Rand Afrikaans University, the Technikon Witwatersrand, and the Soweto Campus of Vista University. The selected comprehensive university has eight faculties and offers a range of undergraduate and postgraduate programmes. In 2019, the university had approximately 53 000 students enrolled in the institution and 2 942 permanent staff members (University of Johannesburg, 2019).

2.2. Social media and the millennial generation

Millennials are digital natives, as they are the first generation to experience most of their lives online, particularly through social networks (Akkucuk & Turan, 2015; Charrier, 2016; Munsch, 2021). Bentley, Chu, Nistor, Pehlivan and Yalcin (2021) and Fulton and Kibby (2017) stated that millennials are more engaged, visual, and vocal, and are not passive readers of content, but will interact by posting, blogging, and pinning content. Moreover, this generation frequently uses social media and enjoys sharing activities of their daily lives on these social platforms (Jacobsen & Barnes, 2017; Kijek, Angowski & Skrzypek, 2020). Vasquez and Wadlinger (2016) asserted that 85% of millennials have indicated that they research new products and services via search engines, websites, and social media, with Facebook being the primary choice for a social channel, followed by YouTube.

2.3. Facebook as a social media tool

Mark Zuckerberg founded Facebook in 2004. It was originally named "thefacebook.com" and was intended to be a closed online social network for Harvard University staff and students. Access to Facebook was extended to universities and companies, such as Apple and Microsoft, and has developed globally into one of the most used social media platforms (Karapanos, Teixeira & Gouveia, 2016; Phillips, 2007). According to Latka (2014), 30 million businesses globally are active Facebook users with fan pages, 1.5 million businesses spend money on advertising on Facebook, and 829 million people use Facebook daily, which is an increase from 802 million users in 2013. World Wide

Worx (2015) reported that 93% of the major South African brands use Facebook, 79% use Twitter, and 46% use YouTube for marketing communication activities.

Facebook launched various new features in November 2007, including the possibility of creating Facebook “pages”, which allowed universities and schools to create a presence for their various institutions and recruit fans (page likes) on the social networking site (Joly, 2008; Pinzaru & Mitan, 2013; Sarapin & Morris, 2015). As per Meta for Business (2013), one of the new features for Facebook is mobile applications. These new features can assist businesses with acquiring new users and driving awareness, and may benefit the businesses by increasing engagement on the mobile app. There are also different ways in which Facebook groups can be appropriated – for example, Facebook could be a relationship-building tool or a problem-solving tool. For a group to utilise Facebook as a problem-solving tool, members of the various groups should be willing to interact and help others within the group. Moreover, these platforms could assist in nurturing relationships between students and educators (Lee, Hosanagar & Nair, 2018; Zulkifli, Abd Halim, Yahaya & Van der Meijden, 2021). Numerous scholars (e.g., Moghavvemi, Sharabati, Paramanathan & Rahin, 2017; Zaremohzabieh, Samah, Omar, Bolong & Kamarudin, 2014) affirm that university students are among the most vigorous users of Facebook. The platform is changing the future of communication and how students use this platform, which is something that universities should pay attention to (Raza et al., 2020; Shiau, Dwivedi & Lai, 2018).

2.4. The selected comprehensive university’s usage of social media focusing on Facebook

According to Kitchin (2016), the selected comprehensive university currently uses a few main social media platforms, namely LinkedIn, Twitter, Instagram, and Facebook, with the latter being one of the strongest and most significant platforms used. When interviewed on 28 September 2019, Radikariki (2019) shared that the selected comprehensive university was advancing swiftly with the utilisation of Facebook, compared to competitors in South Africa. The reason being that the institution is aware of and understands the significance of the efficient usage of social media, and takes every opportunity to enhance its efforts in this regard. Gugulethu (2019), also interviewed on 28 September 2019, stated that the university was advancing by identifying and keeping up with social media trends globally and nationally. The selected comprehensive university also employs staff and equips staff with the skills required to have a successful social media presence. Moreover, the university ensures that it has an account for all the popular platforms, which allows the institution to engage with students and other stakeholders on various platforms. The benefits for the university are that it is ahead of its competitors in this regard, students (customers) and all relevant stakeholders can communicate with or receive information from the institution on numerous platforms, and information is accessible and easy to find (Radikariki, 2019).

3. Problem Statement and Research Questions

It is evident from the literature review that social media platforms, such as Facebook, have become a fundamental aspect for marketing communication at the selected comprehensive university, as this is the platform that the university presently uses to engage with different role players. However, these social media platforms provide risks and challenges to marketers, as not all faculties within the selected comprehensive university use them effectively. If used appropriately and effectively, the social media platforms could provide opportunities for growth and new adaptive marketing strategies within the various faculties of the university. Therefore, the following two research questions need to be asked:

- What are the risks and challenges encountered by the various faculties that use Facebook within the selected comprehensive university?
- How can Facebook be used to leverage marketing communication opportunities in faculties at the selected comprehensive university?

An understanding of these two questions will assist with the successful application of this social media platform. In addition, it will contribute to providing guidelines on how Facebook could be incorporated efficaciously into the respective marketing strategies of the different faculties at the selected comprehensive university.

4. Research Methodology

4.1. Research design

This study applied a qualitative research methodology, since the aspects investigated were exploratory and interpretive in nature. The study flows from the master's dissertation of Tamara Keshnee Morgan (married surname is Francis), titled "The utilisation of Facebook as a marketing communication tool within university faculties". The co-authors on this paper were the supervisors of the study. As the research study's topic required the researchers to use a small sample and be concerned with the context in which events are taking place, an inductive approach was used. This approach focuses on obtaining a better feel for what is going on to comprehend the problem more clearly (Saunders, Lewis & Thornhill, 2012). Qualitative data analysis is an inductive process (Creswell, 1994). In this study, the text used for coding was the participants' feedback. The research study utilised an exploratory research design, since it is textual, visual or oral, and not characterised by numbers (Zikmund & Babin, 2013). The study followed a qualitative approach, as the researchers wanted to understand the context of how faculties within a selected university use Facebook as a marketing communication tool. Moreover, a qualitative approach was selected as the study investigates the nature of faculty managers' experiences with the phenomenon and the researchers wanted to obtain a deeper understanding of this phenomenon.

4.2. Target group and sample design

The study's population was the marketing coordinators who manage the Facebook pages of the selected university. The population members had to adhere to specific specifications to participate – that is, they had to be marketing coordinators who manage their faculty Facebook pages. From an ethical perspective, the participants in the study were unknown to the researchers. Furthermore, the marketing coordinators of the different faculties at the selected university provided their written consent to participate in the study. A census approach was used to survey the sample frame, given that the marketing coordinator population is small and each of these employees could be contacted with ease at a low cost. A census is defined as a research method that includes data from each member of the defined population (Hair, Page & Brunsveld, 2019). The researchers conducted in-depth interviews with the different marketing coordinators of the eight faculties at the selected university. Table 1 reflects the sampling plan of the study.

Table 1: Sampling Plan

Design elements	Application to the study
Target population	Marketing coordinators who manage the Facebook pages of the selected university
Sampling frame	Marketing coordinators who specifically manage the faculty Facebook pages within the selected university
Sampling method	A census was conducted
Sampling element	Marketing coordinators of the faculties of the selected university
Sample size	Eight respondents

Fusch and Ness (2015) asserted that data saturation is reached when there is enough information to duplicate the study, when the ability to obtain new information has been attained, and when further coding is no longer feasible. The researchers conducted the interviews and analysed the data. Although data saturation was reached before all eight interviews were finished, the researchers decided to continue and complete eight interviews to determine if new themes emerged.

4.3. Research analysis

This study used an explorative design, utilising the Morse and Field (1996) approach to analyse the qualitative data, as other researchers have applied this approach in the disciplines of management and marketing academic work before (Maritz, 2012). The four steps of the Morse and Field (1996) approach – namely to comprehend, synthesise, theorise, and recontextualise – were applied to this study. De Vos, Strydom, Fouché and Delpont (2011) stated that data analysis in qualitative research is not followed in a linear approach, but rather in a spiral image. The four Morse and Field (1996) processes for analysing qualitative data are explained in detail next.

4.3.1. Comprehend

Qualitative researchers endeavour to make sense of the data. As soon as researchers comprehend what is going on, they are able to better understand the phenomena. Once saturation has been reached, comprehension is completed (De Vos, 1998; Morse & Field, 1996).

4.3.2. Synthesise

The process of synthesising is when the data are sifted through and the pieces are inductively put together. At this point, the researchers are able to get a sense of what is common with regard to the phenomena. At the end of this process, researchers can make statements about the study's participants and phenomena being examined (De Vos, 1998; Morse & Field, 1996). One interpretation group with three subgroups were identified in this study, as illustrated by Table 2.

Table 2: Interpretation Group

Interpretation group	Interpretation subgroup (a)	Interpretation subgroup (b)	Interpretation subgroup (c)
Leverage marketing communication opportunities	Risks	Challenges	Support

4.3.3. Theorise

This step involves arranging the data in a systematic way. The researchers selected various models so that the data could fit into a body of knowledge. This takes place until the best solution for the data is found and alternate explanations are constructed (De Vos, 1998; Morse & Field, 1996).

4.3.4. Recontextualise

During the last step, recontextualise, the theory from step three is transformed to be used in other literature, settings, and populations. Therefore, it is said that the theory is recontextualised into other settings (De Vos, 1998; Morse & Field, 1996). Each interview was recorded using a digital voice recorder and field notes were taken. Hereby, the data are saved in electronic and paper-based formats. Table 3 illustrates the linkage between the interpretation group, the research method, the research questions used, and the relevant research objective(s).

Table 3: Linkage between Interpretation Group, Research Questions, and Objective(s)

Theme 1: Risks incurred by faculties when hosting Facebook pages			
Theme 2: Challenges of managing faculty Facebook pages			
Theme 3: Support required by faculties for Facebook efforts			
Interpretation group	Interpretation subgroup (a)	Interpretation subgroup (b)	Interpretation subgroup (c)
Leverage marketing communication opportunities	Risks incurred by faculties when hosting Facebook pages	Challenges of managing faculty Facebook pages	Support required by faculties for Facebook efforts
<p>Research method: Interviews</p> <p>Research questions:</p> <ul style="list-style-type: none"> • What are the risks and challenges encountered by the various faculties that use Facebook within the selected comprehensive university? • How can Facebook be used to leverage marketing communication opportunities in faculties at the selected comprehensive university? <p>Research objectives:</p> <ul style="list-style-type: none"> • To identify how to leverage marketing communication opportunities by using Facebook in faculties at the university. • To provide guidelines on how to effectively use Facebook as a marketing communication tool for faculties within the selected comprehensive university. 			

According to Lincoln and Guba (1985), the qualitative researcher should employ strategies to ensure that the qualitative data are good quality using the following four criteria:

- *Credibility*: This was established during the interviewing process, transcribing, coding, and analysing of the data. A pilot study was also conducted on three of the selected participants, as members of the population. This enabled the researchers to test the interview before conducting the formal interviews on the selected participants. Conducting a pilot test amongst the selected respondents ensured the trustworthiness of the research study.
- *Dependability*: The findings from this study can be applied to other research subjects in similar contexts and will produce similar results.
- *Transferability*: This refers to how the research findings can be projected to the population. Transferability is particularly important to this study, as social media usage is steadily growing in South Africa and marketers of other educational institutions could use this study as a baseline of how Facebook is used as a marketing and communication tool by a higher education institution.
- *Conformability*: A digital voice recorder was used so that there would be sound evidence of how conclusions and recommendations were made.

5. Results and Discussion

The results obtained from the respondents during the interviews were analysed and formulated to reflect the main categories/themes that emerged. All participants were eager in their responses and gave strong feedback.

5.1. Interpretation group – Leverage marketing communication opportunities

5.1.1. Interpretation subgroup (a) – Risks

Theme 1: Risks incurred by faculties when hosting Facebook pages

Interpretation subgroup (a) looks at the risks involved for each faculty having its own Facebook page. The respondents identified the following risks:

- “Staff or students sharing their personal opinions on the faculty page, which may seem like it’s the opinion of the faculty and not the individual that posted the information” (Respondent 1).
- “No control over who posts information on the pages, there isn’t any way to verify the authenticity of user accounts” (Respondent 5).
- “Angry students will use the page as a platform to share their opinions, which may be negative for the faculty and university brand/image” (Respondent 2).

- “Hacking into the faculty Facebook accounts and sharing negative information” (Respondent 8).
- “Facebook followers tagging the page in content that is not suitable for the university” (Respondent 4).
- “Lack of brand consistency across the various pages. The university seems disjointed” (Respondent 6).
- “There is no uniformity among faculty pages” (Respondent 3).

The researchers asked the respondents if they know what to do if someone posted negative information on their page. Only one of the eight respondents replied positively, merely because of having attended a Facebook training session at a previous place of employment. The other respondents stated that they were unsure of what to do. The quotes in Table 4 highlight the responses from respondents when asked what they thought the risks were of the faculty having a Facebook page.

Table 4: Quotes Concerning Risks of the Faculty Having a Facebook Page

Quotes from respondents when asked what they thought the risks were of the faculty having a Facebook page
“I think that we have had an informal session, not formal sessions and really how to handle the situation, so luckily I haven't been confronted [with] something really serious” (Respondent 1).
“It's quite tough and would need someone with online reputation management” (Respondent 5).
“I think that I am equipped to handle it, just take it as someone walking through that door” (Respondent 7).

Respondent 7 stated that dealing with negative information on the faculty Facebook page would be the same as dealing with someone who walked through the door. This statement reveals the lack of knowledge that Facebook page managers have with regard to responding to negative information. When someone walks through the door, people can assess the situation from the individual's tone of voice and body language. In addition, they are able to discuss the issue at length with the specific individual within the confinement of the office. Dealing with an online situation does not allow a person to assess the situation. In fact, by the time the information is read, it has already been made public and is on the Facebook timeline. Consequently, handling an online query is very different from handling a query with someone standing in your office.

According to Respondent 5, managing a situation where someone posted negative information on the Facebook page would require the skills of an online reputation manager. Conversely, Respondent 8 stated that they would not respond, but instead would send the query through to the social media office of the selected comprehensive university. This statement again underlines the lack of skills of the Facebook page managers, as ignoring the negative information on the Facebook page and waiting for the university to respond allows the information to be shared and disseminated to more people, causing a greater risk concerning the circumstances.

5.1.2. Interpretation subgroup (b) – Challenges

Theme 2: Challenges of managing faculty Facebook pages

This section of the in-depth interview discussed what challenges the respondents encountered with managing the various faculty Facebook pages. Some of the challenges identified by the respondents included:

- Inability to pay to advertise on Facebook;
- Inability to answer non-marketing-related administrative queries that come through on the page;
- Difficulty getting audiences to engage with content on the Facebook pages;
- Working in isolation of other faculties as well as the main university page of the selected comprehensive university;
- Lack of content to post;
- Getting more likes on the page.; and
- Lack of knowledge regarding the university's strategic plan for social media.

The quotations highlighted in Table 5 indicate the challenges respondents felt they face when using Facebook for their faculties.

Table 5: Quotes Concerning Challenges of the Faculty when Using Facebook

Quotes from respondents when asked what they thought faculty’s challenges were when using a Facebook page
“I think the challenge is doing advertising via Facebook, so how do we pay for this because working with the main system of the selected comprehensive university is difficult, how do I get this payment through so I can’t really do Facebook; it’s just a schlep” (Respondent 1).
“Fully engaging with our audiences” (Respondent 2).
“Challenges I think is that we work in isolation when it comes to Facebook” (Respondent 3).
“I think that one potential challenge would be the lack of content of post” (Respondent 4).

Respondent 1 indicated that one of the challenges is that the university procurement system does not allow for the payments of online advertising platforms, such as Facebook. Contrastingly, Respondent 2 said that the faculty’s main challenge is that they are powerless and can do nothing with regard to fans engaging with their audiences. Their audiences do not comment, share or respond to the information shared on the faculty Facebook page. However, Respondent 4 was of the opinion that the challenge is not getting audiences to engage with posts, but rather being able to find suitable and sufficient content to post. Lastly, Respondent 3 found that the challenge is that each faculty within the university works in isolation. There are eight faculties, each posting its own Facebook content, at its own frequency, with no link to any other page of the selected comprehensive university. This highlights the lack of collegiality among the faculties at the university.

5.1.3. Interpretation subgroup (c) – Support provided

Theme 3: Support required by faculties for Facebook efforts

In the interviews, the respondents were asked how they thought the selected comprehensive university could better support faculties’ Facebook efforts. The main themes from this discussion are highlighted in a word cloud in Figure 1 and included:

- Procurement – The selected comprehensive university should modify its procurement processes to allow for the payment of online platforms like Facebook.
- Shares – The selected comprehensive university should share faculty information on its main Facebook page.
- Uniformity – There should be policies within the university that ensure uniformity among faculty Facebook pages.
- Artwork – Corporate artwork should be provided to faculties by the university, which could be used on the faculty Facebook pages and posts.
- Training – All Facebook page managers should be sent on training.



Figure 1: Main Themes
Source: Researchers' own construct

The general consensus among the respondents was that the university could better support faculties by providing formal training on how to manage their Facebook pages. Topics for the training could cover aspects like how to advertise on Facebook, what to do should negative information be posted on the Facebook page, general information concerning Facebook usage, and how to manage the university page. Respondents further stated that the university could provide funds to faculties for advertising on Facebook and that the university should simplify the payment processes related to paying for online advertising. Another point raised was that the selected comprehensive university should share the university social media strategy with all the faculties, so that faculty marketers can align faculty Facebook activities to the overall social media strategy of the selected comprehensive university. All departments, faculties, and entities of the university should be working towards the same strategic goals. The marketing and communication strategy of the selected comprehensive university should filter into the faculty strategy to ensure that all goals of the institution are aligned. This is difficult to accomplish if the institution does not share the university social media strategy with the faculties. The following quote from Respondent 8 highlights the fact that the faculties have no access to the social media strategy of the selected comprehensive university: “By giving us their social media strategy so that we can base ours on theirs and then we are all more or less doing the same”.

5.1.4. Summary of findings from interpretation subgroups 1(a), 1(b), and 1(c) (themes 1–3)

To summarise the findings, there are many risks involved with faculties having their own Facebook pages. These include the lack of uniformity among all the Facebook pages of the eight faculties at the selected comprehensive university, people posting content that may not be suitable on the pages, and students using these pages as a platform to vent their anger. Two of the main challenges that the marketers face are they are unable to pay for advertising on Facebook and have to respond to administrative queries. This section also discussed the support that the university could provide to assist faculties with their Facebook marketing efforts. A summary of the findings of the results is presented in Table 6.

Table 6: Summary of Interpretation Subgroups (a), (b), and (c) with Themes Identified

Theme 1: Risks incurred by faculties when hosting Facebook pages			
Theme 2: Challenges of managing faculty Facebook pages			
Theme 3: Support required by faculties for Facebook efforts			
Interpretation group	Interpretation subgroup (a)	Interpretation subgroup (b)	Interpretation subgroup (c)
Leverage marketing communication opportunities	Risks incurred by faculties when hosting Facebook pages	Challenges of managing faculty Facebook pages	Support required by faculties for Facebook efforts
Main findings	<p>There are many risks involved in each faculty within the selected comprehensive university managing its own Facebook page, including:</p> <ul style="list-style-type: none"> • “Staff or students sharing their personal opinions on the faculty page, which may seem like it’s the opinion of the faculty and not the individual that posted the information” (Respondent 1). • “No control over who posts information on the pages, there isn’t any way to verify the authenticity of user accounts” (Respondent 6). • “Angry students will use the page as a platform to share their opinions, which may be negative for the faculty and university brand/image” (Respondent 5). • “Hacking into the faculty Facebook accounts and sharing negative information” (Respondent 4). • “Facebook followers tagging the page in content that is not suitable for the university” (Respondent 8). • “Lack of brand consistency across the various pages. The university seems disjointed” (Respondent 2). • “There is no uniformity among faculty pages” (Respondent 1). <p>Facebook page managers face various challenges, identified as:</p> <ul style="list-style-type: none"> • Inability to pay to advertise on Facebook; • Inability to answer non-marketing-related administrative queries that come through on the page; • Difficulty getting audiences to engage with content on the Facebook pages; • Working in isolation of other faculties as well as the main university page; • Lack of content to post; • Getting more likes on the page; and • Lack of knowledge regarding the university’s strategic plan for social media. <p>Facebook page managers could be supported by the selected comprehensive university as follows:</p> <ul style="list-style-type: none"> • Procurement – The selected comprehensive university should modify its procurement processes to allow for payment of online platforms like Facebook. • Shares – The selected comprehensive university should share faculty information on its main university Facebook page. • Uniformity – There should be policies within the university that ensure uniformity among faculty Facebook pages. • Artwork – Corporate artwork should be provided by the university to faculties. • Training – All Facebook page managers should be sent on training. 		

6. Importance of the Research Study

Marketing is vital in any organisation. For universities to survive and succeed in this environment, marketing should be a key aspect in their strategies. The marketing environment has changed with the inclusion of social media. Such a change has not eluded the higher education sector and it is important for the sector to come on board as new generations require a new form of communication (Farinloye, Wayne, Mogaji & Watat, 2020). Higher education institutions are making greater use of social media

and digital media platforms, such as YouTube, Facebook, Twitter, and podcasts, to market their programmes, as they realise the value of these platforms.

The findings of the study established that prospective students in South Africa can also obtain information about the university they are interested in by contacting current university students and discussing their living, learning, and engaging experiences. Traditionally, word of mouth plays a strong role in higher education marketing, but new ways need to be considered to engage prospective students by using social media as a communication medium. Social media offers universities globally valuable instruments to better communicate with the various target groups. The main advantage of using social media is the possibility to obtain feedback and actively engage with the consumer. Furthermore, research has established that 91% of public universities in South Africa are on social media platforms, but do not have social media policies in place, with 61% not having any documentation drafted to manage social media within the institution (Struwig & Van den Bergh, 2016). Considering this, universities in South Africa need to become proactive and introduce systems to manage the potential risks of social media.

7. Managerial Implications

Various recommendations are provided to the selected university when using Facebook as a communication tool. For one, all faculty staff should attend a compulsory social media rules and regulations information session at the selected comprehensive university, which will educate staff on Facebook etiquette within a personal and professional capacity. Such training will also assist in mitigating the risk of staff sharing inappropriate content on Facebook within their professional and personal capacity. Moreover, the university could start a one-on-one training session – for example, staff can book a session (group or individual) on any Friday of the month between 08:00 and 12:00 – as an “educate yourself” campaign regarding the use of Facebook. Moreover, if faculty marketers are unsure of the validity of user accounts, information received from that account should be authenticated or deleted. An additional recommendation is that faculty marketers be sent on training that teaches them how to deal with angry students venting on their faculty pages. This training should also include topics like reputation management, how to calm an angry person on a digital platform, and procedures to follow when faced with a potential reputational risk.

It is recommended that faculty marketers frequently check their Facebook pages and the content being posted on the pages to avoid any unsuitable information being shared on these pages. To assist them, Facebook has a page manager app that can be installed on all mobile devices and linked to the faculty Facebook pages. The Facebook page manager app will send a notification as soon as someone likes, shares, or makes a comment on the page. In the event of negative information being shared on the page, the faculty Facebook page manager should respond in a calm and apologetic tone, making every effort to understand where the anger and frustration come from, thereafter making an effort to rectify the situation. If the content on the post is derogatory and unsuitable, the information should be deleted and a message sent to the person sharing the information. The message should clearly state that the faculty does not support the comments made, resulting in the content being deleted. If all of the above fail, the university social media team should be consulted to advise on the way forward.

Each faculty at the selected comprehensive university should have a dedicated administrative staff member available to assist faculty marketers in responding to the administrative queries received on Facebook. This administrative staff member will have access to the faculty Facebook page and respond to all administrative queries received on the page. Alternatively, the Facebook page manager can send all the queries to the administrator. These e-mails could be red-flagged and have the subject line of “Facebook”, so that the administrator knows that these e-mails should be responded to timeously for the faculties to maintain a 100% response rate on Facebook.

Lastly, the eight faculties at the selected comprehensive university should start paying for advertising on Facebook. This will create awareness for the faculty Facebook pages at the selected comprehensive university. In addition, paid advertising on Facebook will increase the number of faculty page fans, because the advert will direct traffic to faculty Facebook pages.

8. Conclusions and Limitations

The purpose of the study was to identify how to leverage marketing communication opportunities by using Facebook in faculties at a selected comprehensive university in South Africa. Considering the results, it can be argued that the main advantage of using social media is the possibility to obtain feedback and actively engage with the consumer. Furthermore, research has established that majority of public universities in South Africa are currently on social media platforms, but do not have social media policies in place, with almost two thirds not having any documentation drafted to manage social media within the institution. Consequently, universities in South Africa need to become proactive and introduce systems to manage the potential risks of social media. A limitation of the study is that it only included the faculty marketing coordinators of one university in South Africa. Although the results of this study are relevant, they should not be generalised on a national level.

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The Impact Of Online Marketing Strategies On The Performance Of Small Independent Retailers In Soweto, South Africa

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Keywords

Small independent retailers; Online marketing; Internet; Social media; Digital marketing

Abstract

Background: The impact of online marketing strategies on the performance of small independent retailers forms a bridge between small independent retailers and consumers. Small independent retailers in South Africa face a challenge of building online relationships with their customers, which in turn has an impact on the performance of the business. Hence, the lack of online marketing activities causes failure to small independent retailers.

Objectives: The research seeks to establish whether online marketing strategies outcomes have an impact on the performance of small independent retailers. Internet, social media and digital marketing as part of online marketing were researched.

Method: The study employed a descriptive research methodology that involved a quantitative research design. The non-probability sampling method of convenience sampling was conducted using a convenience sample of three hundred small independent retailers in three townships in Soweto, namely, Meadowlands, Dobsonville and Protea North.

Results: The outcomes of the study established that of all the online marketing strategies only digital marketing was a significant determinant of small independent retailer's performance. A regression analysis assessed the impact of marketing communication strategies on the performance of small independent retailers. The results stipulated that online marketing strategies (digital marketing) influences the performance of small independent retailers, however, internet and social media do not predict performance.

Conclusion: In conclusion, the results of the conducted research established that online marketing strategies have an impact on the performance of small independent retailers.

1. Introduction

1.1. Problem Statement

The impact of online marketing strategies on the performance of small independent retailers is the focus of this article as they form a bridge between small independent retailers and consumers. Online marketing refers to instruments that are used to promote the products and services by means of the internet (Amondii, Senaji & Thuo, 2019). Marketing can be done by means of online marketing to enable them to communicate their products and services in the same way that many large businesses

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do (Rugova & Prenaj, 2016). Ghandour (2015) notes that small independent retailers are determined to invest in online marketing as a mean of doing business and have started to realise the function of online marketing (Ainin, Parveen, Moghavvemi, Jaafar & Mohd Shuib, 2015). The awareness of online marketing topics has increased amongst researchers in the internet technology field (Musa, Rahim, Azmi, Shibghatullah & Othman, 2016). Small independent retailers that implement online marketing would create advantages of raising outcomes, enhancing brand awareness and upgrading brand reputation (Musa *et al.*, 2016). Navrátilová and Milichovský (2015) discuss that online marketing allows small independent retailers to reach all customers through tablets, cell phones, laptops and improve all online marketing communication strategies on social media and websites where many campaigns can go viral. Online marketing has numerous media such as social media, websites, social networks, blogs and other channels people can interact online with whomever they need without any restrictions in terms of quality or quantity (Rugova & Prenaj, 2016).

Small independent retailers in South Africa face numerous challenges, such as lack of access to markets and the inability to build online relationships with their customers (Banking Association of South Africa, 2013). Esposito (2013) state that this limitation in online marketing strategies utilised by small independent retailers is due to a lack of marketing skills such as not having knowledge on how to advertise their products online. This statement is supported by Amondii *et al.* (2019) who highlight that South African small business failure is caused by lack of online marketing activities and skills. Existing studies on independent retailers have focused on the challenges impacting on the performance of small independent retailers in Soweto (Makhitha, 2016); examined the unique market offering of formal independent retail and wholesale small businesses in Soweto (Badenhorst-Weiss & Cilliers, 2014). The purpose of this study is to investigate the impact of online marketing strategies on the performance of small independent retailers in Soweto, South Africa. The topic of this study is of emergent importance to the country at large, as the small independent retailers play an important role to determine the future of South Africa's economic growth and development. Additionally, this study aims to show the small independent retailers to the topic of online marketing strategy if they have not yet been exposed to it, as this study aims to contribute to the knowledge regarding online marketing strategy within the small independent retail industry. In what follows in this article, the literature and hypothesis development based on relevant literature is presented before the methods and results of the survey conducted in Soweto.

1.2. Methodology

The quantitative approach using the survey method was used (Maree, 2014). In this study, the descriptive research design employed a cross-sectional design. The non-probability sampling method of convenience sampling was conducted using a convenience sample of 300 small independent retailers. The targeted respondents were conveniently selected in Soweto: 100 in Meadowlands, 100 in Dobsonville and 100 in Protea North. As a result, 300 questionnaires were distributed and 300 were usable, which represents a 100 percent response rate. Three field workers who were trained on how to collect the data were used to help with collecting data using a self-administered questionnaire.

The research variables used (internet, social media and digital marketing) were obtained from existing validated measures. Questionnaire items were adapted to suit the setting of the study from the studies of Soke (2014); Gaweseb (2015); Kallier (2016); Gabrielli and Balboni (2010); and Mokgoatlheng's (2013). Measurement were based on five-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (5), and a Likert scale ranging from 'never' (1) to 'always' (5), and nominal questions with a 'yes or no' answer. After the data was collected, the information from the questionnaires was firstly reviewed, then captured into a Microsoft Excel file, cleaned and transformed into useful and relevant information (Wiid & Diggines, 2015). Then the statistician imported the data into the statistical software package called SPSS version 25. Descriptive and regression statistics were used to determine the outcomes of online marketing strategies that have an impact on the performance of small independent retailers.

1.3. Hypotheses

The following hypotheses were formulated for the study:

- H₁: Internet has a positive influence on the performance of small independent retailers
- H₂: Social media has a positive influence on the performance of small independent retailers
- H₃: Digital marketing has a positive influence on the performance of small independent retailers

1.3.1. Hypotheses development

This section will develop the hypotheses of this article, namely internet, social media and digital marketing. For the purpose of this article, online marketing refers to internet, social media and digital marketing.

1.3.1.1. Internet and small independent retailers performance

The internet is seen as the leading advertising component of any business in today's world (Rugova & Prenaj, 2016). The internet is an important method to reach a larger number of customers, and is considered important to customers (Chu, Kamal & Kim, 2013). In contemporary businesses the internet and especially social media has a great influence, as it can be utilised to connect people around the world (Rugova & Prenaj, 2016). Musa *et al.* (2016) noted that the internet had contributed 41.7% towards the national economy per annum, with the possibility of rising in the following 3 years. The advance of the internet have contributed to online marketing (Riasi & Pourmiri, 2015). The successful implementation of the internet is seen as an essential issue that can warrant long-term growth of small independent retailers (Mason, 2015) as small independent retailers use the internet to communicate with their customers (Aggarwal, 2018).

Shakur, Hassan and Suk (2004) mention that internet shows a significant relationship with regard to small independent retailers, that is small independent retailers have the knowledge of using the internet. A study conducted by Marimuthu, Omar, Ramayah and Mohamad (2012) indicates that the internet is likely to positively impact the performance of small independent retailers. On the other hand, Boateng (2011) states that there is a lack of evidence to support that the impact of internet improves the performance of small independent retailers.

Based on the reviewed literature, the following hypothesis is established:

H¹: Internet has a positive influence on the performance of small independent retailers.

1.3.1.2. Social media and small independent retailers performance

Social media is an online application system programme or media that assists with sharing information online (Seo & Park, 2018). Social media consist of applications such as Facebook, Twitter, MySpace groups, Instagram and YouTube, which are unique media programmes that users use to communicate with each other (Mangold & Faulds, 2009). Musa *et al.* (2016) state that social media is a common platform accepted by small independent retailers in communicating and marketing activities. The benefit of social media to small independent retailers is to create more business coverage, improve the search engine rankings for the business and to increase traffic (Stelzer, 2011).

The speed of adopting social media within the small independent retailers is increasing rapidly over time (Wamba & Carter, 2016; Wang *et al.*, 2016). In Schivinski and Dabrowski's (2016) study, the impact of a marketing communication strategy such as social media towards product awareness had a positive influence on changing the customer's attitude towards the products. Inin *et al.* (2015) add that social media has a positive impact on small independent retailer's performance in improving customer relations. In spite of this Hassan, Nadzim & Shiratuddin (2015) indicated that the use of social media in small independent retailers is found to be low, and Sajid (2016) contends that less than 20% utilising social media. In addition, a survey conducted by Stelzer (2011) on small independent retailers showed that 38% of the employees of small independent retailers utilise social media for marketing purpose, and 23% of self-employed participants within the small independent retailers utilise social media for marketing purposes. This denotes that few small independent retailers utilise social media. According to Lovejoy and Saxton (2012), the impact of social media within small independent retailers has not yet reach its peak. There is inadequate evidence to prove that the impact

of social media on small independent retailers is significant (Donner & Escobari, 2010; Boateng, 2011).

As a result, the proposed hypothesis is:

H²: Social media has a positive influence on the performance of small independent retailers.

1.3.1.3. Digital marketing and small independent retailers performance

Digital marketing refers to the marketing of goods that use digital technology such as the internet mainly, and consists of email marketing, mobile advertising, search engine marketing, display of advertising (web banner), and any other form of digital means (Thomas & Thomas, 2018). A few small independent retailers use digital marketing to market their products and services. Most of them are now starting to use digital (Eriksson, Hultman & Naldi, 2008; Taiminen & Karjaluoto, 2015). Meaning that digital marketing helps the business to performance well (Jobber & Ellis-Chadwick, 2013). Digital marketing is based on the inward bound of marketing approach, which is usually called customer centric approach (Todor, 2016).

Brodie, Winklhofer, Coviello and Johanston (2007) assess the outcomes of digital marketing within small independent retailer's performance, and the researchers found that an increased usage of digital marketing had positive association with small independent retailer's performance. Omondi (2017); and Deraz and Gebrekidan (2019) support that digital marketing has a significant influence on small independent retailers and leads to better business performance. On the contrary, Kallier (2016) argue that there is low usage of digital marketing by small independent retailers. Taiminen and Karjaluoto (2015) agree that small independent retailers have not widely adopted digital marketing for marketing purpose. Donner and Escobari (2010) study found insufficient evidence to prove that digital marketing has an impact on the performance of small independent retailers.

The third proposed hypothesis is:

H³: Digital marketing has a positive influence on the performance of small independent retailers.

2. Literature Review

2.1 Online marketing strategies and small independent retailers performance

Online marketing refers to internet, social media and digital marketing. Poon and Albaum (2019) mention that online marketing is also known as internet marketing. Todor (2016) add that digital marketing is also known as online marketing, internet marketing or web marketing. Online marketing indicates to marketing through the Internet using e-mail marketing, Websites, promotions, blogs, online advertising and online video (Priskila, 2019).

Online marketing strategies within small independent retailers appear to be more instinctive and informal than in larger businesses (Bocconcelli, Cioppi, Fortezza, Francioni, Pagano *et al.*, 2018). Blankson and Omar (2002) discuss that online marketing strategies in this sector are not planned marketing practices as there is a lack of understanding of basic marketing principles. However, according to Dumitriu *et al.* (2019), small independent retailers are learning that they should utilise online marketing strategies that suits the rapid changing business setting.

The emphasis on customers has been enlarged by the arrival of online marketing because online marketing has radically changed the way businesses interact with their customers (Wierenga, 2008). Until recently, online marketing has been the primarily focus on improving website quality, developing price-based competition and building an online customer base (Verma, Sharma & Sheth, 2016) as online marketing is vital for today's marketing communication strategy (Corkum, Liu, Palma, Bauman, Dinniwel *et al.*, 2018; Chaffey & Ellis-Chadwick, 2019; Wu, Wen, Dou and Chen, 2015). Online marketing promotes products and services by using weblog promotion and social systems (Sajid, 2016). Online marketing can explain all the different prices that may appeal to customers and can allow businesses to combine certain types of information in one intricate message (Todor, 2016; Riasi & Pourmiri, 2015).

Online marketing allows small independent retailers to market, reach and influence customers efficiently by allowing collaborations between small independent retailers and providing customers the right freely express their opinions regarding the product or service (Todor, 2016; Corkum *et al.*, 2018). Some of these online marketing strategies lay a compact emphasis on customers' creativity to produce innovative ideas, such as customers that are encouraged to produce their own creative endings for advertisements. The noise from online marketing communication strategies make it more and more difficult for marketing messages to be noticed because the visual images are now mutual on social media and can attract customers attention in the online environment (Leung, 2019).

2.2 Importance of small independent retailers performance

There seems to be no common acknowledged definition for small independent retailers according to Scheffler (2018). However, Kruger (2012) described small independent retail as a separate and independent business that is managed by a single owner. Makhitha (2016) indicates that small independent retailers fall into a number of categories of Small, Medium and Micro Enterprises (SMMEs) as defined by the Department of Trade and Industry (DTI). Small independent retailers are known as intermediaries that sells goods and services for consumption purpose (Ombongi & Long, 2018). The National Small Business Act (1996) in South Africa explains small independent retailers by the number of employees, annual turnover and gross assets (Mohlameane & Ruxwana, 2013).

With regards to small independent retailer's performance, online marketing strategies improves trust between employees, which normally leads to excellent work performance (Charoensukmongkol, 2014). The online marketing strategies has a positive impact on performance of an organisation which is caused by the impact of brand knowledge or product/brand awareness (Kotler & Keller, 2012). Wang, Pauleen & Zhang, (2016) add that online marketing strategies enhance the small independent retailer's performance. Online marketing strategies have a positive impact on small independent retailers' success (Van Aardt, Van Aardt, Bezuidenhout & Mumba, 2008). Small independent retailers that focus on online marketing strategies usually become more successful when compared to those who do not focus on online marketing strategies (O'Dwyer & Gilmore, 2018).

3. Results and Findings

3.1 Demographic statistics

The results of the study show that 58% (n=171) of the respondents were males. With regards to age of the respondents, the largest proportion of the respondents was between the ages of 31 and 40 years (45%), followed by respondents between 41 and 50 years of age (28%); and between 21 and 30 years of age (22%). While the rest of the respondents were relatively equally distributed among the other age groups. Most (43%, n=127) of the small independent retailers in Soweto generate sales revenue per year range from R0 to R50 000. Those with revenue between R50 001 and R100 000 comprised 41% (n=123) of the respondents, and those with revenue between R100 001 and R400 000 comprise 12% (n=35) of the respondents. This was followed by 3% (n=10) of the small independent retailers with revenue between R400 001 and R900 000, 1% (n=2) with revenue between R900 001 and R1 500 000, while 0.3% (n=1) of the respondent indicated that they had revenue between R1 500 001 and R10 000 000. This denotes that there is not even 1% of small independent retailers that generate revenue above R10 000 000 per annum. This is expected on the basis that Soweto is an emerging township that falls in a third world country. The majority of small independent retailers had internet access (57%, n=170), and 43% (n=126) did not have access to the internet. In Wolf's (2011) study, it was confirmed that it seems most small independent retailers have access to internet, but most still experience challenges to use the internet. Respondents revealed that they access to the internet through the internet café (9%, n=15), business cell phones (86%, n=144), public hotspots (5%, n=8), and those who access internet by other means presented 1% (n=1) of the respondents.

3.2 Descriptive statistics

The results of this analysis are presented in Table 1.

Table 1: Descriptive statistics of constructs

Construct	Mean (Likert scale)	Std. Deviation
Internet	2.70	0.968
Social media	2.91	1.092
Digital marketing	2.42	1.274

Table 1 display on the mean scores and standard deviation of the three constructs, namely: internet, social media and digital marketing. The results highlight that small independent retailers weighs the importance on internet and social media with a moderate mean scores, and seem to pay less attention to digital marketing, as can be seen by the low mean scores on this construct.

3.3 Reliability analysis

Cronbach's alpha coefficient is used to measure the reliability of an instrument (Pietersen & Maree, 2014) to determine the internal consistency of internet, social media and digital marketing. Malhotra (2010) state that the Cronbach α of 0.70 is considered to be satisfactory. Reliability analysis (Cronbach alpha) was computed to determine the internal consistency of internet, social media and digital marketing. As a result, the overall Cronbach α for the composite scale was 0.851. The reliability analysis on each of the 3 items obtained a Cronbach's alpha item-total loadings ranged between 0.921 and 0.927, meaning that the instruments loaded well on their respective constructs. The reliability of the scales is satisfactory and consistent with other studies (Swanson, 2004).

3.4 Factor analysis

Exploratory factor analysis (EFA) is a multivariate analysis technique that is used to differentiate variables in a group of observed variables (Lamb, Wolfinbarger, Money, Samouel & Page, 2015). A loading of less than 0.5 is allowed depending on the sample size (Hair, Black, Babin & Anderson, 2010). Items with factor loadings those of less than 0.40 were omitted in this study. For the purpose of the study, three factors were indicated (internet, social media and digital marketing), with the purpose of investigating the impact of online marketing strategies on the performance of small independent retailers.

In order to extract these factors, the statistician suppressed the small coefficients absolute value below 0.50, which is a different approach that took time because it encompassed more iterations.

Table 2: Item loading per factor

Pattern Matrix^a			
Source of information (variables)	Factor		
	Internet	Social media	Digital marketing
<i>'We use the internet to research our competitors'</i>	0.812		
<i>'We have enough knowledge about the use of the internet to market our business'</i>	0.764		
<i>'The internet is useful for our business'</i>	0.716		
<i>'We use the internet to sell products'</i>	0.655		
<i>'We use the internet to research our customers'</i>	0.653		
<i>'Our business uses the internet to advertise products'</i>	0.591		
<i>'We have enough knowledge about social media and its role in marketing our business'</i>	0.515		
<i>'We offer information about our business on our social media'</i>		0.850	
<i>'We provide feedback about the products to our customers on social media'</i>		0.810	
<i>'Social media enables customers to share opinions about the products'</i>		0.766	
<i>'We WhatsApp our customers as a means of direct marketing'</i>		0.532	
<i>'We monitor our social media home page'</i>		0.505	
<i>'Using SMSs as part of direct marketing is good for our business'</i>			0.630
<i>'We use email to communicate with suppliers'</i>			0.583
<i>'We use Twitter for business purposes'</i>			0.581
<i>'We use YouTube for business purposes'</i>			0.578
<i>'We use LinkedIn for business purposes'</i>			0.560
<i>'We email our customers as a way of direct marketing'</i>			0.558
<i>'We unsolicitedly contact our customers over the telephone'</i>			0.549
Cronbach's alpha	0.925	0.927	0.921
Eigen value	28.05	3.34	1.92
Mean	2.42	2.70	2.91
SD	1.274	0.968	1.092
Extraction Method: Principal Axis Factoring.			
Rotation Method: Oblimin with Kaiser Normalisation.			
a. Rotation converged in 24 iterations.			

Table 2 shows the factor loadings for three factors, namely, internet, social media and digital media. A value near 1 indicates an item that loads highly on a specific factor. A loading of ≥ 0.50 can be considered as significant.

The construct 'internet' is Factor 1, and a reliability analysis conducted for Factor 1 achieved a strong Cronbach's alpha of .927, which is above the generally expected minimum of .7, with a mean score of 2.70, standard deviation of 0.968, and 3.34 eigenvalue. The small independent retailers moderately utilise internet which confirms the findings of Aggarwal (2018).

Factor 2 was named 'social media' because more items reflected the general utilisation of social media by small independent retailers. A reliability analysis achieved a strong Cronbach's alpha of .921, which is above the generally expected minimum of .7. A reliability analysis achieved a mean score of 2.91, standard deviation of 1.092, and 1.92 eigenvalue. Hassan *et al.* (2015) mention that the use of social media within small independent retailers was low.

Factor 3 was named 'digital marketing' and this factor reflected how small independent retailers use digital marketing to communicate with their clients. A reliability analysis conducted on this factor

achieved a strong Cronbach's alpha of .925, which is above the generally expected minimum of 0.7, with a mean score of 2.42, standard deviation of 1.274 and 28.05 eigenvalue. In Aggarwal's (2018) study, it was realised that that small independent retailers utilise the internet. However, small independent retailers that are making use of internet to communicate with their customers are faced with challenges such as running out of data, and without data they will not be able to connect to the internet (Mohlameane & Ruxwana, 2013).

3.5 The impact of online marketing strategies on the performance of small independent retailers

Regression analysis is a technique to investigate the functional relationships between variables (Chatterjee & Hadi, 2015). In order to test the hypotheses, regression analysis was employed. Multiple regression was achieved by modelling performance as a dependent variable and the composite of internet, social media and digital marketing as an independent variable. Table 3 summarises the regression analysis results performed to measure whether online marketing strategies acted as a significant predictor of performance. The results showed that the regression model is significant ($p = 0.000$; $F = 9.101$; $r^2 = 0.086$; $\Delta r^2 = 0.076$; and $r = 0.293$). This is found on the model summary on Table 3 ($0.086 \times 100 = 8.6$ (small) implying that the independent variable explains 7% of the variance of the dependent variable (performance).

Table 3: Regression coefficients

Regression												
Model variables	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics		Sig.	F	R ²	Adj. R ²	R
	B	Std. Error	Beta (β).			Tolerance	VIF					
(Constant)	4.045	0.307		13.197	0.000							
Internet	-0.147	0.081	-0.158	-1.812	0.071	0.294	3.398					
Social media	0.107	0.057	-0.150	-1.873	0.062	0.415	2.409	0.000	9.101	0.086	0.076	0.293
Digital marketing	0.188	0.081	-0.241	-2.333	0.020	0.491	2.037					
a. Dependent Variable: Performance												
Notes: N = 290; *** p ≤ .001; ** p ≤ .01; * p ≤ .05, r ≤ .30 (small), r ≥ .30 ≤ .49 (medium), r ≥ .50 (large).												
Note: The statistically significant p-values is highlighted in bold in the table												

The results of regression in Table 3 suggest that the effect of internet is not a significant predictor of performance (p -value >0.05 , $r = -0.158$), hence H^1 is not supported. The analysis further suggests that social media (p -value >0.05 , $r = -0.150$) on performance is not significant. The results do not provide statistical support for H^2 . As the p -value (<0.05) of digital marketing coefficients is significant, this is interpreted that digital marketing is the significant predictor of performance with a small negative relationship ($r = -0.241$). This results provide statistical support for H^3 , which is indicated in table 4. The above findings maintain that online marketing strategies influence performance ($p = 0.000$) within the small independent retailers in Soweto, South Africa. This is supported by a number of scholars, such as Shakur *et al.* (2004); Marimuthu *et al.* (2012); Boateng (2011); Inin *et al.* (2015); and Deraz and Gebrekidan (2019), which assent with the findings that state that the online marketing strategy has a strong positive impact on the performance of small independent retailers. Thus, in conclusion, the results of the current paper revealed that online marketing strategies (digital marketing) have an impact on the performance of small independent retailers. Nonetheless, internet and social media do not predict performance.

Table 4: Hypotheses summary

H ¹	Internet has a positive influence on the performance of small independent retailers	H ¹ is not supported
H ²	Social media has a positive influence on the performance of small independent retailers	H ² is not supported
H ³	Digital marketing has a positive influence on the performance of small independent retailers	H ³ is supported

4. Conclusion

The research seeks to establish whether online marketing strategies outcomes have an impact on the performance of small independent retailers. The conducted research concludes that online marketing strategies have an impact on the performance of small independent retailers. A regression analysis assessed the impact of marketing communication strategies on the performance of small independent retailers. It can be concluded that online marketing strategies (digital marketing) influence the performance of small independent retailers. Additionally, internet and social media do not predict performance. The impact of online marketing strategies on the performance of small independent retailers was achieved by using performance as dependent variables, and online marketing strategies as an independent variable. Meaning that the performance of small independent retailers depends on online marketing strategies. The study shows promise for investigating the impact of online marketing strategies on the performance of small independent retailers, and all the research objectives were achieved. This article has laid the groundwork for future studies in the marketing of small independent retailers by contributing to the literature that provides a more comprehensive view of online marketing strategies and its contributing factors within the small independent retailers contexts.

5. Implications and recommendations

In Ainin *et al.* (2015) study, their research confirms that online marketing strategies have a positive influence on the small independent retailers. The study recommends that small independent retailers should continue to manage relationships with their customers by using digital marketing. In the case of this study, only digital marketing is a vital determinant of small independent retailer's performance. The study recommends that small independent retailers continue utilising digital marketing, as digital marketing is used as a type of electronic media to promote products and communicate with customers. The current study further suggests that small independent retailers share and communicate information with their customers that will, in turn, increase their performance. The results of this study have implications for academics in that most studies in online marketing strategies highlight digital marketing as direct predictors, therefore performance acts positively as an outcome. Small independent retailers need to pay attention to how they use the internet and social media, all of which are also elemental ingredients in the business success. Lastly, small independent retailers need to learn to utilise online marketing strategies that suits the rapid changing business setting.

6. Limitations of the study

The existing literature, specifically small independent retailers, was limited, therefore literature used in the study was based on small and medium-sized enterprises. The study focused only on the impact of online marketing strategies on the performance of small independent retailers in Soweto, not any other areas financial management, business planning, and choosing the right location. Therefore, the fact that a convenient sampling method was employed limits the generalisability of the results. The sample was limited to small independent retailers who were predominantly owners, managers and sales assistants, therefore further research can focus on medium-sized enterprises based in other sectors.

Acknowledgments

This paper benefited from the help of a number of people. Thanks to myself (Mr Vincent Funani Makhubela), Professor Khathutshelo Mercy Makhitha, Professor Louise van Scheers, and my family for discussions about the mechanisms investigated in this paper. My thanks to all other parties as well.

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Qualitative Analysis On The Impact Of Digital Disruption On The Competitiveness Amongst South African Advertising Agencies

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Keywords

Digital, advertising, disruption, competition, agile, consulting, data.

Abstract

The advertising ecosystem has been digitally disrupted, exposing weaknesses in the business model that South African advertising agencies have relied on for decades. As a result, many advertising agencies are losing business to new dynamic and nimble competitors who have emerged in the digital age. The primary objective of the study is to explore the impact of digital disruption on competition in the advertising industry and recommend ways in which advertising agencies can respond to competition.

The research methodology used was qualitative with non-probability, judgement sampling. Semi-structured interviews were administered to fifteen practitioners from marketing, advertising, media, production, and regulatory bodies.

The main findings indicated that digital technology has lowered the barriers to entry and as a result there is increased competition in the advertising industry. Increased competition in the advertising industry is driven by the insourcing of creative services by marketers as well as the entry of consulting firms, technology companies and technology savvy start-ups.

This study helps academics and practitioners understand the nature of competition in the advertising industry and equips advertising agencies with ways to respond to increased competition.

1. Introduction

Digital disruption has changed the face of competition in the advertising industry, for example, clients are investing in-house studios, consulting firms are acquiring creative agencies and agencies are starting to in-source production services (Toefy, 2018). In keeping with the in-sourcing trend by marketers, Sheiner and Earon (2019) observe that “marketers now start the planning phase of their strategy based on their own Big Data analysis.” Unless traditional agencies develop new competencies, new propositions and hire digitally savvy talent, they are doomed to fail in today’s economy (Anon. 2, 2017). Chesbrough (2010), Schlegelmilch *et al.* (2003) and Osterwalder and Pigneur (cited by Pedersen *et al.*, 2018:269) warn that “failing to be innovative implies that competitors may enter the scene with new offerings that make prevailing business models redundant.” The current reality, according to Patel (2017), is that advertising agencies have failed to adapt their business models to meet the needs of today’s “hyper-connected consumer.”

Marketers are challenging advertising agencies to display digital skills. In Anon. 2 (2017), a survey by eMarketer revealed that 74% of senior marketers list marketing data and analytics capabilities as some of the key criteria in selecting an advertising agency. Kannenberg (2018) and Toefy (2018) advise that technology has become a competitive edge to agencies and cautions that unless agencies are willing to

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partner with ad tech companies to enhance their use and understanding of technology, they will not succeed in the digital age. Hull (2017) agrees that in the digital age, organisations need “technologists, consultants, storytellers, copywriters, creative people, entrepreneurs and data scientists to make sense of it all.”

According to Lee (2017), advertising executives like Jason Gonsalves, Mel Exon and Jon Sharpe concur that the advertising industry’s business model needs to be transformed. Toefy (2018) argues that a new ‘agency’ which breaks traditional boundaries is an answer to the need for better creative solutions. This new model considers more closely its various stakeholders such as publishers, brands, audiences and consumers as well as assess what their needs really are in an always-on environment for multi-national, regional and local clients and for millennial-driven digital brands.”

1.1. Problem Statement

Advertising agencies are facing pressure from new competitors to make their structures more efficient. According to Levin *et al.* (2018) “the advertising industry has reached maturity with low barriers to entry to new entrants.” Custers (2017) is of the opinion that “traditional agencies are being disrupted by their leaner, digitally enabled counterparts.” Kannenberg (2018) concurs that agencies need flatter and leaner structures because clients are no longer prepared to tolerate oversized agency teams. The problem that this study seeks to resolve is the existential crisis that traditional advertising agencies in South Africa face, which is brought about by more digitally savvy competitors. Do traditional advertising agencies embrace digital transformation or lose out to new digital, agile, technology-driven competitors?

1.2. Methodology

Qualitative research was conducted. It took the form of fifteen semi-structured (saturation + 1) open ended interviews with junior, middle and senior management practitioners from the regulatory bodies and the marketing, advertising, media, production industries. The participants were all chosen because of their experience in marketing, advertising and in the functioning of client-agency relationships. Non-probability, judgement sampling was used to select these participants. The sample frame that was used to select participants consisted of a list of advertising agencies and advertisers obtained from the Financial Ad Focus 2017 magazine, IAB (Interactive Advertising Bureau) Digital Agencies), MASA website (Marketing Association of South Africa) as well as from the ACA website (Association for Communication and Advertising). Saturation or redundancy was reached after analysing six participant transcripts.

A qualitative pilot study was conducted with two participants. One was a senior advertising practitioner and the other was an advertising executive. One-on-one in-depth interviews were held with these participants. Each interview lasted forty-five (45) minutes. Feedback from these interviews was used to refine the questions in the discussion guide, for example, some of the questions were dropped from the final discussion guide in order to avoid repetition. Some questions were reworded in order to make them clearer.

In the main study, each participant received a consent form via email explaining the reasons for the qualitative study, informing them of their right to refuse to participate, and assuring them of confidentiality. Once signed consent forms were received from the **selected** participants, the researcher emailed the Discussion Guide to them. The researcher contacted the participants to schedule interviews. Five participants opted to email their written responses to the researcher prior to their face-to-face interviews, whilst the other ten of the participants elected to do face-to-face semi-structured interviews. All interviews were conducted by the researcher, and they took place between 26 April 2018 and 11 May 2018. Each interview lasted between 45 and 60 minutes. Some of the interviews were conducted in the researcher’s office while others took place in the participants office. Once permission had been obtained from the participant a voice recorder was used to record the interview. Transcripts of the interviews were sent to a professional transcriber who used the Phillips

Speech Exec Pro software to do the transcription. The written transcripts were sent to a professional analyst for analysis.

The software package Nvivo 12 was used during the data analysis and reduction.

2. Literature Review

The introduction of digital marketing has raised questions about the suitability and effectiveness of the advertising industry's current business model. According to Mangani (2003:295) the growth of the internet has altered the advertising industry's business model. Some commentators feel that advertising agencies are no longer valued partners to marketers because they have lost relevance (Satell, 2014; Hagel, 2016; & Hausman, 2015). The advertising agencies' business model has failed to keep pace with the changing needs of marketers (Manson, 2009). Perkin (2017) warns that advertising agencies' approach to client engagement and remuneration needs to change. Satell (2014), Patel (2017) and Hausman (2015) argue that advertising agencies need to revise their business model to redefine how they deliver and create value in the digital age. Kannenberg (2018) states that "when UK-based market intelligence firm, Creativebrief, questioned 50 agency CEOs and 50 brand CMOs about the changing role of agencies, they found that 68% of agency respondents and 72% of brands believe that agency structures, processes and pace of delivery are not developing at the same rate as the brands' needs."

One of the challenges faced by the advertising industry, according to Kerr *et al.* (2015:392), is that most agencies strategies and tactics are still relying on models and theories from the 1970's and 1980's. The approach that advertising agencies have been applying to traditional advertising development has had to evolve as a result of the shift to digital marketing (Saputra & Motik 2013:749).

According to Long (2018), Michael Buckley, Managing Director of Accenture Interactive, opined that marketing has become about experience, and not just advertising campaigns. Long (2018) argues that digital transformation equips organisations with the capability required to deliver end to end customer experiences and to play a part at every stage in the customer decision journey. This approach enables you to affect "call centres, the frontline staff, retail and commerce."

Paul Howes, head of KPMG's Customer, Brand and Marketing Advisory Business explains that clients approach them for help with digital transformation on brand, customer and marketing. According to Long (2018) "we formed a view that you can't successfully help businesses transform without helping them to transform their customer experience, and you can't transform their customer experience without transforming their brand, and you can't transform their brand without transforming their marketing, and I suppose that is why we are following through in the supply chain."

Berman *et al.* (cited by Troung & McColl, 2010:710) concurs that many of today's mainstream advertisers do not fully grasp the opportunities presented by digital transformation. Kannenberg (2018) advises that "while many of today's traditional agencies have started to expand their digital focus and tech proficiency, their progress hasn't been enough to close the extensive gap between their capabilities and those of the more-savvy digital shops. Creativity skyrockets unbound by the limits of existing technology. True innovation starts with the systems." Graham (2018c) explains that "VML absorbed sibling WPP agency Rockfish, a digital innovation shop with e-commerce expertise that generated \$70 million in revenue in 2016, according to the Ad Age Datacenter. VML told Ad Age earlier this year it planned to put more of an emphasis on artificial intelligence, virtual reality and augmented reality in 2018."

Traditionally, competition for Advertising agencies has come mainly from other advertising agencies. Before the digital age advertising agencies did not have to worry about competing with clients' in-house advertising agencies media agencies, technology start-ups, publishers and management

consultants. According to Levin et al. (2018) “the advertising industry has reached maturity with low barriers to entry for new entrants.” Finn (2020b) points out competition is also coming from unconventional competitors like Cognitive, a business that started in Information Technology before evolving into an integrated marketing agency.

Michael Porter’s Five Forces Model was used as a lens through which to analyse the impact of digital disruption on the state of competition in the advertising industry. According to Satell (2014), an analysis of the advertising industry through Michael Porter’s Five Force Model proves that the industry is facing an existential crisis. Michael Porter’s Five Forces Model is a marketing strategy tool used by organisations to analyse the level of competition in an industry as well as its sustainability and attractiveness. The level of competition in an industry has an impact on industry profitability and attractiveness to potential entrants (Kotler & Keller, 2009:334 & Hough *et al.*, 2008:53).

Many advertising executives and marketers agree that advertising agencies today are facing uncertain times, largely due to digital transformation as well as a tough economic climate. Maggs (2016:5) spoke to Daniel Padiachy, head of marketing at McDonalds, who argued that the lines between traditional advertising agencies, media agencies and digital agencies are being blurred and that the future lies in collaboration. Padiachy is advocating for a move from “a multi-agency approach where we would traditionally get silo-like thinking” (Maggs, 2016:5) to a more collaborative approach. Graham Warsop, founder of The Jupiter Drawing Room, agrees that a better model is one that brings together specialist skills in a collaborative fashion (Maggs, 2016:5). Gau Narayanan, managing director of Net#work BBDO argues that agencies need to focus on “strategic integration, collaboration and operational delivery” (Maggs, 2016:7).

FIGURE 1 (Kotler & Keller, 2009:335) is a representation of Michael Porter’s Five Forces Model. These five forces include potential entrants (threat of mobility), industry competitors (segment rivalry), the threat of substitutes, the bargaining power of suppliers (supplier power) and the bargaining power of buyers (clients).

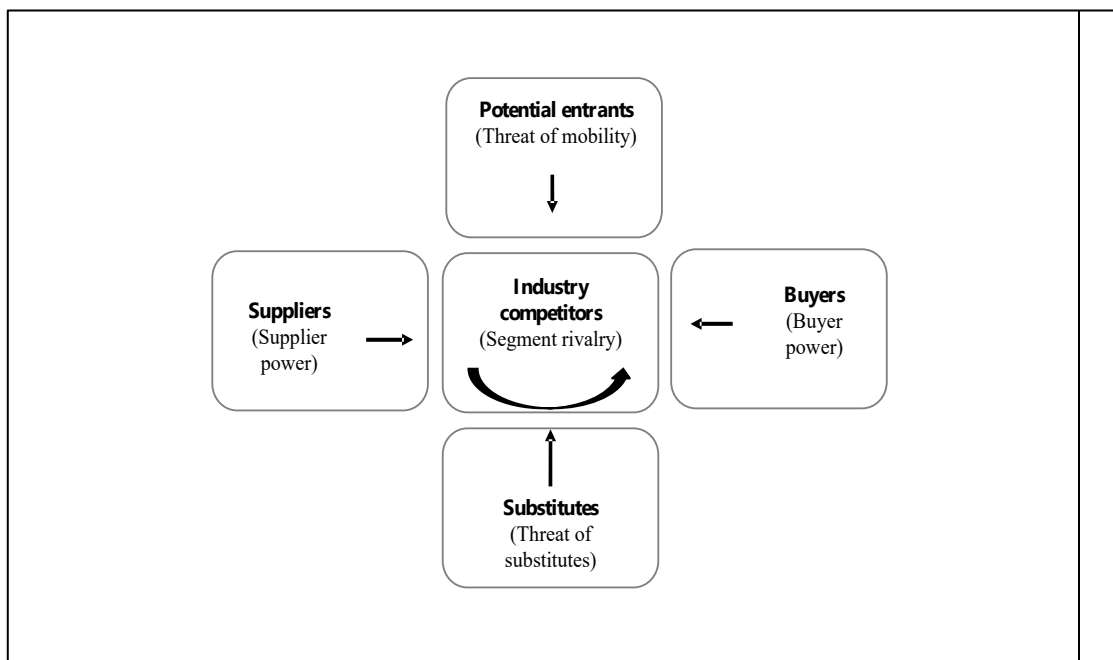


Figure 1: Five Forces Determining Segment Structural Attractiveness (Kotler & Keller, 2009:335)

Competitive rivalry

There is a high level of competition for market share in the South African advertising industry and this makes it less attractive to potential entrants (Maggs, 2015:5). Intense competitor rivalry often leads to price wars and margin erosion (Kotler & Keller, 2009:334). It also leads to “loss of market share and customer traction” (Maggs, 2015:5). Sometimes competition is driven by the acquisition of smaller specialised firms by their larger competitors to gain a competitive edge (Hough *et al.*, 2008:63). According to Kannenberg (2019), the ever-changing requirements of digital marketing demand a diverse set of capabilities which in some cases will come from different agencies. This means advertising agencies need to be open to partnering with agencies they would otherwise consider as competitors.

The threat of new entrants

There is a surge in the number of “small entrepreneurial hotshops” who are competing with the larger advertising agencies (Fels, 2016). Beasley (2016) summarises the threat of new entrants succinctly by stating that “as fees have been cut, workloads have increased, and measurement has become more complex, legacy agencies are getting cut out of the freelancers and boutique agencies.” Lucas and Goh (cited by Loebbecke & Picot, 2015:3) state that innovative start-ups disrupt prevailing business models by “exploiting digital distribution channels, creating and serving new customer demand, establishing new forms of customer engagement and relationships, or any combination of the three.”

The threat of substitution

Pathak (2018c) argues that digital agencies are under attack from the entry of management consultants in the advertising landscape and from in-sourcing by clients. This is attributed to the suggestion that most digital agencies are tactical in nature and lack a deep understanding of business dynamics. According to Whittler (2017) and (Patel (2017), advertising agencies face competition from large management consultancies who, in addition to offering creative services, also offer business and strategic consulting services which advertising agencies do not offer.

Management consultants are hiring talent from advertising agencies “as they seek to help clients to transform their organisations into customer-centric digital businesses” (Long, 2018). Gianatasio (2018) makes the point that management consultants have differentiated their offering from that of advertising agencies by merging marketing with technology. According to Pathak (2018c) consultancies are commodifying agency services by offering to provide design and user experience solutions for free whilst charging for strategy.

According to Hull (2017), “consulting firms have the competence to apply the technology to make campaigns more efficient and touchpoints far more personalized.” Management consulting firms and technology companies such as Adobe, Oracle and Epsilon have been acquiring agencies with competencies in digital marketing, design, user experience and mobile (Dan, 2016; Lee, 2017).

These new competitors bring strategic skills, project management skills as well as digital skills in technology and data analysis. Hull (2017) states that when Accenture acquired a digital agency called Karmarama they gained customer experience competency blended with creativity, data and digital skills. Price (2017) concurs that for advertising agencies to future-proof themselves against the threat of consultancies, “they need to think more like consultants and offer a wide array of technical solutions.”

Hull (2017) states that Accenture has added customer experience competency by acquiring Kunstmaan agency and gained a blend of creativity, data and digital when they acquired Karmarama agency. This consolidation is fueled by the fact that marketing is increasingly becoming based on data and technology (Price, 2017). This, in turn, is negatively impacting how advertising agencies operate as well as how they are remunerated (Perkin, 2017), prompting a communications planner, Motshegwa (2017) to question the relevance of advertising agencies in the digital age. Hesz (2017) argues that consulting firms, unlike advertising agencies, realise that advertising needs to have a

positive commercial impact, and not just a cultural impact. Some agencies like Huge and R/GA have responded to this threat by developing consulting and business transformation capability, and this is proving to be successful. (Pathak, 2018c).

Consulting firms are able to apply the technology and make more efficient campaigns and tailor-made touchpoints (Hull, 2017). Johnson (2018) states that in 2017 more than half of agency revenue in the United States was attributed to digital advertising, however the bulk of this went to consulting firms and not advertising agencies. Joseph (2017) provides two reasons for this. Firstly, consultancies focus on the budgets of the CEO, CIO and CFO which happen to be much larger than the CMO's budget. Secondly, marketers allow them to handle conflict business, a courtesy they seldom extend to advertising agencies (Joseph, 2017).

Lee (2017) argues that advertising agencies can use innovation, collaboration, flexible employment practices and their ability to tell emotional stories, to differentiate themselves from management consultancies. According to Lee (2017a), Leo Rayman of Grey Advertising is of the view that unlike management consultants who focus on short-term key performance indicators (KPIs), advertising agencies need to focus on long term brand building. Price (2017) however, counters that for advertising agencies to future-proof themselves against the threat of consultancies, they should act like consultants and their technical solutions should be varied.

Long (2018) informs us that Justin Papps, partner and head of CMO Advisory at PwC, states that there are three elements to PwC's value proposition. They include "strategy (brand and marketing strategy, data analytic strategy and segmentation strategy), structure (an Organisational Design team that designs future-fit teams and departments) and spend (helping clients improve their return on marketing investment).

Lee (2016), Kawaja (2015), Ledbetter (2017), Beasley (2017) and Whitler (2017) all concur that advertising agencies are facing competition for talent from technology companies such as Google, Facebook, Uber, Twitter, Instagram and Tesla, data marketers such as Acxiom, Epsilon, Merkle, Neustar, consulting firms such as Accenture, IBM, McKinsey, PwC and Deloitte and publishers such as AOL, Yahoo, Herbst, Vice and BuzzFeed. Management consulting firms and technology companies such as Adobe, Oracle and Epsilon have been acquiring agencies with competencies in digital marketing, design, user experience and mobile (Dan, 2016; Lee, 2017).

The bargaining power of suppliers

Suppliers to the advertising industry include production companies, recording studios, edit suites, casting agencies, voice banks, cost consultants, pitch and relationship consultants and research companies, amongst others. The bargaining power of suppliers increases when they are organized or concentrated and when there are few substitutes" (Kotler & Keller, 2009:335). According to Hough *et al.* (2008:70) some suppliers use their size and dominant position in the market to unilaterally set and dictate prices to their customers.

The bargaining power of clients

The incidence of clients in-sourcing creative services has had the effect of increasing their bargaining power in relation to advertising agencies (Lee, 2017). One of the marketers with an in-house advertising agency is Crocs (Morrison, 2012). According to Perkin (2017) advertising agencies are facing time and profit margin pressures from clients as well as a commoditization of their services. As Beasley (2016) explains, agencies are being expected to deliver more work for less fees. The power of client procurement departments as well as in-sourcing by clients further threaten agency margins. Pathak (2018c) explains that "the more tactical and repetitive the work, the more the marketer can bring it in-house." Lion (2018) warns that even though procurement drives cost-savings for clients, the voice of the marketing department needs to be louder because marketing creates value.

Clients are demanding more accountability and transparency around agency fees (Feldman, 2017). According to the Agency Scope study conducted in 2016 by Vacchiano and McDowell (2016:18) 54% of the study’s sample stated that the Procurement department is involved in agency fee negotiations. When clients have disproportionately more bargaining power than agencies, the client-agency relationship runs the risk of changing from a partnership to a supplier-client relationship (Whitler, 2017).

3. Results and Findings

To explore the impact of digital disruption on competition in the advertising industry, the following question was asked in the interviews:

- a) What is the role of advertising agencies?
- b) How has advertising agencies evolved over time?

Reduction of the data was based on “word trees” and thematic analysis. The mentioned “word trees, contributed to the overall reduction of the data processes. A Word Tree is a diagram that shows nodes or codes in a hierarchical fashion. In other words, it contains words or phrases that are most frequently used in the study. Figure 14 is a Word Tree on accountability of the marketing function that was developed using insights from the research findings.



Word trees for the following questions:

What is the role of the marketing function?

Has the role of marketing evolved over time? If so, in what way?

The results, contained in TABLE 1 capture the responses to the above research question. Data reduction has been done to reflect identified themes with participant’s responses as confirmation. Table 1 represent categories of data into focussed theme’s.

Table 1: What is the role of advertising agencies and how has it evolved?

Question	
What is the role of advertising agencies and how has it evolved over time?	
Themes	Participant responses
Digital skills	<ul style="list-style-type: none"> • “Agencies who understand customers digital life and journey and how to use those insights to have meaningful conversations with them and sell them products and services relevant to their lives.” • “Talent which is well rounded and versed on digital trends and operations.” • “Clients expect agencies to be digitally ready and they expect agencies to lead the journey.” • “The CMO and the CIO role is now kind of merging and morphing into one, because a lot of digital marketing is technology driven and the evolution of marketing is now one that requires a full understanding of technology and information and communication technology.” • “Suddenly, you’ve got digital managers in every business everywhere, and everybody is trying to do digital strategy.” • “Clients are also wanting all the agencies to be more digital and to work in a disciplined, agnostic way.”

<u>Business minded</u>	<ul style="list-style-type: none"> • “The inner workings of an agency’s success is to have people who understand that their contribution to the company is about business success.” • “Both creativity and effectiveness. I think creativity drives effectiveness and, if the work is to be effective it must be creative. So, I think those things are the two key drivers of success in an [sic] ad agency.” • “And the return on investment. And that’s really the big thing for our clients. They need to know what actually works and what actually doesn’t, and that’s really the impact.”
<u>Creativity and strategic thinking</u>	<ul style="list-style-type: none"> • “And I strongly believe that it’s hinged on great creative ideas and strategic thinking.” • “I think agencies need to understand that it’s not all about the TVC, that you can be extremely creative on digital, but it requires a very different approach to content creation, to creativity. And, now more than ever, creativity is required in strategy, it’s required in media planning, and it’s required in content creation, and the agency of the future needs to embrace this.” • “But, more and more, it has to be about the thinking and the ability to adapt to change.”
<u>Flat structure</u>	<ul style="list-style-type: none"> • “The smaller agencies are actually delivering a lot more in terms of digital. I think that their teams are small, they’re getting a lot of the work out, and I think, because they have a flatter structure, they’re able to offer just a little bit more.” • “Become flatter in order to gain more direct engagement with Clients.”
<u>Nimble and agile</u>	<ul style="list-style-type: none"> • “I think agencies need to be more agile and nimble, it’s definitely a recipe for success for an agency.” • “Transparency, agility, responsiveness.” • “Second thing would be to maintain the agency’s relevance by being able to and nimble enough to adapt, morph around clients’ needs.” • “So flexibility and ability to adapt.” • “As well as looking at how an agency can restructure itself to become more profitable, not only for themselves but profitable for the clients. So, efficiencies in today’s world is [sic] absolutely critical for success.”
<u>Flexible revenue models</u>	<ul style="list-style-type: none"> • “Agencies need more agile revenue models” • “Shared risk/remuneration models, true partnership.”
<u>Consumer-centric</u>	<ul style="list-style-type: none"> • “So, I think the way in which we approach everything that we do has to fundamentally change. I think what we need to be doing is starting with consumers, and not our brands, and working backwards.” • “Agencies need to be able to partner with clients in a way that helps them navigate those changing needs and demands of clients, the end consumer experiences. And that will ultimately deliver relevant solutions.” • “We need to ensure that whatever we do is done that has relevance in their lives. So the media selection in respect of where and how consumers and advertisers meet up show be relevant and appropriate to their lives.”
<u>Speed</u>	<ul style="list-style-type: none"> • “Clients demand quicker, more agile and innovative thinking. Agencies are stuck in the past and find it difficult to keep up with the demands of the clients in today’s world. Agency processes are old, slow and uncompromising.” • “In addition to the large traditional campaigns, clients are also looking for agencies to create tactical and quick turnover content pieces to live online.” • “Speed of execution is critical. Work with greater flexibility and speed.” • “So, there’s this huge pace and need for speed in the market, whether it’s you’re creating product, delivering it into the market, onto shelves, or creating a product and selling it to clients online.”
<u>Collaborative</u>	<ul style="list-style-type: none"> • “True partnerships is the way of the future for client agency relationships. Partnerships

<u>partnerships</u>	<p>with digital platform owners like Facebook and Google, trained and skilled people, agile leadership, open minded support (like finance, operations, creative and production process).”</p> <ul style="list-style-type: none"> • “The ability to partner with other service providers rather than trying to do the work alone is important. Work with other service providers in the form of partnerships and joint ventures.”
<u>Business minded</u>	<ul style="list-style-type: none"> • “I think, from an advertising point of view, we are expected to be a lot more business minded and business focused, as well as strategic, and moving a lot closer to the needs of the marketing department as well as the business.” • “It’s not about an ad agency receiving accolade upon accolade for their creative work. It’s about an ad agency retaining customers and helping the client’s business succeed in order for their business to succeed.” • “The role of advertising itself has moved from advertising into business solutions.”
<u>Consulting skills</u>	<ul style="list-style-type: none"> • “Ad agencies are specialist consultants to business.” • “So, I think that the role of agencies has shifted from one of being a provider of work, an ad, a print ad, radio ad, to more being a strategic partnership.” • “So, for the industry and for us, it’s very tough, and it’s gonna get even more [sic] tougher, and we need proof-ready ourselves for the times when the likes of the Accentures and Deloittes are playing harder.” • “The consultants are getting into digital advertising.” • “Agencies are facing competition from non-traditional agencies / consulting companies in the areas that were previously considered to be the domain of agencies.”

Source: Own compilation

4. Conclusion

Advertising agencies have had to adjust their organisational structures to be better able to deliver on the evolved needs of clients and the end consumer. Advertising agencies have also had to optimise their organizational processes because of digital disruption. Advertising agencies are required to be nimble and agile. Advertising agencies need to adopt flexible remuneration models such as a shared risk model. The implication for advertising agencies is that they need to be more transparent, agile and responsive.

Advertising agencies need to evolve with the new consumer and media landscapes. They can no longer dictate to consumers but should rather let consumers tell them what they need and how to service their needs best. Agencies need to include consumers in the conversation as this will deepen consumer understanding, resulting in insightful creative solutions. Good consumer understanding will help agencies produce creative work that is relevant, impactful and reflective of society.

Agencies need to ensure that they leverage the power of digital media to target the right consumer with the right message at the right time. They also need to analyse various media platforms for effectiveness and impact. This involves the ability to use information and analytics gained through direct contact with consumers to shape the messaging and increase its efficacy.

The need for agencies to evolve their structure and processes has never been greater. Agencies need to replace heavy and expensive operations with flat, agile, nimble, and integrated structures. They need to be more transparent and faster in their responsiveness. They also need to be client centric.

5. Managerial Implications

Marketers are under increasing pressure to demonstrate return on marketing investment. This requires exceptional data analysis skills on the part of advertising agencies, a capability that consulting firms and more digitally focussed advertising agencies are good at. According to Participant 7 *“the advent of the digital age has added an additional complexity of accountability. In the current climate, every impression, click, view and bounce need to be accounted for: data has heralded in the age of ROI and*

accountability for the marketing profession.” Participant 5 add that *“the emergence of data and the impact it has on the reporting of campaign effectiveness means that agencies are far more accountable for the creative produced and the media spent.”* Advertising agencies therefore need to invest in data analysts in order to assist their clients achieve measurability and accountability, or risk losing relevance.

The digitalisation of the broader advertising ecosystem has disrupted the advertising industry by exposing weaknesses in its current operating model. Unless advertising agencies evolve their business model, consulting firms and more digitally savvy agencies will continue to exploit these weaknesses. Participant 15 adds that *“technology has changed the landscape between how brand owners are able to analyse consumer behaviour and trends and how they are able to communicate more directly and in a targeted way to their users.”* Advertising agencies need to ensure that they keep up with these changes in the consumer landscape.

Digital technology has lowered barriers to entry in the advertising industry and as a result, advertising agencies are facing more competition from new nimble, technology savvy agencies, technology companies and consulting firm. Participant 4 argues that *“for the industry and for us, it’s very tough, and it’s going to get even more tougher, and we need to proof-ready ourselves for the times when the likes of the Accentures and Deloittes are playing harder.”* Participant 6 agrees that *“consultants are getting into digital advertising.”* Competition from technology companies and customer experience in digital agencies has heightened the need for advertising agencies to become more adept at creating consumer or customer experiences. Technology is also coming from marketers (clients) who have resorted to in-sourcing creative services.

Marketers are calling on advertising agencies to be more collaborative, nimble, and quicker. Participant 2 opines that *“clients demand quicker, more agile and innovative thinking. Agencies are stuck in the past and find it difficult to keep up with the demands of the clients in today’s world. Agency processes are old, slow and uncompromising.”* The implication for advertising agencies is that they need to be evolve their structure, processes and ways of working in order to be fit for purpose. Participant 10 concurs *“the smaller agencies are actually delivering a lot more in terms of digital. I think that their teams are small, they’re getting a lot of the work out, and I think, because they have a flatter structure, they’re able to offer just a little bit more.”*

Advertising agencies need to evolve their skill set to keep up with competition from new, nimble digital advertising start-ups, technology companies, digital media agencies and consulting firms who have pivoted their services to include digital advertising. Participant 2 states that *“clients expect agencies to be digitally ready and they expect agencies to lead the journey.”*

Must-have skills for advertising agencies to succeed in the digital age include general and specialist skills, consulting skills, advisory skills, and project management skills. Agencies need to be digitally enabled. Participant 14 opines that *“due to the fact that personalisation and the interaction with the consumer is one on one and it’s not mass anymore, it requires that insight to really be driven hard.”*

Advertising agencies are required to possess good marketing technology capability, data analysis capability, strong creative ability, innovation and collaboration with clients, a good understanding of the client’s business and of a fragmented media landscape. Participant 7 argues that *“for the biggest portion of it, it’s measurability. I think it’s, for the first time, you’re able to measure, if not all, most of what you do. And I think that’s because of the measurability and the digital transformation that’s happening within marketing.”* Agencies are also required to have a good consumer understanding. According to Participant 1 the future belongs to *“agencies who understand customers digital life and journey and how to use those insights to have meaningful conversations with them and sell them products and services relevant to their lives.”*

5.1. Recommendations

- Advertising agencies and clients need to embrace Modern Marketing.

Agencies and clients alike need to base their approach to marketing and advertising on the dictates of Modern Marketing, which are that it uses omni-channel strategies to connect brands with consumer; combines brands with customer experience; is enabled by digital transformation; brings together creativity; data and technology and enables advertising agencies to influence various aspects of the customer decision journey.

- Advertising agencies need to deliver interactive, always-on, personalised content.

The proliferation of digital platforms has increased the amount of content that is consumed, thereby making it difficult for marketers to achieve, stand out and make an impact. Digital marketing enables advertising agencies to create content that is personal, bespoke and for the consumption thereof to be interactive.

5.2. Limitations

The study was conducted in South Africa, but there is a need to understand the impact of digital disruption on competition in advertising industries in other markets. There is also a need to understand the impact of digital disruption on other parts of the advertising value chain such as the role of clients' procurement departments.

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Visitor Perceptions of Safety And Security At An Urban Tourist Attraction In South Africa

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Keywords

Safety incidents, security incidents, visitor perceptions, zoological garden, urban tourism

Abstract

The National Zoological Garden of South Africa (NZG) serves as an important urban ecotourism attraction in Pretoria. It is ranked as one of the highest rated zoos globally, attracting more than 600 000 visitors annually. It provides numerous social, economic, and environmental benefits and contributes towards the roles of providing education, research, recreation and conservation. Zoological gardens are dependent on the income generated from visitors. Safety and security concerns may influence a visitor's choice of visiting such an attraction, especially if they are located in a central business district, which has a high crime rate. Through structured questionnaires completed by visitors at the NZG, this study aims to explore the current visitor perceptions of safety and security at the NZG. Similar to other literature regarding the NZG, the majority of respondents were satisfied with the current standards of safety and security at the NZG. However, the study found that issues related the general safety and security protocols and procedures, more visible security available throughout the zoo, and improving the zoo infrastructure. This research can help to better understand how visitors perceive the current standards of the safety and security measures and protocols at the NZG and can provide guidelines on how management can address any issues or enhance any measure to improve visitor experiences.

1. Introduction

Tourism has emerged as a major global industry and hence, concerns for tourists' safety has been a major concern for a number of years (De Albuquerque & McElroy, 1999). Tourism experiences are mainly about pursuing tourist satisfaction, however, there are significant risk factors associated with travel and tourism (Fuchs & Pizam, 2011). Tourists often associate trips with challenges of security and safety (Tarlow, 2009) and safety and security concerns in tourism are recognised as a driving force causing changes in the industry in the new millennium (Breda & Costa, 2005). Destinations always have to guarantee a tourist's safety (Ronald & Kenneth, 2003) because the issue of safety and security is a basic need in all areas of human activity, including tourism (UNWTO, 2016).

Safety and security are essential components in all tourist attractions and facilities which may include transportation, attractions, restaurants or hotels (Tan, Chong & Ho, 2017). In tourism literature, the occurrences of safety and security incidents are often mentioned without any clear differentiation, however, safety and security incidents do differ in their essence (Fuchs & Pizam, 2011). Fuchs and Pizam (2011) describe safety incidents as instances where tourists are injured accidentally and without any malice whereas security is described as the protection of a person, place, or reputation from intended harm (Tarlow, 2009).

The high incidents of safety and security incidents threaten the growth of South African tourism (George, 2010). Furthermore, South Africa has received considerable negative media attention as a tourist destination due to several high-profile cases involving crime against tourists (George, 2010). Since tourism is a human activity, it is sensitive and reacts quickly and differently to incidents of

crime (Nkosi, 2010). The violent crime that South Africa experiences is a massive deterrent for tourists and negatively influences the image of the country (Ferreira & Harmse, 2000).

This paper investigates the current visitor perceptions of safety and security at the NZG. The NZG is the largest zoo in the country and the only one with national status (Botha, Kruger & Viljoen, 2021). It is also regarded by World Atlas as one of the best zoos globally, attracting more than 600 000 visitors annually (Sen Nag, 2018). However, according to the South African National Biodiversity Institute (SANBI) (2019), the NZG has recently been affected by low visitation numbers (SANBI, 2019). A contributing factor noted by SANBI (2019) is the location of the NZG, with it being situated in the central business district in Pretoria. Crime Statistics South Africa (CSSA) (2020) reports Gauteng as the highest ranked province, in terms of crime, with Pretoria ranked in the top 10 worst crime districts in the country.

Therefore, this paper asks the following question: What are the current visitor perceptions of safety and security at the NZG? This question is answered by making use of a descriptive quantitative research approach, by means of a survey research design targeted at visitors at the NZG. Evaluating the safety and security aspects will assist the NZG to identify gaps in their current offerings and develop strategies to rectify them, for the benefit of the visitors and the overall survival of the NZG.

2. Literature review

2.1 Tourism and safety

Tourist visitation decisions are based on their unique personalities, attitudes, values and lifestyles and include visiting new places, having new experiences and meeting different people and cultures (Simkova & Holzner, 2014). This is ultimately associated with human psychology, which involves understanding people's motivations for travelling, individual needs and satisfaction (Simkova & Holzner, 2014). Hamarneh and Jerabek (2018) indicate that a tourist's feeling of safety and security is one of their basic needs. The incidents of terrorist attacks, natural disasters, pandemics, wars or high levels of crime at a specific destination can result in potential visitors evaluating whether or not they should reconsider their travel destination or cancel their travelling plans (Hamarneh & Jerabek, 2018). Gisolf (2014) states that many theories have been developed and several models have been designed to explain individual needs in tourism

2.2 Theories of visitor motivation

The first theory of motivation is Abraham Maslow's Hierarchy of Needs. This theory is one of the most familiar theories of individual motivation (Smit, Cronje, Brevis & Vrba, 2011). In this theory, Maslow identified five levels of individual motivation ranked in the following order: physiological needs; safety needs; affiliation (love and belonging) needs; esteem needs; and self-actualisation needs (Smit et al., 2011). This theory of individual motivation was based on two assumptions. The first is that people always need more and the needs of individuals are dependent on what they already have. A satisfied need will no longer be a motivator; however, an unsatisfied need can influence behaviour. The second assumption is that an individual's needs arise from importance (Smit et al., 2011). The needs lower down the hierarchy are regarded as more important and must be satisfied first before individuals can attend to needs higher up on the hierarchy (McLeod, 2018). In this theory of individual motivation, the need for safety and security is the second level that needs to be satisfied after the basic physiological needs have been satisfied. With physiological needs, the need to feel safe and secure requires maintenance throughout one's life (Poston, 2009). This need is more psychological because safety needs may differ depending on the individual and where they are in their life (Poston, 2009).

The second theory, created by Clayton Paul Alderfer, developed Maslow's hierarchy of needs into a theory of his own, called Alderfer's Existence, Relatedness, and Growth (ERG) theory (Yang, Hwang & Chang, 2011). The Alderfer's ERG theory refines Maslow's hierarchy of needs by using three steps or classes of needs: existence, relatedness and growth needs (Yang, Hwang & Chang, 2011). The ERG theory aims to answer the question, "What motivates a person to act?" and assumes that all human activities are motivated by a need (Chang & Yuan, 2008). Yang et al. (2011) describe existence needs as needs which include different forms of safety, physiological and material needs. Furthermore, Chang and Yuan (2008) state that existence needs include things such as: food, water,

air, clothing, safety, physical love and affection. The relatedness needs include senses of security, belonging, and respect (Yang et al., 2011). Chang and Yuan (2008) state that relatedness needs encompass relationships with significant others, this includes being recognised and feeling secure as part of a group or family. The growth needs involve needs for self-esteem and self-actualisation (Yang et al., 2011). These needs urge an individual to render creative or productive effects on themselves and the environment around them (Chang & Yuan, 2008). In this model, safety and security are classified as an existence need in that it is a need for basic material necessity (Digitalis Tankonyvtar, 2011).

The third theory of motivation is the push and pull theory. The examination of visitor motivations through the push and pull theory has been widely accepted in tourism literature (Uysal, Li, & Sirakaya-Turk, 2008). The push and pull theory is often used to explain tourists' or visitors' decisions to visit a particular destination rather than other destinations of a similar nature (Said & Maryono, 2018). According to Slabbert and Viviers (2012:69), push factors in this theory relate to the motivational factors or needs that may arise from a state of disequilibrium with the visitor or tourist. These motivational needs affect visitor behaviour and influence the choice of destination (Said & Maryono, 2018). Pull factors on the other hand, are described by Slabbert and Viviers (2012) as external forces that consists of certain attributes or features of a destination that meet the needs of the visitor or tourist. These features or attributes stem from an individual's belief or perception of a destination (Beerli & Martin, 2004).

Tourist safety and security is often prioritised as an important factor in the push and pull theory as indicated by Shin (2005), who concludes that safety and security at destinations is a predominant thought for tourists. Salimon, Kareem, Mokhtar, Yusoff and Gorondutse (2019), also state that when tourists perceive their intending destinations not to be secure, they tend to develop a negative perception of the destination and refrain from visiting. Ultimately, drawing from this theory and the other theories of motivation that were previously discussed, tourists have a need for safety (push factor) and will seek for places that they perceive will provide it (pull factor).

An individual's safety and security needs have constantly been an essential condition in the tourism industry (Kovari & Zimanyi, 2011). Recent global changes have been significant, with incidents such as terrorism, wars, natural disasters, epidemics and pandemics all having a negative impact on the tourism industry and exposing the vulnerability of tourism's safety and security (Kovari & Zimanyi, 2011). Events like the COVID-19 pandemic have shown to have drastic consequences on the global tourism industry (Fletcher, Büscher, Massarella & Koot, 2020). South Africa's issues of safety and security have also been identified as a high concern in the National Tourism Sector Strategy (South African Department of Tourism, 2017). The high levels of crime pose a threat to many urban attractions in South Africa (Pitte & Boulle, 2010). Other criminal activities such as the illegal dumping, poaching and arson also directly impact negatively on an attraction's biodiversity (Pitte & Boulle, 2010). The perception of these criminal activities negatively impacts the well-being of many South Africans and greatly impacts the tourism sector (Perry & Potgieter, 2013).

Perceptions play a vital role in influencing tourists' decisions on choosing a destination to visit (Perry & Potgieter, 2013). The tourists' perceptions of a destination's image are not solely developed from media tools but are developed from a combination of many personal experiences (Horrihan, 2009). George (2003) states that tourists may develop negative impressions of attractions if they experience feelings of being unsafe or threatened while on holiday. Furthermore, George (2003) argues that these negative impressions are harmful to the destination's tourism industry and can lead to a decline of tourism to an area influencing travellers not to visit a destination due to a high crime rate reputation or influencing travellers to not participate in activities outside their accommodation facility if they feel unsafe at a destination, or by influencing travellers not to return nor recommend a destination where they have felt threatened or unsafe.

Pizam and Mansfeld (2006) state that tourism demand and supply are sensitive to safety and security incidents. According to Fuchs and Pizam (2011), the safety and security incidents negatively affect

the delivery of the tourism 'product' as it causes changes in the visitors' perceptions of risk. Jonas, Mansfeld, Paz and Potasman (2011) argue that the fear of safety and security incidents creates the overall risk perception of an attraction, ultimately affecting a visitor's decision-making and shaping their behaviour.

An individual's perceived risk is based on their perceptions of uncertainty and negative consequences of purchasing a product or service (Dowling & Staelin, 1994), or participating in an activity, or selecting a specific lifestyle (Reisinger & Mavondo, 2005). Sonmez and Graefe (1998) discovered that previous international travel experiences of travellers affected their perceptions of safety-risk and also affected their future travel behaviour. Their study also noted that respondents with international travel experience were more likely to compare their perceptions with reality than those respondents who lacked travel experience. Sonmez and Graefe (1998) concluded that the perceptions of travellers are more harmful to their travel decision-making than the actual safety and risk at a destination. A study by Ramoliki (2013) analysed domestic travellers' responses regarding safety and security of travel within South Africa. Ramoliki (2013) concludes that domestic travellers within South Africa perceive travel as dangerous and were highly concerned about the incidents of theft, robbery, rape, murder, mugging and assault during their travel.

2.3 Safety and security at urban tourist attractions

The NZG provides an important conservation platform for endangered wildlife in the world (Hermann & Du Plessis, 2014). Urban tourism attractions such as zoological gardens, depend greatly on the financial support received from visitors such as entrance fees and sales for their long-term survival (Jordaan & Du Plessis, 2014). Ogunjinmi, Oniya and Oboh (2017) state that the majority of visitors around the world do not visit zoos alone, but in groups with friends, relatives, spouses, or children. Furthermore, Hermann and Du Plessis (2014:1170) conclude that visitors at the NZG are primarily motivated to visit by the need to enhance relationships with family and friends, making the NZG a site for family and friends to meet and get together in their leisure time. According to Mastroianni (2013), safety and security concerns may influence a tourist's choice of visiting a specific destination, particularly when their family is involved in the journey. With the NZG's location being in Pretoria's central business district, which, is ranked as one of the most unsafe precincts in the country (CSSA, 2020). It is important to understand what the visitor perceptions of the NZG's current safety and security standards are and whether their risk perceptions are heightened if they are accompanied by family members or friends.

Mearns and Liebenberg (2018) evaluated the perceptions of public safety and the safety of visitor facilities at the NZG. Their study identified certain issues with safety and security, which were perceived by visitors. Mearns and Liebenberg (2018) found that safety signage was not present at enclosures of certain dangerous wildlife species, as well as a shortage of signage that provides information regarding safety around the zoo. It was also noted that safety outside the NZG was an issue as Mearns and Liebenberg (2018) reported that security was not visible outside the NZG (Kgosana, 2014; Kubheka, 2014). Mearns and Liebenberg (2018) concluded that the three important areas that the NZG needed to address relate to access and availability of parking, safety and security concerns inside and outside of the zoo and the lack of conservation promotion by the NZG. Mearns and Liebenberg (2018) further state that visitors face serious consequences if the abovementioned aspects are not dealt with.

3. Methodology

This study made use of a descriptive quantitative research method in the form of a self-administered questionnaire to gather the information needed to address the research objectives. The questionnaire was designed for the purpose of this study by making use of a comprehensive literature review and using other studies as guidelines. The following studies were also used as guidelines in the development of the questionnaire; Hermann and Du Plessis (2014), Mearns and Liebenberg (2018), Tomas, Crompton and Scott (2003), and Ryan and Saward (2004).

The target population for this study consisted of all visitors to the NZG who are 18 years old and older. When this study was initiated, the visitation figures from the NZG, indicated that the total number of visitors for 2017 was 430 739 people (Allenby, 2018). It was presumed that these numbers were consistent over the research period but may have been negatively affected in 2020 due to the COVID-19 pandemic. A sample refers to a subset of the population (Wagner *et al.*, 2012). Considering a 95% confidence level and 5% margin of error, the sample size calculated for this study was 384 respondents (Survey Monkey, 2018).

Due to the COVID-19 pandemic, the sampling technique used for this study was a hybridised non-probability sampling. The study made use of a non-probability sampling technique due to the inability to use probability sampling (i.e., the low response rate in the probability survey due to potential respondents being hesitant or cautious of contracting COVID-19). The method of non-probability sampling used was the convenience sampling method. This was a necessity due to the uncertainty of the COVID-19 pandemic. Data collection took place during November 2020 to January 2021 and was done physically (267 respondents) and online (38 respondents) resulting in a total sample of 305. To test the reliability of data a Cronbach's alpha coefficient test was conducted and revealed variables each with α scores greater than 0.8.

4. Results and Findings

4.1 Results of Visitor Perceptions of Safety and Security at the NZG

The questionnaire consisted of six sub-categories of safety and security at the NZG namely: pathway safety, vehicle and parking safety, enclosure safety, signage safety, amenities safety, and general safety and security. Respondents were asked to what extent they agreed or disagreed with the statements relating to the sub-categories. The questionnaire also contained an additional comment section for respondents to provide some additional information or voice their opinions.

With regard to the six sub-categories, respondents were asked to what extent they agreed or disagreed with the statements relating to the sub-categories. An exploratory factor analysis was conducted based on the results obtained. Table 1 presents the respondents' responses towards the six sub-categories. The results are presented according to the percentage of respondents that either 1 = strongly disagreed (SD), 2 = disagreed (D), 3 = neither disagreed nor agreed (N), 4 = agreed (A), or 5 = strongly agreed (SA), with the following statements.

Table 1: Descriptive Safety and Security Responses.

VARIABLE	PERCENTAGE OF RESPONSES (%)				
	SD	D	N	A	SA
1. Pathway Safety					
The pathways are well maintained.	5,25	12,79	15,08	40,98	25,90
Pathways are not slippery.	5,90	9,18	13,77	41,97	29,18
There is sufficient signage to enclosures.	0,98	10,49	20	39,02	29,51
There is sufficient signage to emergency exits.	4,59	14,43	19,34	36,07	25,57
There is no debris on pathways.	4,59	13,44	22,30	37,05	22,62
Pathways are wheelchair friendly.	5,90	9,18	13,77	41,97	29,18
Visitors are well protected from hazardous work areas on pathways.	5,25	12,79	15,08	40,98	25,90
2. Vehicle and Parking Safety.					
Parking is sufficient for the number of visitors.	5,90	19,34	19,67	34,43	20,66
Parking is well allocated at the entrance of the zoo.	2,30	13,44	16,72	41,31	26,23
Vehicles are safe in the parking lot.	6,23	14,1	24,59	33,77	21,31
Security personnel can be seen at the parking lot.	2,30	9,84	20,98	41,64	25,25
Security personnel are trustworthy.	2,62	8,2	37,05	35,41	16,72
Sufficient disabled parking is available near the entrance.	2,30	10,16	38,36	30,16	19,02
3. Enclosure Safety					
Signage at enclosures provide information about the animals.	0,98	3,28	16,39	48,52	30,82

Signage at enclosures clearly provide information about visitor zoo behaviour.	2,62	7,87	20,98	43,93	24,59
Off-limit areas at enclosures are clearly indicated.	1,64	5,9	21,97	43,28	27,21
Enclosures are wheelchair accessible.	0,66	5,9	27,54	38,69	27,21
4. Signage-related Safety					
Signage is clear and visible.	1,31	5,9	17,7	43,93	31,15
Signage is well maintained.	1,97	10,82	18,69	40,33	28,2
Warning signs and off limit areas are clear.	1,97	6,23	18,03	43,61	30,16
Signage for toilet facilities is clearly indicated.	1,64	8,2	14,43	45,25	30,49
Assembly points are clearly indicated.	3,28	8,52	23,61	38,36	26,23
Emergency exits are clearly indicated.	3,61	9,84	21,31	40,00	25,25
Signage is safe for visitors.	0,33	4,59	18,03	45,9	31,15
There is sufficient signage in the zoo.	1,64	6,56	20,98	44,59	26,23
5. Amenities Safety					
Toilet facilities are safe to use.	2,30	7,87	22,3	37,38	30,16
Toilet facilities are well maintained.	3,93	10,49	22,62	36,72	26,23
There are disabled toilet facilities available.	0,98	4,59	41,31	31,48	26,56
The rides for children are safe to use.	0,33	4,26	37,38	31,48	21,64
The rides for children are well maintained.	0,98	4,92	38,69	31,15	24,26
The cableway is safe to use.	12,46	8,20	38,69	31,15	24,26
Personnel present ensuring safety at the cableway entrance.	10,82	7,21	39,02	26,89	16,07
Personnel present ensuring safety at the cableway exit.	10,16	7,87	42,30	22,62	14,43
The cableway is well maintained.	12,79	7,87	42,30	22,62	14,43
The golf carts are safe to use.	0,98	2,62	31,15	36,07	29,18
Personnel inform visitors on correct golf cart usage.	0,98	3,61	34,10	35,08	26,23
The golf carts are well maintained.	0,33	4,26	34,43	33,11	27,87
The shops and kiosks are easily accessible.	1,31	1,64	21,31	42,28	32,46
The shops and kiosks are clean and well maintained.	0,33	4,92	21,97	39,34	33,44
6. General Safety and Security					
Information about safety and security measures are provided at the entrance.	13,44	12,13	21,31	31,15	21,97
Contact details in case of emergencies are provided at the entrance.	16,07	12,13	22,95	28,85	20,00
Safety orientation or safety tips are provided at the entrance of the zoo.	17,7	11,48	21,31	27,87	21,64
First aid is readily available at the zoo.	12,79	10,82	30,49	26,56	19,34
Security personnel are visible throughout the zoo.	11,48	10,16	18,69	38,36	21,31
There are no issues with the cell phone reception in case of emergencies.	2,30	6,23	17,70	36,39	37,38
The zoo is not overcrowded.	2,95	5,90	16,39	39,34	35,41

Source: Authors' Own Creation

Each of the key areas presented in Table 1 are discussed individually. The results are as follows:

4.2 Pathway Safety.

Most respondents agreed that the pathways are well maintained for visitors to use (66,88%). Most respondents also agreed that pathways are not slippery, meaning that there was no water or grease on pathways to cause accidents (71,15%) and also that pathways had no debris (68,53%) and visitors were well protected from hazardous work (61,64%). The respondents also agreed that the pathways had sufficient signage to enclosures (59,67%) and sufficient signage to emergency exits (71,15%). Lastly, respondents agreed that the pathways were wheelchair friendly (66,88%).

4.3 Vehicle and Parking Safety.

Many respondents agreed that the parking is sufficient for the number of visitors (55,09%). Most respondents also agreed that the parking is well allocated at the entrance of the zoo (67,54%). More than half of the respondents also agreed that the vehicles are safe in the parking lot (55, 08%). When it comes to the security personnel at the parking lot, 66,89% of respondents agreed that security personnel can be seen at the parking lot. Notably, 52,13% of respondents agreed that security personnel is trustworthy. However, 37,05% of respondents neither agreed nor disagreed on the trustworthiness of the security personnel. Lastly, less than half (49,18%) of respondents agreed that there is sufficient disabled parking available near the entrance of the NZG. The results obtained relating to safety and security of vehicles and parking are in line with the results of the study by Mearns and Liebenberg (2018). Their study indicated that slightly under half of respondents found the parking facilities adequate for the visitors to the NZG.

4.4 Enclosure Safety.

The respondents agreed that the signs at enclosures provide information about the animals (79,34%) and they clearly provide information about visitor zoo behaviour (68,52%). Most respondents also agreed that the off-limit areas at enclosures are clearly indicated (70,49%). The respondents also agreed that the enclosures at the NZG are wheelchair accessible (65,90%). The results obtained relating to safety and security of the enclosures are in line with the results of the study by Mearns and Liebenberg (2018). Their study indicated that respondents found the enclosure facilities adequate for the visitors to the NZG.

4.5 Signage-related Safety.

The respondents agreed that the signage at the NZG is clear and visible (75,09%) and that the signage is well maintained (68,53%). Respondents also agreed that warning signs (73,77%), signage for toilet facilities (75,74%), assembly points (64,59%), and emergency exits (65,25%) were all clearly indicated. Most respondents also agreed that signage is safe for visitors (77,05%) and that there is sufficient signage in the zoo (70,82%). These results contradict the study of Mearns and Liebenberg (2018) which concluded that the signage in the NZG is inadequate, noting that safety signage was not present at enclosures of certain dangerous wildlife species, and that there was a lack of general signage with the information boards needing to be updated.

4.6 Amenities Safety.

The respondents agreed that the toilet facilities at the NZG were safe to use (67,54%) and well maintained (62,95%). More than half of the respondents also agreed that there are sufficient disabled toilet facilities (58,04%). However, a significant number of respondents neither disagreed nor agreed that there are sufficient disabled toilet facilities (41,31%). These results are in line with the results of Mearns and Liebenberg (2018) who found that 51,7% of their respondents agreed that the toilet facilities were clean and safe to use. Slightly over half of the respondents agreed that the rides for children at the NZG are safe (53,12%) and maintained (55,41%). Notably, a significant number of respondents neither disagreed nor agreed on the safety (37,38%) and maintenance (38,69%) of the rides for children at the NZG. Over half of the respondents (55,41%) agreed that the cableway is safety to use. However, a significant number of respondents neither disagreed nor agreed on the safety of the cableway (38,69%). Many respondents also neither disagreed nor agreed on the personnel competency at the entrance (39,02%) and exit (42,3%) of the cableway and the maintenance (42,3%) of the cableway. It should be noted that the cableway had not been functioning during the data collection period. With regards to the golf carts at the NZG, many respondents agreed that the golf carts are safe to use (65,25%) and that personnel inform visitors on correct golf cart usage (61,31%). Notably, 60,98% of respondents agreed that the golf carts were well maintained. However, a significant percentage of respondents had neither disagreed nor agreed on whether the golf carts were well maintained (34,43%). Lastly, when it came to the shops and kiosks, respondents strongly agreed that the shops and kiosks were easily accessible (74,74%) and were clean and well-maintained (72,78%). These results were in line with the study of Mearns and Liebenberg (2018) who noted that the shops and kiosks were of low concern.

4.7 General Safety and Security.

Most of the respondents agreed that the information about safety and security measures (53,12%), contact details in case of emergencies (48,85%), and safety orientation or safety tips (49,51%) are all provided at the entrance of the NZG. Many respondents neither disagreed nor agreed on whether first aid is readily available at the zoo (30,49%). However, 45,90% of respondents agreed that first aid is readily available. The latter is supported by Mearns and Liebenberg (2018) who identified that first aid points were adequately sign-posted. The respondents agreed that security personnel are visible throughout the zoo (59,67%) and had strongly agreed that there are no issues with the cell phone reception in case of emergencies (73,77%). The respondents also agreed that the zoo is not overcrowded (74,75%).

4.8 Results of the Factor Analysis: Identifying interrelationships among variables

An exploratory factor analysis was conducted on the results of safety and security to identify any interrelationships among the different variables. The Orthogonal (Eigenvalue-weighted) Varimax Rotated factor solution indicated that 9 factors were extracted from the 46 Likert scale items. However, the three items that loaded onto Factor 8 loaded higher on Factor 1. This factor was hence discarded. The total variance of this study is 29,7465, after the exclusion of unreliable variables. The Cronbach's alpha for each factor were assessed to establish if internal consistency had been achieved. The results indicate that Cronbach' alpha coefficient for all the factors is above the 0.7 mark except Factor 9. The factor solution was revised by considering a restricted 7 factor solution. Table 2 displays the results for the seven (7) factors that were retained.

Table 2: Factor Analysis Results for Safety and Security.

FACTORS	Mean	Factor Loadings	Variance	Cumulative Variance	Reliability Co-efficient (Cronbach's alpha)
Factor 1: Enclosure and Signage Safety.			6.27546	6.27546	0.9216
Signage at enclosures provide information about the animals.	4,05	0.5799			0.9199
Signage at enclosures clearly provide information about visitor zoo behaviour.	3,80	0.7147			0.9147
Off-limit areas at enclosures are clearly indicated.	3,89	0.7588			0.9129
Enclosures are wheelchair accessible.	3,86	0.6005			0.9164
Signage is clear and visible.	3,98	0.7624			0.9127
Signage is well maintained.	3,82	0.7294			0.9123
Warning signs and off limit areas are clear.	3,94	0.8044			0.9097
Signage for toilet facilities are clearly indicated.	3,95	0.5602			0.9170
Assembly points are clearly indicated.	3,76	0.5597			0.9159
Emergency exits are clearly indicated.	3,73	0.5877			0.9164
Signage is safe for visitors	4,03	0.5808			0.9183
There is sufficient signage in the zoo.	3,87	0.6663			0.9135
Factor 2: Safety and Security Protocols.			4.35153	10.62699	0.9220
Information about safety and security measures are provided at the entrance.	3,36	0.8347			0.8927
Contact details in case of emergencies are provided at the entrance.	3,25	0.8726			0.8826

Safety orientation or safety tips are provided at the entrance of the zoo.	3,24	0.8341			0.8867
First aid is readily available at the zoo.	3,29	0.7372			0.9180
Security personnel are visible throughout the zoo.	3,48	0.6921			0.9354
Factor 3: Vehicle and Parking Safety.			4.17718	14.80417	0.8985
Parking is sufficient for the number of visitors.	3,45	0.6733			0.8860
Parking is well allocated at the entrance of the zoo.	3,76	0.7016			0.8838
Vehicles are safe in the parking lot.	3,50	0.7857			0.8659
Security personnel can be seen at the parking lot.	3,78	0.7311			0.8840
Security personnel are trustworthy.	3,55	0.7662			0.8818
Sufficient disabled parking is available near the entrance.	3,53	0.6868			0.8809
Factor 4: Cableway Safety.			3.97674	18.78091	0.9406
The cableway is safe to use.	3,22	0.8864			0.9221
There are personnel present and ensuring safety at the cableway entrance.	3,30	0.8908			0.9120
There are personnel present and ensuring safety at the cableway exit.	3,26	0.8603			0.9249
The cableway is well maintained.	3,18	0.8417			0.9301
Factor 5: Pathway Safety.			3.90992	22.69083	0.8659
The pathways are well maintained (There are no uneven surfaces).	3,70	0.7248			0.8395
Pathways are not slippery (i.e., no water or grease on pathways).	3,79	0.7207			0.8460
There is sufficient signage to enclosures.	3,86	0.5906			0.8550
There is sufficient signage to emergency exits	3,64	0.6330			0.8473
There is no debris on pathways	3,60	0.6958			0.8544
Pathways are wheelchair friendly.	3,97	0.6898			0.8426
Visitors are well protected from hazardous work areas on pathways.	3,88	0.6755			0.8430
Factor 6: Catering and Visitor Service Safety.			3.72950	26.42033	0.8580
The golf carts are safe to use.	3,90	0.7884			0.8239
Personnel inform visitors on correct golf cart usage.	3,82	0.7146			0.8317
The golf carts are well maintained.	3,84	0.7960			0.8025
The shops and kiosks are easily accessible.	4,04	0.7219			0.8374
The shops and kiosks are clean and well maintained.	4,01	0.5907			0.8454
Factor 7: Sanitation and Recreation Service Safety.			3.32617	29.7465	0.8602
Toilet facilities are safe to use.	3,85	0.7770			0.8255
Toilet facilities are well maintained.	3,71	0.7339			0.8202
There are disabled toilet facilities available.	3,68	0.6142			0.8519
The rides for children are safe to use.	3,80	0.6085			0.8228
The rides for children are well maintained.	3,73	0.5889			0.8325

Source: Author's Own Creation.

The results of 2 display seven key factors. Each of the factors presented above, are described individually.

Factor 1: Enclosure and Signage Safety

Twelve (12) items loaded onto Factor 1. These items all relate to the topic of enclosure and signage safety. The items include: Signage at enclosures provide information about the animals (0.5799); signage at enclosures clearly provide information about visitor zoo behaviour (0.7147); off-limit areas at enclosures are clearly indicated (0.7588); enclosures are wheelchair accessible (0.6005); signage is clear and visible (0.7624); signage is well maintained (0.7294); warning signs and off- limit areas are clear (0.8044); signage for toilet facilities are clearly indicated (0.5602); assembly points are clearly indicated (0.5597); emergency exits are clearly indicated (0.5877); signage is safe for visitors (0.5808); and there is sufficient signage in the zoo (0.6663). The results indicate that the scale has good internal consistency, with an alpha of $\alpha=0.92$.

Factor 2: Safety and Security Protocols

The second factor identified from the factor analysis is related to safety and security protocols at the NZG. Five (5) items loaded on this factor. The items include: Information about safety and security measures are provided at the entrance (0.8347); contact details in case of emergencies are provided at the entrance (0.8726); safety orientation or safety tips are provided at the entrance of the zoo (0.8341); first aid is readily available at the zoo (0.7372); and security personnel are visible throughout the zoo (0.6921). The results also indicate that the scale has good internal consistency, with an alpha of $\alpha=0.92$.

Factor 3: Vehicle and Parking Safety

There were six (6) items that loaded on the third factor. These items all relate to the topic of vehicle and parking safety. The items include: Parking is sufficient for the number of visitors (0.6733); parking is well allocated at the entrance of the zoo (0.7016); vehicles are safe in the parking lot (0.7857); security personnel can be seen at the parking lot (0.7311); security personnel are trustworthy (0.7662); and sufficient disabled parking is available near the entrance (0.6868). The results also indicate that the scale has good internal consistency, with an alpha of $\alpha=0.90$.

Factor 4: Cableway Safety

The fourth factor identified is related to the safety of the cableway. This factor loaded four (4) items. The items include: The cableway is safe to use (0.8864); there are personnel present and ensuring safety at the cableway entrance (0.8908); there are personnel present and ensuring safety at the cableway exit (0.8603); and the cableway is well maintained (0.8417). The results also indicate that the scale has good internal consistency, with an alpha of $\alpha=0.94$.

Factor 5: Pathway Safety

Factor five (5) of the factor analysis is related to the safety of the pathways in the NZG. There were seven (7) items that loaded onto Factor five (5). The items include: The pathways are well maintained (There are no uneven surfaces) (0.7248); the pathways are not slippery (i.e., no water or grease on pathways) (0.7207); there is sufficient signage to enclosures (0.5906); there are sufficient signage to emergency exits (0.6330); there is no debris on pathways (0.6958); the pathways are wheelchair friendly (0.6898); and the visitors are well protected from hazardous work areas on pathways (0.6755). The results also indicate that the scale has good internal consistency, with an alpha of $\alpha=0.87$.

Factor 6: Catering and Visitor Services Safety

There were five (5) items which loaded onto Factor 6. These items are related to the safety of the catering and visitor services. The items include: The golf carts are safe to use (0.7884); personnel inform visitors on correct golf cart usage (0.7146); the golf carts are well maintained (0.7960); the shops and kiosks are easily accessible (0.7219); and the shops and kiosks are clean and well maintained (0.5907). The results also indicate that the scale has good internal consistency, with an alpha of $\alpha=0.86$.

Factor 7: Sanitation and Recreation Service Safety

The final factor identified is related to sanitation and recreation service safety. There were five (5) items that loaded onto this factor. These items include: The toilet facilities are safe to use (0.7770); the toilet facilities are well maintained (0.7339); there are disabled toilet facilities available (0.6142); the rides for children are safe to use (0.6085); and the rides for children are well maintained (0.5889). The results indicate that the scale has good internal consistency, with an alpha of $\alpha=0.86$.

5. Conclusion

The research aimed at identifying the respondents' current perceptions of safety and security at the NZG. The results of the factor analysis indicate that seven key factors were addressed in this study namely, enclosure and signage safety, safety and security protocols, vehicle and parking safety, cableway safety, pathway safety, catering and visitor services safety and sanitation and recreation service safety.

The results of the responses towards vehicle and parking safety indicated that respondents were relatively satisfied with the current standards of the vehicle and parking safety at the NZG. There were some respondents who added additional comments regarding vehicle and parking safety at the end of the questionnaire. Respondents stated that the parking at the NZG is of great concern due to it being insufficient to accommodate visitor numbers and due to the worry of cars being broken into or stolen. Respondents also mentioned that the safety outside the NZG is an issue mentioning incidents of theft and drugs at the entrances and parking areas. This is in accordance with the results of the below average means of the factor analysis for the statements of parking being sufficient for the number of visitors (3.45) and vehicles being safe in the parking lot (3.50). These concerns were also alluded to in the study of Mearns and Liebenberg (2018).

The results of the responses towards enclosure and signage safety indicated that respondents were satisfied with the current standards of the enclosure and signage safety at the NZG. However, some respondents added that there were many features at the enclosures that were broken (cracked windows and rusted cages). The respondents also noted that there were many empty enclosures and these could be hazardous to visitors, especially children. With regard to signage safety, respondents noted that the signage is good and provides useful information in case of emergencies. However, some respondents also noted that the signage in the NZG is not visible, poorly maintained and does not accommodate some official languages.

The results of the responses towards sanitation and recreation service safety indicated that respondents were fairly satisfied with the current standards of sanitation and recreation service safety at the NZG. However, respondents had noted issues with sanitation stating that the toilets were not clean and bathrooms do not have soap or sanitisers. No additional comments were made regarding the recreation services safety.

The overall results of the responses towards cableway safety indicate that respondents were not entirely satisfied with the safety and security of the cableway at the NZG. This could be because the cableway was out of order during the data collection period of this study. Respondents made mention that the cableway had been out of order. This is in line with the results of the below average means of the factor analysis for the following statements: The cableway is safe to use (3.22), there are personnel present and ensuring safety at the cableway entrance (3.30), there are personnel present and ensuring safety at the cableway exit (3.26), and the cableway is well maintained (3.18).

The results of the responses towards pathway safety indicate that respondents were satisfied with the pathway safety at the NZG. However, respondents have stated that the pathways at the NZG were uneven, worn out and badly maintained and this could cause accidents.

The results of the responses towards catering and visitor services safety indicate that respondents were relatively satisfied with the standard of catering and visitor services safety at the NZG. However,

respondents had stated that more golf carts should be made available to accommodate the number visitors, and personnel at the golf carts need to improve their services. Respondents were quite satisfied with the kiosks and shops within the NZG, indicating that they are easily accessible and well maintained.

The results of the responses towards safety and security protocols indicate that respondents were not entirely satisfied with the safety and security protocols at the NZG. However, respondents stated that safety and security protocols need to be addressed for all their guests, with the focus being on the NZG needing to provide information about safety and security measures to visitors at the entrance of the NZG. Visitors are not made aware of any information such as contact details (in case of emergencies) or safety orientation or safety tips, which respondents state should be brought to their attention at the entrance of the zoo. This is in accordance with the results of the means of the factor analysis for the statements of information about safety and security measures are provided at the entrance (3.36), contact details in case of emergencies are provided at the entrance (3.25), and safety orientation or safety tips are provided at the entrance of the zoo (3.24).

The implications of the above-mentioned results indicate that the NZG need to address these issues. Firstly, the NZG need to find ways to enhance the visitor experiences. Visitor experiences can be enhanced through better safety and security protocols like providing easier ways for people to contact emergency services (mobile apps) or through better communication of important safety and security information. Secondly, the NZG should improve signage to meet visitors' educational needs. This can be done by installing new and visible signage with current information, to replace damaged, and outdated ones. The third implication is that the NZG needs more visible security around the zoo and at the entrance. Lastly, the NZG needs to improve their infrastructure. Specific references were made to the old, rusted cages and enclosures, parking facilities, damaged pathways, the cableway and toilets. Addressing these issues can improve visitors' perceptions of safety and security at the NZG.

6. Managerial Implications

This study aimed to identify the visitors' current perceptions of safety and security at the NZG to develop a better understanding of the influence of safety and security on visitor perceptions at an urban attraction located in Pretoria. This was done using a quantitative approach to identify the visitor perceptions of safety and security at the NZG. Prior research by SANBI (2019) and Mearns and Liebenberg (2018) have indicated that the NZG is experiencing safety and security issues and this has contributed to lower visitation rates. The findings of this study revealed that most respondents were relatively satisfied with the current standards of safety and security at the NZG, however, more can be done by the NZG to improve the perceptions of safety and security. Some issues noted by respondents, which need to be addressed were related to the general safety and security procedures, namely, information about safety and security measures not provided at the entrance, contact details (in case of emergencies) are not provided at the entrance, safety orientation or safety tips are not provided at the entrance of the zoo, more visible security available throughout the zoo, and improving the zoo infrastructure. By addressing the concerns identified in this study, the NZG can effectively improve visitors' perceptions of safety and security at the NZG. The use of social media and marketing promotional strategies may be used as channels to communicate the improvement made towards the safety and security of visitors in order to influence public perceptions of the NZG and to attract those visitors that were previously hesitant to return and to attract new visitors.

This study was however, faced with certain limitations that need to be acknowledged. It must be noted that firstly, accessing respondents was a major challenge encountered by the researcher, which resulted in a smaller sample size than expected. Many respondents were hesitant to complete surveys due to fear of contracting the COVID-19 virus as the data were collected during the peak of the 2nd wave of the pandemic. Although precautions were taken (masks, social distancing, and sanitisers), many potential respondents were still cautious of completing the survey. Collecting data during the pandemic also limited the collection time. This was also a limiting factor as collecting data over a longer period may obtain more results and insight on the topic of safety and security because data would be collected from a larger portion of the population rather than a group at a single point in time.

Lastly, since the convenience sampling method was used, the results cannot be generalised to the whole population as visitors are subjective and responses may change depending on the consumer. These limitations do, however, encourage future research in this topic. A gap exists in literature regarding the understanding of the influence of safety and security issues on visitor perceptions of urban attractions such as the NZG, therefore, based on the results of this study, further research is needed to gain additional insight into this subject. This should motivate further research on safety and security and the visitor motivations at the NZG. A study using a methodology that provides a deeper and more detailed understanding, for example, a qualitative methodology employing in-depth interviews at the NZG, should be conducted. The reason is because respondents are restricted when completing a survey. Using interviews may elicit issues that were previously not identified by the researcher. A further recommendation can also be made to conduct this type of research from the supply-side. This can assist in bridging the gap between the NZG and the visitor perceptions.

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Risk-Avoidance on the Purchasing Behaviour of Generic Pharmaceutical Brands

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Keywords

Generic pharmaceuticals;
Patent medication;
Consumer behaviour;
Consumer intent to purchase; Financial risk;
Performance risk; and
Social risk.

Abstract

This study aimed to understand the influence of risk avoidance on the purchasing behaviour of generic pharmaceutical brands. By analysing the influence of risk-avoidance, this study demystifies both the factors that restrain customers from and drive customers towards purchasing generic medications. Primary data were obtained quantitatively through the completion of 202 questionnaires that were distributed online. From the collected data, descriptive and inferential statistics were obtained, which were used to describe and explain the relationships between variables. The results indicate a strong positive and significant relationship between the perception of drug quality (denoted by performance risk), financial risk and consumers' intention to purchase generic medication. The results imply that health authorities should focus on providing timely, adequate, and reliable information on the effectiveness and safety of generic medication to dispel patients' concerns regarding issues pertaining to financial losses and health risks when they use generic medication. By identifying the factors that restrain patients from purchasing generic pharmaceuticals and analysing their influence on the purchase intention of generic drugs, it is hoped that the findings of this study will aid producers of generic pharmaceuticals in addressing patients' perceptions and concerns regarding the purchase of such generic drugs.

1. Introduction

In 2017, South Africa's total healthcare expenditure amounted to 414.5bn ZAR (8.4% of GDP), subsequently rising by an average of 7.5% yearly (Industry Insights 2020). The spending on pharmaceuticals alone accounted for 11.1% of the total amount spent on healthcare, equating to 46bn ZAR (0.9% of GDP). Pharmaceuticals have three sub-divisions: patented/branded prescription medication, generic prescription medication, and over-the-counter medications. Of the total amount spent on healthcare, it was estimated that South Africans spend 88.3% to purchase both branded/patented and generic prescription medications. Expenditure on over-the-counter (OTC) medication makes up the remaining 11.7%. Expenses on patented/branded medications were the largest, totalling 52.8% of all pharmaceutical spending in 2017, followed by generic drug spending at 35.5% (Industry Insights, 2020).

The intersection of an increasing demand for healthcare and the rapidly growing healthcare expenditure, coupled with South Africa's ailing economy, means the steady rising medication costs are unsustainable. In this regard, there are burgeoning calls for patients to purchase more generic medication (Godman et al., 2011; Matlala et al., 2020). The primary benefit of generic medication is the associated reduced cost, which is about 20 to 90 per cent cheaper when compared to the equivalent patented/branded drugs (Hassali and Shafie, 2008). Evidence has shown that the bioequivalence of generic medication is equal to its corresponding patented/branded medication in safety, strength, quality, and performance characteristics (Andrade, 2015)

Maciejewski (2012) make the case that despite the cost-effectiveness of generic medication, consumers seem to be sceptical of its quality. Risk regarding purchasing behaviour is the likelihood of

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negative consequences resulting from the purchasing decision taken by the consumer. For example, consumers perceive risk when they do not have adequate information about a product or when they have to make a new purchase decision (i.e. one they have never made before). Maciejewski (2012) further states that consumers' risk experience then evokes a tension state, whereby they fear the loss of money, prestige, time, and health state, amongst others. Consumers then attempt to eliminate this tensioned state via various preventative strategies. Therefore, consumers' perceived risk may have a considerable influence on their purchasing behaviour.

2. Problem Statement

South Africa's latest data shows that 16.4% of the population was covered by a medical scheme (StatsSA, 2019). In the same year in the private sector, approximately R24bn was spent on medicines. Similarly, approximately R12.3bn was spent on drugs in the public sector in the same year (Mamdoo, 2019). 88.3% of this total market spend was for prescription medication (patented/branded and generics), of which generic medications only made up 35.5% of the total market spend (Industry Insights, 2020).

It is argued that by switching to generic medication, savings to a minimum of 20% can be realised (Hassali and Shafie, 2008). Despite this acknowledgement, the transition from patent/branded to generic medication has been agonisingly slow. It is believed that patients' perception of risk regarding generic medications and physicians' hesitancy to prescribe generic medication plays a significant role in this state of affairs (Gauld et al., 2012).

In light of the above, the primary objective for this study was to ascertain the extent to which risk-avoidance influences consumers' behaviour when deciding between generic or originator brand pharmaceuticals.

3. Research Questions

The research questions that guided the study were as follows:

- What risk factors restrain consumers from purchasing generic pharmaceutical prescription medication?
- How does consumer risk influence of purchase intent of generic pharmaceuticals?
- To what extent are consumers involved in the purchase of generic pharmaceutical prescription medication?
- What strategies can be used for effective policy formulation or amendments to ensure consumers can make informed decisions when deciding between original branded and generic medications?

4. Literature Review

Since the 1940s, studies have attempted to determine the guidelines and processes used by consumers when deciding between products that differ in their risk factors (Baratta and Preston, 1948). However, research exploring the specific connection between risk-avoidance and purchasing behaviour is sporadic, even more so in the field of generic pharmaceuticals. Therefore, the three dominant themes that have emanated from the literature are reviewed in this section. The first theme's focal point is the main differences between generic medicines and their patented rivals. The second theme focuses on the influence of risk-avoidance when deciding to purchase generic drugs over patented originals. Lastly, the third theme focuses on the influence of risk-avoidance on consumers' purchasing behaviour.

4.1 Generic pharmaceuticals

The World Health Organisation (WHO, 2008:232) defines a generic medication as "a pharmaceutical product usually intended to be interchangeable with an innovator product that is manufactured without a license from the innovator company and marketed after the expiry date of the patent or other exclusive rights". Thus, a generic medication is identical to patented originator medications regarding

safety, quality, efficacy, dosage form, strength, and route of administration (United States Food and Drug Administration, 2022). On the other hand, patented medications are the originator medications that have been “discovered” and patented by the manufacturer to maximise economic gain for the period in which they are the sole producers of the drug.

4.2 Consumer risk-avoidance

Broman-Fulks et al. (2016) describe risk-taking as the perception of uncertainty surrounding the potential consequences of a purchasing decision. Thus, consumers may be reluctant to sample new products due to the scepticism surrounding the effectiveness of the new product, which is undetermined, especially when compared to established brands (Hofstede et al., 1999). Risk avoidance may further manifest as a selection of definite gains above undetermined gains (Brannon et al., 2012). Understanding consumers’ attitude towards risk is an essential factor in estimating their economic or purchasing behaviour (Dohmen et al., 2011). Therefore, it is fundamental to determine consumers’ perceptions of risk regarding generic pharmaceuticals, as these influence their purchasing behaviour (Abzakh et al., 2013; Maciejewski, 2012).

There are two risk-avoidance types: passive risk-avoidance and active risk-avoidance. Passive risk avoidance is when a consumer avoids risk by choosing an alternative with less perceived risk. In contrast, active risk-avoidance occurs when the consumer intently intervenes via the application of a risk-defusing strategy (Huber et al., 2014).

A risk-defusing strategy is an action taken by the consumer in addition to a pre-existing alternative that is expected to decrease the risk (Huber et al., 2014). For example, a yellow fever vaccination would be a risk-defusing strategy for the alternative of travelling to a country known to carry the risk of yellow fever infection. Therefore, integrating a risk-defusing strategy is a practical way of dealing with a perceived risk. The alternative option is then transformed into a less risky option; therefore, the risk-defusing strategy is a plausible predictor of the consumer’s choice (Huber et al., 2014).

Moreover, if an up-and-coming alternative is presented with an allowable risk-defusing strategy, the alternative will usually be selected (Abdellaoui et al., 2007). Numerous risk-defusing strategies have been identified. These include brand loyalty, product testing, special offers, money-back guarantee, and celebrity endorsements (Yee and Yeung, 2003).

In the generic pharmaceutical industry context, appropriate risk-defusing strategies include quality assurance, decreased price and information regarding product development and origin (Yeung et al., 2010). According to Huber et al. (2014), the difference between active and passive risk-avoidance is that consumers attempt to defuse the risk of an alternative when it has a promising outcome. This implies that applying an appropriate risk-defusing strategy to the marketing efforts of generic drug manufacturers may aid in gaining consumer confidence.

4.3 Purchasing behaviour and generic pharmaceuticals

Generic prescription medications are often viewed as riskier than brand name counterparts (Ganther and Kreling, 2000). As it is illegal to market prescription medication to the public (Pienaar and Visagie, 2019); one may argue that the consumer cannot be highly involved in the purchasing decision process. In addition, prescription drugs’ marketing information and clinical trial results are only allowed to be advertised to healthcare providers (physicians and pharmacists). Therefore, healthcare providers play a significant role in influencing the end-consumer’s decision via information sharing.

Advertising or promotion forms part of the marketing mix with which information is conveyed towards customers, which considerably affects the customer’s images, beliefs, and attitudes towards a particular brand. These beliefs and attitudes, therefore, in turn, affect their purchasing behaviour (Bhola et al., 2013). For example, direct to consumer (DTC) advertising of prescription medication may empower consumers to partake in their healthcare by providing information about available treatment options and safety risks (Ventola, 2011).

Moreover, DTC advertising may encourage over- and inappropriate- use of medications (Stange, 2007). DTC advertising via mass media (television and magazines) of prescription medications is prohibited in South Africa but has been legalised in the United States and New Zealand (Gray et al., 2020; Lee, 2019). The study from Hassali et al. (2009), showed that developed countries' consumers have more readily taken up the use of generic pharmaceuticals as they have increased knowledge and confidence about generic drugs. This was attributed in part to the countries' mass educational efforts. Therefore, the advertising regulatory bodies need to be more prescriptive in their guidelines regarding how the benefits and risks of medications are presented (Parekh and Shrank, 2018) if DTC advertising were to become an option in developing countries such as South Africa.

4.4 Theoretical framework

Several buying behaviour models are used to predict consumer purchasing behaviours (Chen and Antonelli, 2020). One commonly used research model that seeks to predict consumer behaviour is the theory of planned behaviour. The theory of planned behaviour (TPB) was developed by Ajzen (2002) based on the theory of reasoned action (TRA), which was found to have some limitations in dealing with behaviours over which people have incomplete control. Figure 1 depicts the theory in the form of a structural diagram.

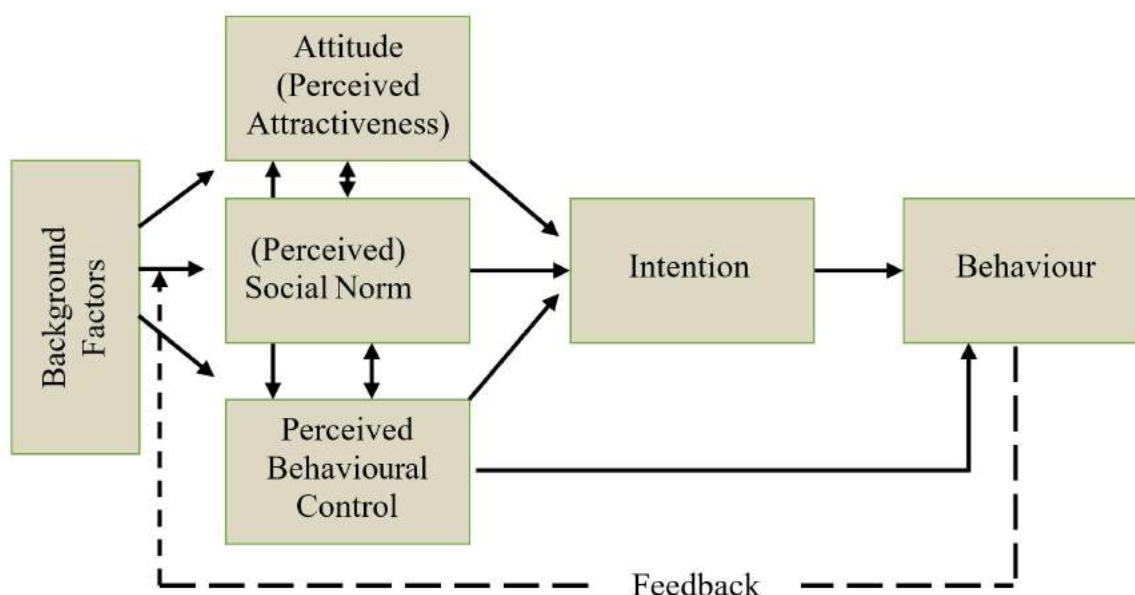


Figure 1: Theory of planned behaviour
Source: Karali (2013:9)

The central assumption of the TPB is that consumers make decisions by weighing different courses of action; that is, calculating the costs and benefits and then choosing the option that provides maximum expected benefits (Karali, 2013).

The model, therefore, belongs to the group of rational choice models. Although the model is familiar and widely used, it has been criticised mainly because human behaviour is highly complex and consists of moral, social, and altruistic behaviour (Abdulkadir et al., 2013). More often, behaviour is entrenched in social and collective decision-making contexts and other contextual factors. Despite the criticism, the TPB is a valuable model for this study. It offers insights into some important factors that can play a role in determining the purchasing behaviour of generic pharmaceuticals.

Karaatli (2015) advocates using the purchasing involvement scale as a helpful construct to better understand and predict purchasing behaviour. According to Laaksonen (1994), consumer involvement may hold important keys to developing marketing plans for products. Purchasing involvement is

described by Mittal (1989:148) as the “extent of interest and concern that a consumer brings to bear on a purchase decision task”. Mittal (1989) developed a purchase-decision involvement scale based on two empirical studies. This study adopts Mittal’s (1989) scale for measuring the respondents’ purchase involvement during the acquisition of medication.

4.5 Conceptual framework

Figure 2 shows that the risks consumers consider in making purchase decisions for generic pharmaceuticals include financial, performance, physical, and social risks. Financial risk refers to the risk of losing money when the product does not perform according to expectations, while performance risk is the risk that the product may not be safe or may result in physical harm (Roselius, 1972; Stone and Grønhaug, 1993). Performance risk is also the risk that a product may fail to perform according to expectations, while social risk refers to the risk that the product may result in others thinking less of the individual or in ego loss (Roselius, 1972; Stone and Grønhaug, 1993). Figure 2 also presents the conceptual framework that brings together the constructs that will be tested in this study.

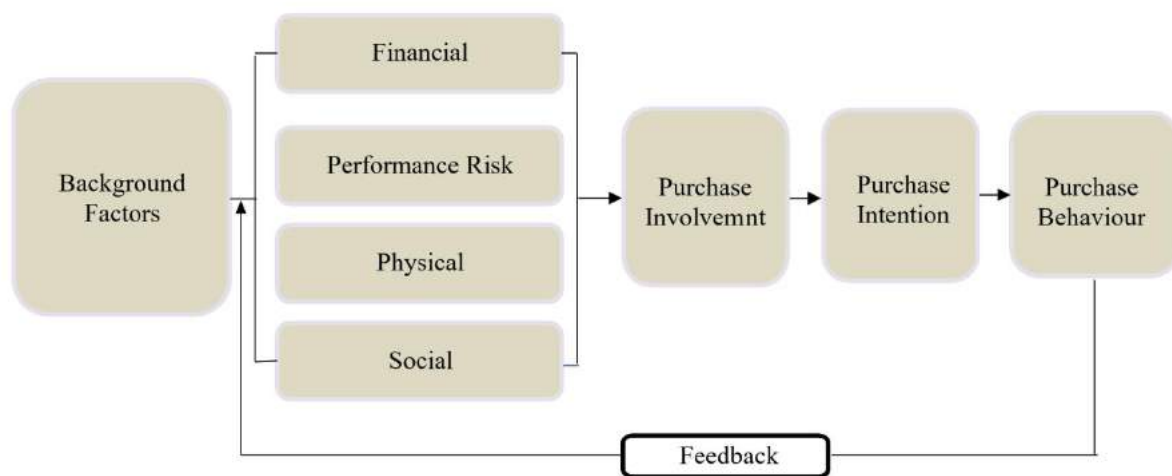


Figure 2: Conceptual Framework
Source: Own compilation

- Financial risk:** Financial risk, which is also referred to as economic risk, is the potential of incurring financial losses as a result of purchasing a product (Abzakh et al., 2013). In other words, financial risk focuses on consumers’ concerns about sustaining a possible financial loss if the generic drug does not perform as expected. Thus, financial risk plays a vital role in consumer decision-making. Reichheld and Schefter (2000) believed that although price is an indicator of financial risk, greater consideration needs to be given to the nexus between price and other service and relational factors. Therefore, to measure financial risk in this study, the extent to which the cost of generic pharmaceuticals and the fear of financial loss due to non-performance influences purchase decisions will be explored.
- Performance risk:** Performance risk is defined as the concern that the product might not perform according to the consumer’s expectations and will therefore not deliver the perceived benefits (Abzakh et al., 2013). Consumers assess service quality positively when their expectations of service are exceeded by their perceptions of the service that has been delivered. Therefore, the perceptions of the quality of generic pharmaceutical medication and its perceived effectiveness in treating chronic illnesses will be used in this study to measure performance risk.
- Physical risk:** Physical risk is defined as the potential of the products or services to have damaging or harmful effects on the health of individuals (Abzakh et al., 2013). To measure

physical risk in this study, factors such as perceptions of safety and the occurrence of side effects will be considered.

- **Social risk:** Social risk refers to the possible damage of status in an individual's social group due to purchasing or using a particular product or service (Abzakh et al. 2013, 43). Such groups include reference groups or peers. To measure social risk in this study, the extent to which family, healthcare practitioners, friends, and pharmacists influence consumers' choice of generic pharmaceuticals.
- **Other factors:** Consumers' knowledge of generic pharmaceuticals was cited by Guttier et al. (2017) as one factor influencing the choice between generic and branded pharmaceuticals. Guttier et al. (2017) also observed specific knowledge regarding price, quality, and packaging characteristics and concluded that there is a higher preference for purchasing generic drugs with a better understanding of generic drugs. To measure consumers' knowledge of generic pharmaceuticals in this study, awareness of the price and quality of generic drugs will be established.

5. Research Method

The study aimed to assess the influence of risk-avoidance on the purchasing behaviour of generic pharmaceutical prescription medication brands. By measuring the influence of risk-avoidance, insights were gained into factors that restrain customers from or drive customers towards purchasing generic prescription medications. This study was conducted in Gauteng. The data was collected from a prominent medical practice database. Selected patients were emailed a link to the questionnaire without any discrimination based on gender or race. Selected patients were over the age of 18. The suggested sample size was 200. The researchers collected 564 questionnaires, 362 of which were incomplete and thus excluded from the results. The results were therefore based on 202 completed questionnaires. The choice of Gauteng province was motivated by the fact that Gauteng was the province that recorded the second-largest expenditure on medications after KwaZulu-Natal. Gauteng had an approximate population size of 13.5 million and approximately 810 000 – 1 215 000 people in Gauteng use prescription medication for chronic illness. (Mamdoo, 2019).

In 2017, 88.3% of the total market spend was for prescription medication, of which generic medicines only made up 35.5% (Industry Insights, 2020) for illnesses that generic medications could treat with the same effectiveness (United States Food and Drug Administration, 2022). With the rising cost of healthcare in Gauteng and other parts of the country and a pressurised healthcare system due to the pandemic, finding avenues to save money is deemed crucial. Therefore, switching from patent/branded to generic medication is perceived as a channel that could help save money and curb unsustainable healthcare costs in South Africa (Erasmus and Kean, 2018).

5.1 Sampling

Purposive sampling was chosen as the most appropriate technique for this study. Purposive sampling enabled the researchers to identify participants who meet specific criteria to participate in the study. A criterion to partake in this study is that participants need to use prescription medications to treat/manage a chronic condition for a minimum of six months, as chronic prescriptions are renewed only once every six months. Additionally, only consumers purchasing medication from private pharmacies were selected, as the selection of medication stocked in public sector pharmacies is determined by the standard treatment guidelines and essential medicines list as set out by the ministerially appointed NEMLC (National Essential Medicines List Committee) (Matlala et al., 2020). This implies that consumers frequenting public sector pharmacies do not determine the choice of medication between generic and original brands; therefore, risk-avoidance will not play a role in their selection process.

This study adopted a quantitative, correlation approach to adequately address the problem statement. Given the objective to ascertain the extent to which risk-avoidance influences consumers' purchasing behaviour when deciding between generic or originator brand pharmaceuticals, determining the correlation between the variables is well-suited. This allowed the researchers to determine to what

degree risk-avoidance influences the purchaser's decision when deciding between generic and branded medications.

5.2 Research instrument

The questionnaire contains constructs to measure risk-taking behaviour and types of experienced risk, purchase intention and factors that influence purchase intention, and knowledge surrounding generic medications. The measure of risk was modified after Betz et al. (2002) conceptualisation of the risk-taking behaviour scale (RTBS). The modified RTBS was thus judged to be a suitable scale to measure a degree of risk-avoidance regarding generic pharmaceuticals, as it can be applied to the health and safety field.

Further questions were adapted from the purchasing involvement scale to investigate respondents' decision-making and purchasing behaviour (Mittal, 1989). Finally, further constructs in the questionnaire were adapted from various studies that sought to determine the attitude and behaviour of consumers towards the purchase and use of generic medicines and the types of perceived risks experienced. The constructs are summarised in Table 1 below.

Table 1: Constructs of the Study

Construct	Source
Purchase involvement	Mittal 1989
Purchase intent	Ajzen 2002
Purchase behaviour	Ajzen 2002
Knowledge of generic pharmaceuticals	Guttier et al. 2017
Social risk/influence of generic pharmaceuticals	Abzakh et al. 2013
Financial risk/Cost of generic pharmaceuticals	Abzakh et al. 2013
Performance risk/Quality of generic pharmaceuticals	Abzakh et al. 2013
Physical risk/Safety of generic pharmaceuticals	Abzakh et al. 2013

Source: Own compilation

5.3 Data collection and analysis

Data for this research was collected via an online questionnaire. After ethical clearance was obtained the link to the questionnaire was shared via email with the target audience. The questionnaire consisted of closed-ended questions from which the data was collected and analysed. In this study, descriptive statistics are utilised, such as central tendency measures and variability in quantitative data analysis. Inferential statistics were then used to determine whether there is a correlation between the dependant variable (use of generic or branded medication) and the independent variables (risk-avoidance, purchasing involvement, physician's influence).

Reliability analysis was conducted by calculating Cronbach alpha coefficients for each of the constructs. Analysis of variance (ANOVA) was done to test for mean differences between the three medication groups. Normal probability plots were inspected for normality and were judged acceptable. Levene's test was used to test for homogeneity of variance, and in cases where it was significant, the Welch test was done. The Welch test results were in all cases similar to the original F- test results, and therefore only the F-test results were reported. For post hoc testing, the Fisher least significant difference (LSD) test was used. A principal components analysis (PCA) biplot was used as a summary graphical representation of the ANOVA results.

5.4 Validity and Reliability

This study's reliability was enhanced via the provision of clear guidelines for completing the questionnaire. Furthermore, the reliability was then checked via consistency reliability estimates as Likert-scale items were involved. Finally, the reliability of this study was strengthened through appropriate meticulous sampling. The validity of this study was enhanced by ensuring that the questionnaire was easy to use with clear instructions. Additionally, the aim of the research was clearly

described before participants were asked to participate. To attain credibility, purposive sampling was used. This ensured that the participants in the sample selection could provide valuable data.

A pilot study aided the researchers in correcting any identified errors in the questionnaire design before fieldwork was conducted. Thus, pre-tests were administered to a sample of 16 participants before fieldwork was started. Nil errors were identified, and the instructions for the questionnaire were found to be precise. The 16 participants were not part of the sample for the final study.

6. Results

This research was conducted with the primary objective of ascertaining the extent to which risk-avoidance influences consumers' behaviour when deciding between generic or originator brand pharmaceuticals. In this section, a detailed discussion of the findings from quantitative data collection and analysis is provided. The target population represented in this survey were selected from the researcher's database of patients who frequent her general practice. All chosen participants reside in Gauteng were above the age of 18 and users of chronic medication for a minimum period of 6 months. This implies that they frequent a private pharmacy at least once a month.

The selected population were emailed the link to the questionnaire with no discrimination on gender or race. Demographic details were not collected to ensure the responses remained anonymous without any identifying data, enabling the researchers to trace results back to a specific respondent. The Cronbach's alpha coefficient was used to measure the internal validity of the survey questionnaire.

The results for each of the variables are presented in Table 2. According to George and Mallery (2003), Cronbach's alpha coefficients greater than 0.70 are considered acceptable, while those below 0.5 are regarded as unacceptable. Table 2 shows that the two variables that had reliability estimated above 70% are purchase involvement and quality of generic medication. However, none of the variables had an unacceptable reliability estimate as they were all above 0.70.

Table 2: Summarised Scales of Cronbach's Alpha

Summed scales	Cronbach's alpha
Purchase involvement	0.73
Knowledge of generics	0.84
Safety of generics	0.79
Quality of generics	0.84
Cost of generics	0.71
Social influence	0.79

6.1 Descriptive statistics

The respondents were asked to indicate the types of medication that they purchase, with three options to select from: generic only, branded medication only, or both generic and branded medication. The results are summarised in Table 3.

Table 3: Types of Medication Purchased

Type of medication	Number of respondents
Generic medication only	10 (5%)
Branded medication only	22 (11%)
Both generic and branded medication	170 (84%)

The results in Table 3 show that only 5% of the respondents purchase generic medication only while 11% purchase branded medication only. Thus, the majority (84%) of respondents purchase both generic and branded medication.

The respondents were further asked to indicate how often they purchase generic medication. As shown in Table 4, 8% of the respondents said they never choose generic medication, while 38% said

they sometimes choose. In addition, 4% were not sure while 39% ticked several times. The remaining 11% of the respondents indicated that they always select generic medication.

From this analysis, the highest number of respondents indicated that they always choose generic medication. Regarding how often they choose branded medication, 4% of the respondents indicated that they choose branded medication, 47% sometimes choose it, and 4% were not sure. In addition, 33% indicated that they choose branded medication several times while 12% always choose branded medication. Thus, the results show that the most significant number of respondents sometimes choose branded medication.

Table 4: Frequency of Purchase of Generic and Branded Medication

	Never	Sometimes	Not sure	Several times	Always
How often do you choose generic medication?	16 (8%)	76 (38%)	9 (4%)	78 (39%)	23 (11%)
How often do you choose branded medication?	9 (4%)	95 (47%)	8 (4%)	66 (33%)	24 (12%)

Furthermore, the respondents were asked to indicate whether they would consider purchasing generic pharmaceuticals the next time they buy medication. The responses are summarised in Table 5. Regarding whether they would consider purchasing generic medication next time, the most significant number of respondents (43%) indicated a yes, followed by 24% who said they would definitely buy and 23% who said they would sometimes buy. Of the remaining 10%, 5% were unsure, and 5% would never consider purchasing generic pharmaceuticals.

Table 5: Will Consider Generic Pharmaceuticals

	Never	Sometimes	Not sure	Yes	Definitely
I will consider purchasing generic pharmaceuticals next time I buy medication	10 (5%)	46 (23%)	10 (5%)	87 (43%)	49 (24%)

As shown in Table 6, the variable purchase involvement had a mean of 3.74, a median of 3.83, and a standard deviation of 0.6504, with minimum and maximum values of 1.7 and 5, respectively. This shows a positive perception of the extent to which purchase involvement plays a role in influencing the purchase of generic medication. The rest of the variables have mean scores above average, implying that most participants agreed with the statements relating to the variables. The knowledge of generic medication variable had the highest mean score. The standard deviation figures for all the variables were less than one, meaning that the individual responses rarely deviated from the mean.

Table 6: Descriptive statistics of study variables

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
Purchase involvement	3.74	3.83	0.6504	1.7	5
Knowledge of generic medication	3.78	3.68	0.6354	2	5
Safety of generic medication	3.67	3.5	0.7593	1	5
Quality of generic medication	3.51	3.75	0.862	1	5
Cost of generic medication	3.58	4.0	0.9763	1	5
Social influence	2.73	2.75	0.7535	1	5

6.2 Inferential statistics

To establish the relationships between the study variables, analysis of variance (ANOVA) and Pearson correlation tests were conducted. ANOVA was conducted (see Table 7) to establish any significant differences between the means of the types of medication.

Table 7: ANOVA Results

Variable	Mean and Standard Deviation – Generic medication only	Mean and Standard Deviation – Branded Medication only	Mean and Standard Deviation – Both generic and branded medication	ANOVA Result
Purchase involvement	3.85 (0.64)	3.98 (0.85)	3.7 (0.62)	F(2, 199) = 4.9450, p=0.15
Knowledge of generic medication	4 (1.07)	3.24 (0.55)	3.83 (0.58)	F(2, 199) = 9.8814, p<0.01
Safety of generic medication	3.95 (0.8)	3.05 (0.95)	3.75 (0.68)	F(2, 199) = 9.7691, p<0.01
Quality of generic medication	3.5 (1.12)	2.68 (0.83)	3.62 (0.79)	F(2, 199) = 12.924, p<0.01
Cost of generic medication	4.05 (1.04)	2.45 (0.97)	3.7 (0.87)	F(2, 199) = 20.436, p<0.01
Social influence	2.75 (1.32)	2.61 (1.13)	2.75 (0.69)	F(2, 199) = .28886, p<0.75

As shown in Table 7, there is no significant difference between the mean for generic medication only, branded medication only, and both generic and branded medicines in respect of the purchase involvement variable ($F(2, 199) = 1.9450, p = 0.15$). This shows that the purchase involvement for the three types of medication is not significantly different. Likewise, for the variable social influence, there is no significant difference between the means for the three types of medication ($F(2, 199) = .28886, p < 0.75$). However, there is a significant difference between the means for the three types of medication for the rest of the variables. This shows that participants' perceptions of each variable significantly differ according to the type of medication. The relationships between the different variables and the purchase of generic medication are shown in the biplot in Figure 3.

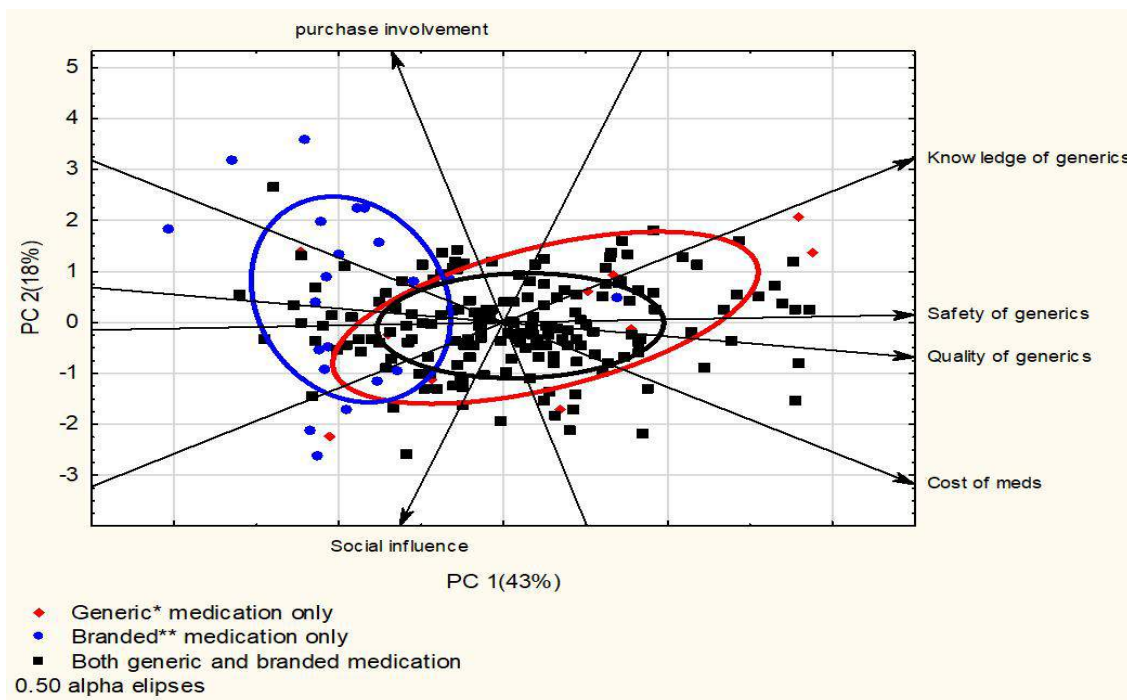


Figure 3: Biplot Results

The points in the biplot indicate that the highest preference is for both generic and branded medication, as these points are the ones that are close together. The points for branded medication only and

generic medication only are far away from each other, indicating that there is a small number of consumers who prefer generic medication only and branded medication only. These results are in line with the frequency results, which show that most (84%) participants indicated that they would purchase both generic and branded medication. The vectors in the biplot show that the knowledge of generic medication, the safety of generic medication, quality of generic medication, and cost of generic medication have a similar influence on the intention of consumers to purchase generic medication.

A correlation analysis was conducted to establish the influence of the different consumer risk factors on the purchasing behaviour of generic pharmaceutical brands. The Pearson correlation coefficient of the measured variables was used. The Pearson correlation test measures the strength, direction, and significance of a relationship between variables. The results for the Pearson correlation test are summarised in Table 8.

Table 8: Pearson Correlation Test Result

Variable 1	Variable 2	Pearson correlation coefficient	Pearson p-value
Purchase involvement	Purchase intention of generic medication	-0.21	<0.01
Knowledge of generic medication	Purchase intention of generic medication	0.49	<0.01
Safety of generic medication	Purchase intention of generic medication	0.48	<0.01
Quality of generic medication	Purchase intention of generic medication	0.58	<0.01
Cost of medication	Purchase intention of generic medication	0.56	<0.01
Social influence	Purchase intention of generic medication	-0.03	0.71

The results in Table 8 show the following relationships:

- First, there is a significant weak negative relationship between purchase involvement and purchase intent for generic medication ($r(202) = -0.21, p < 0.01$).
- There is a moderate positive relationship between knowledge of generics and purchase intent for generic medication. The relationship is significant ($r(202) = 0.49, p < 0.01$).
- There is a significant moderate positive relationship between the safety of the generic medication and purchase intention for the generic medication ($r(202) = 0.48, p < 0.01$).
- There is a significant, strong positive relationship between the quality of generic medication and purchase intention for the generic medication ($r(202) = 0.58, p < 0.01$).
- There is a significant strong positive relationship between the cost of generic medication and purchase intention for generic medication ($r(202) = 0.56, p < 0.01$).
- There is a very weak negative relationship between social influence and purchase intention for generic medication. The relationship is not significant ($r(202) = -0.03, p = 0.71$).

7. Discussion of Findings

Despite evidence that consumers can save a minimum of 20% of what they spend on medication by switching from branded to generic pharmaceuticals, the transition from patent/branded to generic medication has been agonisingly slow (Hassali and Shafie, 2008). With the rising healthcare costs in Gauteng and other parts of South Africa and a pressurised healthcare system due to the Covid-19 pandemic, finding avenues to save money is deemed crucial.

In this regard, this study aimed at ascertaining the extent to which risk-avoidance influences consumers' behaviour when deciding between generic or originator brand pharmaceuticals. These

risks include financial, performance, physical and social risks. Thus, by identifying the type(s) of risk experienced by consumers when deciding between the purchase of a generic or patented/branded medication, misconceptions about generic medicines may be identified and adequately addressed.

The study results identify two risk factors that have a strong, positive, and significant influence on the intention of consumers to purchase generic medication: financial risk (cost of generic drugs) and performance risk (quality of generic medication). According to Abzakh (2013), financial risk focuses on consumers' concerns about sustaining a possible financial loss if the generic drug does not perform as expected. In contrast to the findings of this study, Abzakh et al. (2013) found that there was no significant relationship between financial risk and consumer resistance towards generic medication. Concerning performance risk, Abzakh et al. (2013), however, found that there is no significant relationship between performance risk and consumer resistance towards the purchase of generic medication.

Physical risk (safety) significantly and positively influenced the intention to purchase generic medication. When consumers have doubts regarding the standards of generic drugs, they often resist purchasing and consuming them. Abzakh et al. (2013) found a significant positive relationship between physical risk and consumer resistance towards generic medication. Nardi et al. (2015) cited medication safety as an essential factor in purchasing generic medicines.

The results also revealed a moderate positive relationship between knowledge of generic drugs medication and the intention to purchase such medication. This means that the knowledge concerning the medication, efficacy and prices of generic pharmaceuticals are likely to influence the purchasing decisions of such pharmaceuticals. For example, a study conducted by Guttier et al. (2017) found knowledge of generic medication to be a significant predictor of the intention to purchase generic medication. The observations in the aforementioned study included knowledge regarding the packaging's quality, price, or characteristics. The study concluded that those with a better understanding of generic medication had a higher preference to purchase them. Contrary to the findings by Guttier et al. (2017), Keenum et al. (2012) found that although the majority of their study participants possessed adequate knowledge about generic medications, only a minority expressed a preference for generic over branded medications. The authors (Keenum et al., 2012) attributed this to possible prior negative experiences with such medications.

With social risk, the relationship was weak, negative, and insignificant. Thus, social influence is not regarded in this study as a significant predictor of consumers' intention to purchase generic medication. This is consistent with the findings of Abzakh et al. (2013), who found no meaningful relationship between social influence and consumer resistance to purchasing generic medication.

Managerial Implication

The literature on risk-avoidance suggests that despite evidence indicating that by switching from branded to generic medicines, consumers can save a minimum of 20% of what they spend on medication, the transition from patent/branded to generic medication has been agonisingly slow. Therefore, this study identified some risk factors that impact the intention of consumers to purchase generic medications. The situation calls for managerial action to develop strategies for improving the adoption of generic medications among patients and reducing their expenditure on medication (Arcaro et al., 2021). Furthermore, the current negative perceptions surrounding the quality, safety and effectiveness of generic medication need to be dealt with to ensure that patients embrace such medicines with confidence, thereby reducing their expenditure on medication.

There is a need for health authorities to promote generic medications through educational enlightenment programs and campaigns in pharmacies, clinics, hospitals, and mass media such as television and radio programmes. Such educational interventions should encompass all aspects of generic medications, namely bioequivalence, effectiveness, safety, equivalence with branded medication in terms of quality and availability.

In addition, generic pharmaceutical companies should educate doctors and pharmacists on the benefits of their products, paying enormous attention to their safety, effectiveness and associated cost savings. This is primarily because doctors and pharmacists may be instrumental in promoting the adoption and use of generic medications as they have direct contact with patients. They can increase patients' knowledge of generic medications through their positions.

Limitations and Recommendations for Future Research

The major limitation of this study is that it only focused on the research problem from the consumers' point of view. The prominent people behind the prescription of medication are doctors and pharmacists; thus, they play an essential role in the decision-making process. Therefore, their prescription behaviour, level of understanding, and views are crucial to holistically understanding the issue under inquiry. Thus, it is recommended that future studies include physicians and pharmacists. Another limitation of this study is the geographical coverage. The research participants resided in the Gauteng Province only, and the population consisted of people on medication for chronic illnesses and information was obtained from the researchers' database. In this regard, future studies should include more provinces and extend the people to include other patients with different types of diseases.

Conclusion

The study's results indicate a strong positive and significant relationship between performance risk (denoted by quality) and financial risk and consumers' intention to purchase generic medication. For the other variables, such as knowledge of generic medicines, physical risk showed a moderated, positive and significant relationship with consumers' intent to purchase generic drugs. The remaining two variables purchase involvement and social risk – showed a weak, negative, and insignificant relationship with consumers' intention to purchase generic pharmaceuticals. The results imply that health authorities should focus on providing adequate and authentic information on the effectiveness and safety of generic medication to dispel their fears of financial losses and health risks when they use generic medication. Therefore, consumer education on generic medication may be crucial to influence consumers' intentions to purchase generic pharmaceuticals.

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Exploring Marketing Communication Alternatives For Ministries In The Reformed Churches

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Keywords

Religion, church marketing, marketing segment, differentiation, digitalisation, sister churches, marketing strategy, community.

Abstract

Religious marketing is foreign to the tradition of the reformed churches. This research explored the importance of a marketing strategy, especially with the decline in membership numbers over the last ± 20 years. The marketing industry would call this a loss of market share in a specific market segment.

The problem described above gave rise to the following main research question:

What marketing strategy can be developed to help the reformed sister churches and, more specifically in this research, the Nederduitsch Hervormde Kerk van Afrika (NHKA), recover their market share by effectively and efficiently marketing their ministries?

Since they enjoyed state protection, the three sister churches in South Africa had a growth phase from 1843 until 1992. During this period, the three Afrikaans sister churches had the privilege of having national media exposure. The current situation has changed significantly and Churches that follow a prosperity theology, such as the Christian Revival Church (CRC), have cut into the target market of the reformed churches.

The most prominent themes that emerged from the empirical data were: -

- no marketing strategy for the three Afrikaans sister churches,
- the restrictions that Covid-19 brought mean that the new normal is digitalisation,
- an inside-out communication strategy, and
- the importance of marketing strategy.

1 Introduction

Since 1998, the membership numbers of the three Afrikaans sister churches – *Nederduitsch Hervormde Kerk van Afrika* (NHKA); – *Nederduitsch Gereformeerde Kerk* (NGK) and the– *Gereformeerde Kerke in Suid-Afrika* (GKSA) has been showing a steady decline. The NHKA grew to 170 011 members by 1998, spread over 311 congregations. From 1998 to 2019 (21 years), the NHKA decreased by 89 639 members (Dreyer *et al.*, 2020). The NGK decreased by more than one million members between 2003 and 2019 (Oosthuizen, 2019) and the GKSA by 25 657 members between 1998 and 2018(GKSA, 2018). Some of the declines in the membership numbers of the three Afrikaans sister churches can be attributed to the negative birth rate and emigration trends in the white Afrikaans-speaking communities (Van Staden, 2009).

In contrast with the three Afrikaans sister churches, communities that promote prosperity theology, such as the Christian Revival Church (CRC), founded in 1994, grew from 183 members to more than 70 000 members by 2020 (Boshoff & Boshoff, 2020). In the northern suburbs of Pretoria, 66 home churches and other Christian denominations were established between 2010 and 2018 (Scholtz, 2018).

The three Afrikaans sister churches have fallen into a comfort zone. In business terms, the decrease in members and the rise of other Christian denominations means that the three Afrikaans sisters

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Churches have lost market share. The research focused on a marketing strategy that can be implemented to regain market share. The marketing strategy and target market have to keep track of the millennials' and the upcoming Z generation's questions and needs. The research focused on the youth because of the growth potential.

One study has shown that the negative birth rate and emigration trends in the Afrikaans population group could be a reason for the decrease (NHKA (Nederduitsch Hervormde Kerk van Afrika), 2019).

2 Problem Investigated

Marketing is a sensitive issue in the church environment because God's Word is often considered not marketable. However, the message of the Word and the operational part of a church's ministries are, in fact, marketable (McSpadden, 2014:48). The goal is to set up a marketing strategy to gain access and recover a portion of the market share available to the three Afrikaans reformed churches. Michael Porter's five forces evaluate a business organisation's competitive strength and position (Walker & Mullins, 2014:99). According to this model, the three Afrikaans reformed churches have lost market share.

The primary purpose of the NHKA is the *Missio Dei* (missional ministry) and the *passio Dei* (compassion ministry) (Louw, 2016:336-354). As such, the primary message of the Gospel is marketable through churches' ministries and their members as living witnesses. The NHKA's mission statement names (i) community, (ii) celebration, (iii) service and (iv) witnessing as the four pillars of the primary purpose. The mission statement forces the church to self-examine so they can be living witnesses with a global, marketable mission statement (Jordaan, 2007).

The available literature and statistics show that the reformed churches do not market themselves effectively and efficiently to increase their market share. According to Statistics South Africa, the white population of South Africa (the market segment of the reformed churches) has grown by 2% from 2011 to 2020 (Stats SA, 2020). Most members of the NHKA belong to this group. If the national figures indicate growth in the ethnic group's population, we must ask why the membership numbers of the NHKA have been showing a decline?

One of the questions is why people are joining the emerging religious groups rather than the established churches. Are the sister churches losing market share in a small but ever-diversifying market segment?

The problem statement commutes the following: "Despite relative population growth in South Africa, the Afrikaans sister churches continue to experience a downward trend in their membership numbers year on year."

3 Research Objectives

The three Afrikaans sister churches have the same dilemma. They are losing members each year, even though there is population growth. The question is, what can be done to stop the decline? This broad question can be investigated by addressing the following questions below.

The **research question** this study intended to answer was:

What marketing strategy can be developed to help the NHKA recover market share by effectively and efficiently marketing their ministries?

Based on this, the objectives have been formulated as follows:

Primary objective

- This study aims to identify marketing guidelines to help the NHKA effectively and efficiently market its operational ministries.

Secondary objectives

- To gain insight into the current marketing strategy of the NHKA.

- To conduct a literature study of related sciences to understand the current situation and the cultural differences between the age groups in the NHKA.
- To determine the marketing tools that can support the NHKA's objectives so that the church can effectively and efficiently market its operational ministries.
- To propose a marketing guide to the NHKA that can help the church effectively and efficiently market its operational ministries.

4 Literature Review

Over time, all churches worldwide change and develop with the times. The global historical events ultimately played into the establishment of the NHKA in South Africa and the development of the denomination after its birth. This is followed by an evaluation of the recent trends in the denomination to highlight the importance of a fruitful marketing strategy for the NHKA.

The historical development of the reformed churches in South Africa follows significant historical shifts in the early churches over a period. These shifts influenced the culture of the reformed churches and, with that, the current understanding of marketing within the context of the church environment.

4.1 The period 500–1555 AC

In 313 AC, the Edict of Milan established religious tolerance of Christianity under Emperor Constantine of Rome (Dreyer, 2016:2). As a result, the Christian civilisation in Europe developed rapidly from 500 to 1500 AC. This period is also known as the Middle Ages. During this period, Rome lost its power over western Europe to Germanic tribes (Van Wyk, 2019: 203). However, three offices still greatly dictated the developments within the early church (Pont, 1978:77):

- Monks – Benedictus established the monks in Europe, and monasteries gradually became influential.
- The Pope – The Pope fulfilled a spiritual and political leadership role.
- Civil authority (the Emperor). There was a close relationship between the Emperor and the Pope since the Pope crowned the emperor. In effect, the Emperor was subordinate to the Pope

With this, the culture of remorse and indulgence developed, which Luther later wrestled with. The goal of indulgence was for an individual believer to buy their freedom from any sins. The first form of indulgence was ordained in 1035 to finance the building of the Pieters Church (Van Wyk, 2019:60). On 31 October 1517, Martin Luther nailed 95 statements to a church door in Wittenburg. These 95 statements argued against the abuse of indulgence and started the Reformation (Van Wyk, 2017:187-188).

On 10 December 1520, Luther openly burned the papal proclamation condemning him as a heretic and the canonical law books of the Roman Catholic Church. With this action, Luther rejected the pope and the Roman Catholic Church, and he no longer recognised the Roman Catholic Church as a church (Van Wyk, 2019:119). In 1530, Philippus Melancton, an associate of Luther, submitted a confession of faith to Emperor Charles V, who rejected it. In the period leading up to 1555, there was much opposition and violence against the protestants. In 1555, the Reformation was embraced in what is now Germany. Although Luther died in 1546, he witnessed this expansion (Pont, 1978:130-131).

4.2 The period 1555–1652

After Luther, Calvin became the centre of the Reformation. One of Calvin's seminal works is the Catechism of Geneva, which later served as the basis for the Heidelberg Catechism. Calvin saw the church as a community of believers with Jesus Christ as its head. Therefore, the church is not an institution of people but a gift of God to the people. Calvin established the presbyterial order of the church (Dreyer, 2016:115). Since the Holy Spirit is also in the word of God and involved in the sacraments of a congregation, that means the church is *ecclesia complete* (Dreyer, 2016:115). The

structure of the presbyterial order, which is mirrored in the three sister churches today, is ruled by meetings of the office-bearers. These office bearers are referred to as (Dreyer, 2016:95):

- Ministers: They preach and study the Word of God.
- Elders: Those who govern the church and congregation.
- Deacons: They collect tithes and take care of the poor.

These office bearers do not rule alone but as meetings. These include:

- The church council meeting
- Class meeting or circuit meeting
- Synod or general church assembly

Despite many wars between the Roman Catholic Church and the Reformation of the Protestants in the time period 1547 – 1648, Fredrich III (1515–1576) welcomed Calvinists in Germany. Under his governance, the first Heidelberg Catechism was published in February 1563 (Van Wyk, 2017:156). Despite the wars, Protestantism spread to Germany, France, England, Scotland, the Netherlands, and later South Africa, often with much bloodshed.

4.3 Protestantism in South Africa 1652–1806

Jan van Riebeeck, a protestant, brought the reformed tradition to South Africa in 1652. This means that the reformed churches in South Africa grew from the Dutch protestants (Van der Merwe, 2014:113). As the refreshment station grew and a colony was established, the need for spiritual care grew. At first, a comforter for the sick was appointed, which later expanded. Reverend Johannes van Arckel became the first minister in the Cape colony. While the Cape had been in the hands of England (1795 – 1803), the Dutch developed a distinction between the role of the state and the role of the church (Pont, 1978:229-234).

The acceptance of the Church Order written by General JA de Mist in 1804 opened the door to other religious groups and other Christian traditions in the Cape. At this point, the Roman Catholic Church and Islam entered the religious scene (Van der Merwe, 2014:119-121).

4.3.1 The development of the three sister churches in South Africa

In 1816, the General Church Assembly accepted a church law that established independence from the churches in the Netherlands. The title of the church law was “*Algemene Reglement voor het Bestuur der Nederduitsche Hervormde Kerk in Zuid-Afrika*” (Pont, 1978:236). With the acceptance of the new church law in 1842, the name of the church in the Cape colony changed to “*Nederduitsch Gereformeerde Kerk van Zuid-Afrika*.” The term “*Hervormd*” and “*Gereformeerd*” both carry the meaning of “reformed” in English (Strauss, 2019:368).

On 8 November 1843, Ordinance 7 was accepted by the Legislative Council of the Cape with the heading “*The Separation of Church and State Petition*” it became state law, specifically in the Cape colony (Coertzen, 2016:199). Ordinance 7 of 1843 was recognised up to 1996 when the new Constitution of South Africa was accepted (Coertzen, 2016:2).

With the strong influence of England and the fact that church laws and state laws were enmeshed, the anglicisation of the Cape colony was inevitable. This anglicisation meant that the churches in the Cape colony lost some of their connection to the NGK in the Netherlands (Coertzen, 2016:197). Thanks to the Great Trek, the Afrikaners (known as the “trekkers”) preserved their language and culture with its Dutch influence (Pont, 1978:239).

By 1840, two diverging theological trends had developed in the Cape. The first was liberal theology with a strong relationship with the church in the Netherlands. The second theological trend was the English-American Methodism (Pont, 1978: 242). The anglicisation was one of the main reasons why the “trekkers” felt the urge to move inland (South African History Online, 2011).

As early as 1685, with the first mention of a new nation with a new language, this group referred to themselves as Christians. In 1707 Hendrik Bibault referred himself as an "Afrikaner" (Oliver, 2019). Right from the start, the "Afrikaner" was considered a Calvinist (Oliver, 2019). The innate stubbornness of the Afrikaner people has always been and still is a cause of internal conflict and frequent severance. The characteristics of the Afrikaner people include (i) strong-minded individualism, (ii) stubbornness, and (iii) collective persistence. The resulting internal strife is also visible in the history of Afrikaans churches (Oliver, 2019). This strong individualism and persistence of the Afrikaners became visible between 1835 and 1840 when 12 000 to 14 000 Calvinist Afrikaners migrated ("trekked") inland. In 1852 the British Parliament acknowledged the independence of the "trekkers" in the Transvaal, at the time known as the Zuid-Afrikaansche Republiek (ZAR) (Dreyer, 2006:1338). The constitution of the ZAR determined that the *Nederduitsch Hervormde Kerk* carried favour over other churches.

The pre-1994 government gave media exposure and other support to the three sister churches. One example is the practice of broadcasting the worship services of the sister churches on Sunday morning and evening by the South African Broadcasting Corporation (SABC). Coverage included radio and television (Scharnick-Udemans, 2016).

Up to 1991, the South African Broadcasting Corporation (SABC) had five permanent ministers in the religious division who regulated the broadcasting of Christian programmes (Buitendag, 2021).

4.3.2 The three sister churches after 1994

After 1994, a socio-political transformation took place. With the ratification of the Interim Constitution of 1993 and the Constitution of South Africa in 1996, the government protection of the three sister churches ended. The Constitution of 1996 prioritises individual rights over group rights (Barnett, 1998:557). Section 30 of the Bill of Rights protects the culture, religion and language of all South Africans (Scharnick-Udemans, 2016:126).

This ended the special protection of the protestant churches as a so-called "state churches". This opened the field for churches that promote prosperity theology, such as the Christian Revival Church (CRC), one of the fast-growing communities. The community was founded in 1994 by Pastor At Boshoff and has grown from 183 members to more than 70 000 members by 2020 (Boshoff & Boshoff, 2020). During the same period, the NHKA lost 34 545 members.

Table 1 - Loss of members (Dreyer et al., 2020)

	Members gained	Members departure	Nett Total
1999 – 2008	50,233	61,217	(10,984)
2009 – 2018	22,699	46,160	(23,461)
Total	136,293	166,238	(34,545)

With the acceptance of the Constitution in 1996, Ordinance 7 of 1842 was replaced by the Independent Broadcast Commission. The purpose of the Independent Broadcast Commission is to ensure that the government does not interfere with the media (Barnett, 1998:555). Due to a financial crisis, the sale of the radio stations in 1997-1998 paved the way for regional and community radio stations.

In Matthew 28:19, believers receive the mandate to go to all the people and make them disciples "...teaching them to observe everything I commanded..." (Bible, 2018:61). It is an instruction to do missionary work. The term "*mission Dei*" is the theological term for missionary work (Dreyer, 2020:253). According to my understanding as a Christian, it is the command to go and tell people about God. From a world perspective, it is marketing. The protestant churches have never explored or used extensive marketing opportunities like the CRC has been doing since 1992.

Social media and wide digitalisation have further complicated the challenges of the protestant churches in the 21st century. The fast-moving world of technology is a considerable challenge. If we look at the history of the ministries of the three sister churches, decisions have never been made quickly.

How prepared are congregations to use the open digital world? Secondly, to what extent are they ready to use it? Will the remnants of the old regime restrict them? What impact will a digital church have in a post-Covid-19 environment? The pandemic was more disruptive than interruptive, but it also opened the window to new opportunities (Nieuwhof, 2020).

4.4 The current marketing strategy of the *Nederduitsch Hervormde Kerk in Afrika*

The NHKA has no written strategic marketing plan. With the decline in the number of confessing members, the congregations of the sister churches have been struggling to survive over the last 25 years. That is an indication that the three sister churches are in the decline phase of the life cycle of an organisation.

Reverend Barnard explained this problem very well during an informal discussion on the 2nd of March 2022 in the form of an image of speech. He said the three sister churches have flying turkey syndrome (Barnard, 2022). They work hard to get into the air but not high enough to get over the wall, so they fly into the wall time and again. The outcome is that the turkey becomes quicker and faster in its efforts to hit the wall again.

In 2003 Kung made the statement in his book "Credo: The Apostles Creed explained for today": "many people called them religious, but not Christian; many call them Christians but not church members" (Kung, 2003).

4.5 Changes in the marketing strategy of the church over time

The church and the demands of its members have changed over time. It is noticeable that the indulgence system of the early church was commercialised during the Roman Empire to build the St. Peter's Basilica in Rome. (Van Wyk, 2019:61).

With the refreshment station established at the Cape, the Dutch East India Company commercialised it and promoted church planting in the Cape (Van der Merwe, 2014:115). From 1652 until 1994, the protestant reformed churches enjoyed state protection and had the privilege of exclusive public exposure from the national broadcaster (Buitendag, 2021:33-34; Scharnick-Udemans, 2016).

With the acceptance of the Constitution in 1996, the privilege of state protection was lost. It is noticeable that the three sister churches have lost some market share within the market segment to other religious groups.

The challenge for the church is not only to compete with other religious groups but also to keep up with the use of new technology like social media and digital communication.

Due to historical differences and the nature of their composition, the three sisters churches have no written marketing strategy to compete against the other religious groups in the same market segment.

5 Research Methodology

This study examines a particular phenomenon, which means that processes and methods used to obtain knowledge should be trustworthy (Botma *et al.*, 2010:39). As such, the research is exploratory in nature.

A qualitative, non-probability purposive sampling method was selected as the most suitable for the aim of the research. The study results can therefore not be generalised as the findings will be relevant only to the specific context.

The researcher used phenomenology to gather information from the available sources (Bryman & Bell, 2014:184). When using phenomenology, the empirical fieldwork data is about people's experience, behaviour, socialisation, cultural values and everything related to bodily action (Botma *et al.*, 2010: 190). In this study, data were collected in the following ways:

- A literature review.
- Group interviews based on an interview schedule with open-ended questions.
- Analysis of the data collected during the “Kerkspieël” project.

5.1 Research philosophy

The study departs from an interpretive point of view as the views and understanding of insiders and how they interpret reality are inseparable (Botma *et al.*, 2010:42). Interpretivism emphasises the role of people, how they interact with a phenomenon, and the relationship of these interactions with how the phenomenon is investigated (Botma *et al.*, 2010:185, 190).

The researcher can see how the entities (congregations) are a group at different levels within an ontology. Ontological assumptions cannot be separated from the culture, values and beliefs of the church members (Bryman & Bell, 2014:19). Therefore, ontology cannot be separated from epistemological research. Epistemology questions the acceptable standard of knowledge of the discipline.

5.2 Meta-theoretical assumptions

It is not easy to prove what people believe and why. In this study, participants' meta-theoretical assumptions about marketing in a religious environment in a postmodern time will affect the research outcome. The researcher tested participants' beliefs and opinions by conducting interviews via Zoom. The researcher has no control over the philosophy, views, experiences, and background of the participants.

5.3 Theoretical assumptions

Assumptions are those things people adhere to as true but cannot be proven. These assumptions affect the face value of information. Participants' answers may vary due to their interpretation of the open-ended questions during the interview and the assumptions they hold.

5.4 Research design

This research is a qualitative study using a non-probability, purposive sampling technique. The researcher sought to understand why the people in the relevant group what do they do. It was essential to gather divergent data from the purposive sample.

Marketing can be defined as a goal to meet or outperform customer expectations to grasp market share (Fahy & Jobber, 2019:5). Phenomenology entails that the research is focused on a specific group of people and a cultural behaviour (in this case, a church congregation). In turn, the study of religion is influenced by the culture within which the exploration occurs.

Qualitative data were collected through a semi-structured focus group interviews schedule to determine why the reformed churches lost market share.

Due to limited time, the study was cross-sectional.

5.5 Population and sampling

5.5.1 Population

The population for the study included all the members and the management teams of the 289 NHKA congregations in South Africa (Dreyer *et al.*, 2020)

The 289 congregations are distributed over the nine provinces as follows:

Table 2 - Congregation per province

Provinces	Number of congregations per province
Gauteng	102
North West	46
Mpumalanga	43
Northern Cape	10
Western Cape	12
Eastern Cape	8
Free State	24
Limpopo	29
KwaZulu-Natal	15
Total	289

5.5.2 Sample

Church leaders and management teams from selected congregations in South Africa were approached for a Zoom interview using an open-ended interview schedule. The secretary of the NHKA gave consent for the research (see Appendix A). The sample included male and female members from different age groups and fiduciary members (responsible persons).

Each congregation of the NHKA is responsible for managing its operations.

During the fieldwork phase, the Disaster Management Act 57 of 2002, under level 3 of the regulation, determined that religious gatherings are prohibited (Government Gazette, 2020).

This limitation necessitated Zoom interviews. The scope included:

- The time frame to collect the data.
- The financial implications of collecting the data.
- The literature that is accessible.
- The equipment that is used.
- The age of the data.

5.5.3 Sample size

The size of the sample was determined by data saturation plus one. Initially, the ten largest and four student congregations were identified as suitable participants in this study. Eventually, the following congregations were selected and included in the focus group interviews: -

Table 3: Congregations interviewed

Congregations
Middelburg-North
Middelburg
Bloemfontein
Pretoria-Oos
Suidoos-Witbank
Wapadrandt

Due to the Covid-19 pandemic and the distances across the country, semi-structured Zoom interviews were scheduled with each of the identified congregation's management teams.

5.6 Inclusion and exclusion criteria

The research was done in the NHKA as a representative of one of the three sister churches. The resulting marketing strategy will support all three Afrikaans reformed churches in their efforts to regain their lost market share.

The following inclusion criteria were applied:

- Participants had to be members of the NHKA.
- Ministers were included in the sample.
- Members of the management teams were included in the sample.
- Youth members of the NHKA were included in the sample.

5.7 Exclusion criteria

The following persons were excluded from the research:

- Persons who are not members of the NHKA.
- Young people who are not confessing members of the NHKA.

5.8 Risk to the participants

The research held low risks for the participants as the interviews were confidential and participants' views were not shared. An interview guide was used in a zoom meeting with focus group semi-structured interviews. With the development of a marketing strategy, the researcher is interested in the respondent's opinion about a marketing strategy within the ministries' operational side.

5.9 Process of obtaining informed consent

Before the researcher interviews, the researcher sought consent from the secretary of the General Church Assembly. An e-mail was sent to the secretary to explain the purpose and objectives of the research.

The researcher received a consent letter on the 8th of October 2020. The letter authorised the researcher to send out information and the interview schedules to the congregations listed in Table 2. The researcher received access to information on the congregations but not the individual members of the congregations in order to comply with the rules and regulations set out in the POPI Act (Zenda, Vorster & Da Viegga, 2020).

Prof. Cobus Schoeman is the leader of the "Kerkspieël" project. This project holds information on the three sister churches. The report includes data on the NHKA and the NGK and their members. Prof. Schoeman was approached via e-mail and in person on the 19th of October 2020. He agreed that the information could be used for this research, and he shared the ethics clearance issued on the 4th of September 2018 by the University of the Free state in relation to the information. This document is included in Appendix B.

5.10 Data collection

Data were collected through observation and interviews. The Covid-19 pandemic made in-person data collection impossible. As it was limited to religious gatherings and all gatherings such as fundraising, youth gatherings or Bible study groups, the researcher could not do observations. To overcome this limitation, a Zoom interview was set up with the congregation (as identified in Table 4). The interview guide was circulated via e-mail using the databases approved by the General Church Assembly secretary. The database includes the e-mail address and contact numbers of:

- Ministers
- Administrative personnel
- Chairpersons of the Elders, Deacons and Women's Association

The interview schedule included open-ended questions. The collection and analysis of the data are illustrated in Figure 1.



Figure 1 - Steps in conducting a social survey (Bryman & Bell, 2014:169).

5.11 Pilot testing

After a conceptual interview guide was developed, two typical respondents were approached for a pilot test. The pilot test contributed to the trustworthiness of the instrument.

5.12 Trustworthiness

The rigour of the research can be determined in two ways:

- The integrity and accuracy of the data, meaning that different researchers can use it for different projects, or
- The validation of the data through specific procedures. According to Creswell (Botma *et al.*, 2010:230), trustworthiness forms part of validity in qualitative research.

6 Results and Findings

The results of the focus group semi-structured Zoom interviews were divided into two sections. The first four questions established the demographic profile of the participants. The remaining nine questions were open-ended questions to get the opinions of the focus group participants about marketing in their congregation and the holistic church environment.

6.1 Demographics Profile

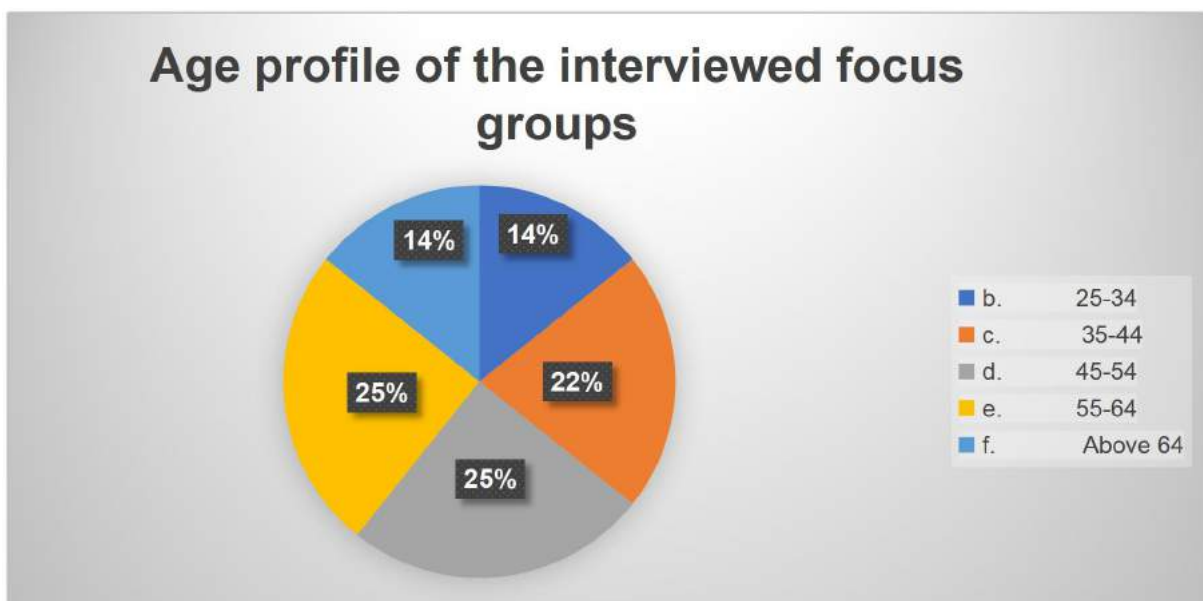


Figure 2 - Age profile of the interviewed focus group



Figure 3 - Highest qualification

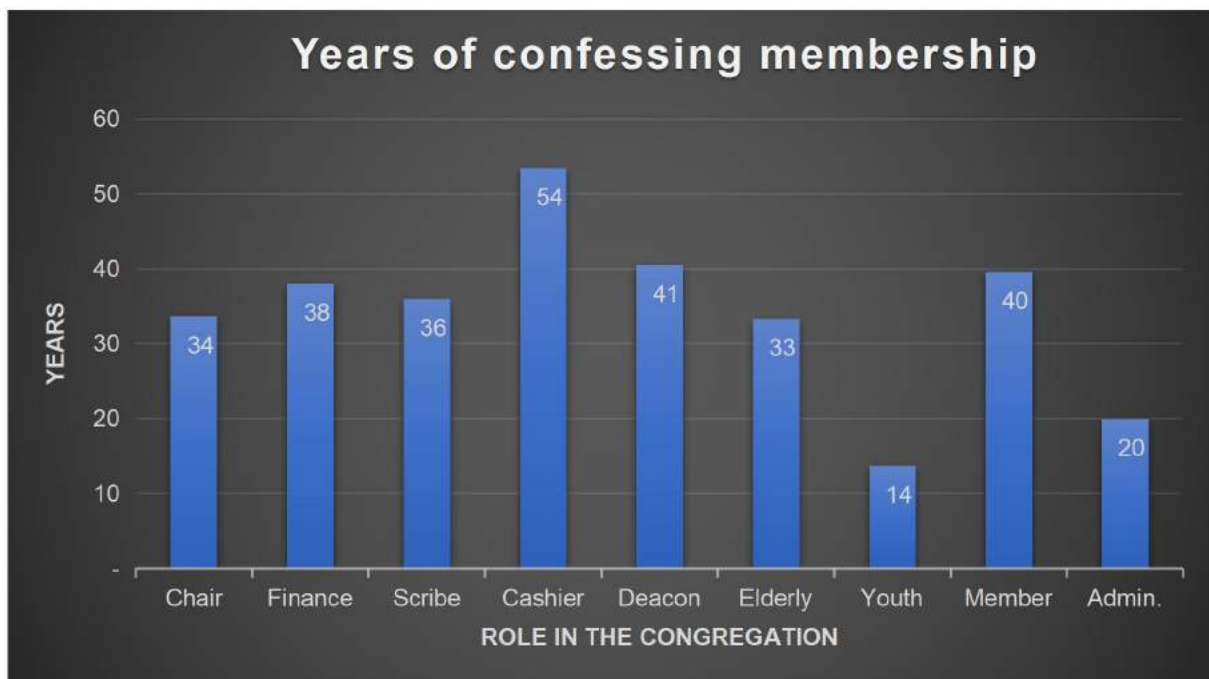


Figure 4 - Correlation between years of confessing membership and role in the congregation

6.2 Open-ended questions and conclusion

6.2.1 Part two: Open-ended questions

The second part of the interview guide contained open-ended questions. The section below presents the thematic analysis.

6.2.1.1 Thematic analysis of interviews

The questions were written down, and comments from each of the three focus groups were listed in table form to enable the researcher to identify themes, subthemes, and categories.

6.2.1.1.1 What is/are your view/s about a marketing strategy in the Nederduitsch Hervormde Kerk van Afrika?

Table 5: Views about a marketing strategy in the NHKA

Focus group 1	Focus group 2	Focus group 3
<p>P1 ".....ek dink nie daar bestaan so iets nie..."</p> <p>P2 " die bree Kerk ... nie n magtige bemarkingsvoertuig nie."</p> <p>P3. "....dit nie bestaan binne-in die Kerk nie....totale afwesigheid."</p> <p>P4. "....in die gemeente is ons in die kinderskoene...."</p> <p>P5. "....Dit is krities vir die voortbestaan van beide gemeente en Kerk om 'n omvattende plan te implementer"</p> <p>P6. "....dis 'n mindshif wat ondergaan moet word...."</p> <p>P7. "....dit bestaan regtig nie..."</p> <p>P8. "....dis so vloeibare tyd...dis nie waar hy is nie...waar hy gaan wees."</p> <p>P9. "....Dramatiese veranderings vorentoe..."</p> <p>P10. "... twee vlakke van bemarkingsplan... Een strategiese plan om die mense 'n kopskuif te maak...." Tweedens "...operasionele plan ...dag tot dag se bemarking."</p>	<p>P1. "Digitale bemarking sal die pad wees..."</p> <p>P2. "...meer leiding kry ...lidmate....verwag leiding"</p> <p>P3. "maak 'n fout deur te dink dat ons op harde kopie nog effektief kan kommunikeer....Oms samelewing is lank verby daardie soort bemarking of bekendstelling"</p> <p>P4. "...volhoubaarheid van die Kerk, in konteks met die uitbreiding en die bestaan..."</p>	<p>P1. " moeilik om marketing in kerkverband...lidmate te werf.. nog ooit aandag aangegee het nie..."</p> <p>P2. "... belangrik dat ons die buitewêreld laat weet wat ons as Hervormde Kerk doen.."</p> <p>P3. "... ons het nie rêrig 'n uitgewerkte strategie nie..."</p>

Translated summary for Table 5

Focus group 1	Focus group 2	Focus group 3
<p>Participant 1, 2, 3 & 7 argued that Nederduitsch Hervormde Kerk van Afrika does not have a strategic market plan.</p> <p>Participant 4 mentioned that they (in their congregation) are in starting phase of marketing.</p> <p>Participants 5, 6, 8 & 9 mentioned the importance of a Marketing strategy, but participants 6 & 10 agreed that a mind shift is needed before an operational plan can be implemented as a marketing strategy.</p>	<p>Participants 1 & 3 argued that the time of hard copy communication is something of the past and that we are in the digital marketing era.</p> <p>Participant 2 said that the congregation members are unsure about the road ahead and need guidance.</p> <p>Participant 4 is concerned about the sustainability of the church in the context of a possibility of growth or continued existence.</p>	<p>Participants 1 & 3 argued that they do not do marketing or go out and recruit new members.</p> <p>Participant 2 acknowledges the importance of marketing or introducing the Hervormde Kerk's doings to the outside world.</p>

Table 6: The themes and categories that emerged from Question 1

Theme	Sub-themes	Categories
Lack of a functional marketing plan	Non-existent functional marketing plan	<ul style="list-style-type: none"> • Extinct • Lack • Teach the teacher
Change is needed for the future	Change	<ul style="list-style-type: none"> • Change
Need to develop growth	Growth	<ul style="list-style-type: none"> • Development
Strategic levels	Development of a marketing plan	<ul style="list-style-type: none"> • Mindshift • Operational Marketing

All the focus groups agreed that the NHKA does not have a marketing plan. The **first theme** was – **Lack of a functional marketing plan**. The categories linked to the theme were the extinct and lack of a marketing strategy as indicated by Participants 1 and 7 of Focus Group 1 - P1 "...ek dink nie daar bestaan so iets nie..." and P7. "...dit bestaan regtig nie...". These comments suggest that the members are in anticipation of a marketing strategy. The last category is that members seek guidance to ensure sustainability, as mentioned by Participant 2 of Focus Group 2 - P2. "...meer leiding kry...lidmate....verwag leiding".

The **second theme** was **the need to change for the future**. e witnessed the changing of the church over the centuries. (Corrigan, 2012) proposes that organisations vary due to internal and external factors that successfully present an opportunity to change (Corrigan, 2012). This view from the literature was supported by Participant 1 of Focus Group 2, who mentioned - P1. "*Digitale bemarking sal die pad wees...*"

The **third theme** was the **need to develop growth**. According to Statistics South Africa, the white population has grown over the last ten years (Stats SA, 2021). This is the target market where growth is possible, especially with digital marketing, as specified by Participant 4 of Focus Group 2.- P4. "...volhoubaarheid van die Kerk, in konteks met die uitbreiding en die bestaan..."

The **fourth theme** is the **different strategic levels**. In the operations of a congregation, people's minds have to shift to ensure that the strategic plan is implemented. Participant 10 of Focus Group 1 referred to different strategic levels: P10. "... twee vlakke van bemarkingsplan... Een strategiese plan om die mense 'n kopskuif te maak...." Tweedens "...operasionele plan ...dag tot dag se bemarking.". The first strategic step would be to bring a mind shift in the church. Second, there should be a strategic marketing plan for the church and congregation.

The following results were found in the analysing of the focus group semi-structured interviews:

- The first finding is that the NHKA does not have a marketing strategy but the church values communication. Communication should preferably use any digital communication platform as long as it is short messages.
- The principle of stewardship is essential to get all different age groups involved to take ownership of the implementation of the marketing plan.
- The marketing plan should be aimed at growth, and it cannot go without the necessary changes and mind shifts among the people. Digital marketing and communication and the use of technology, especially in the post-Covid-19 era, have to be part of the marketing plan of a congregation and the church.
- The inside-out approach emphasises the internal strength of a church as a means to succeed with a marketing plan directed at the external environment.
- Two-thirds of the focus group in the empirical research indicated that they would use the same marketing tools for an effective and efficient marketing strategy

The average age of the participants at the time of the interviews was 49. The data gathered by means of the empirical fieldwork indicate that the church has not protected its market share since the changes that occurred from 1994 onwards. It seems that churches are stuck in the mindset they had in the era when they had state protection, as the results show that the NHKA does not have a marketing strategy. All the participants of the focus groups were open to a proposed marketing strategy.

The information received from the empirical process suggests tools for efficient marketing of the congregation's operational ministries. These tools reveal an inside-out communication strategy.

6.3 Final inferences

As indicated, the sister churches are losing members each year, even though the white population of South Africa, which is the target market of the three sister churches, has grown by 2% from 2011 to

2020 (Stats SA, 2020). In contrast with the declining number of members in the three sister churches, churches that follow a prosperity theology keep growing.

The literature study follows the development of the church globally and shows how the Afrikaans churches enjoyed state protection until 1996. This meant that the churches did not necessarily have to do any marketing. After 1994, churches that promote a prosperity theology, such as the Christian Revival Church (CRC), became some of the fastest-growing communities. The Apostles Creed is one of the things the three sister churches have in common, something they may perhaps use to their advantage.

The research method, including the thematic analysis of the data retrieved from the focus group interviews, addressed the study's trustworthiness.

The researcher identified themes from the focus group interviews. These themes revealed an inside-out communication strategy.

7 Managerial Implications

The researcher views this study as relevant, valid, and significant.

7.1 Marketing Strategy

The two key decisions questions in the set-up of a marketing strategy are:

- Which market to target?
- How do we position ourselves in that market?
-

7.1.1 Target market strategy

The target market or niche mark of the NHKA is the white Afrikaans speaking people. The reason for this market is because it's a historical past. However, the Reformed sister Churches' congregations were established in a geographical area that has changed over the last 25 years. In this period, the NHKA changed its Constitution (Kerkorde), which increased the niche market to the Afrikaans speaking and understanding people. The change in effect allows any person to become a member who accepts the culture in which the Church spread the Word of God.

7.1.2 Positioning

The marketing mix refers to the 4 P's (product, place, promotion and price). An additional 3 P's (People Process and Physical evidence) are added to the mix within a service environment (Lamb *et al.*, 2019: 539-540 & 556-557). The challenge is to blend all 7P's as a unity to ensure an effective and efficient result. The strength of the marketing mix within the marketing strategy depends on the intelligent changes and acceptance of the change. The fine-tune within the marketing mix elements can ensure competitive success (Lamb *et al.*, 2019:539).

7.1.3 Product

The challenge for most Churches is to increase Church membership and church attendance. The question of non-Church goers is, "Why should I attend Church?" Unless there is a specific reason (Bagwell, 2007).

Most people are looking for a tangible product, but what product can a Church offer? These days it is not only tangible products but also services and brands are defined as a product.

The product that the NHKA offer is summarised in their mission, namely

- The **celebration** of the good news of the gospel of Jesus Christ.
- to practice the **community** of the believers.
- to provide **service in all forms that the Church offer**; and
- to **testify** to all people about the hope that lives in us.

The other visible product the NHKA provides is developing and accepting a new brand in 2018, as indicated in figure 5 below.



Figure 5: New Brand of the NHKA (Nederduitsch Hervormde Kerk van Afrika, 2017)

With the acceptance of the new brand, the NHKA transformed and freed them from the past. New innovative ways are used to meet the needs of the core business (product) and expectations. The challenge with the new brand is to ensure trust, loyalty, friendliness, and a place to belong. This boiled down to an emotional bond between the member and non-member and the (product) of the Church's core business.

The reduction of the members of the NHKA is visible within figure 6.

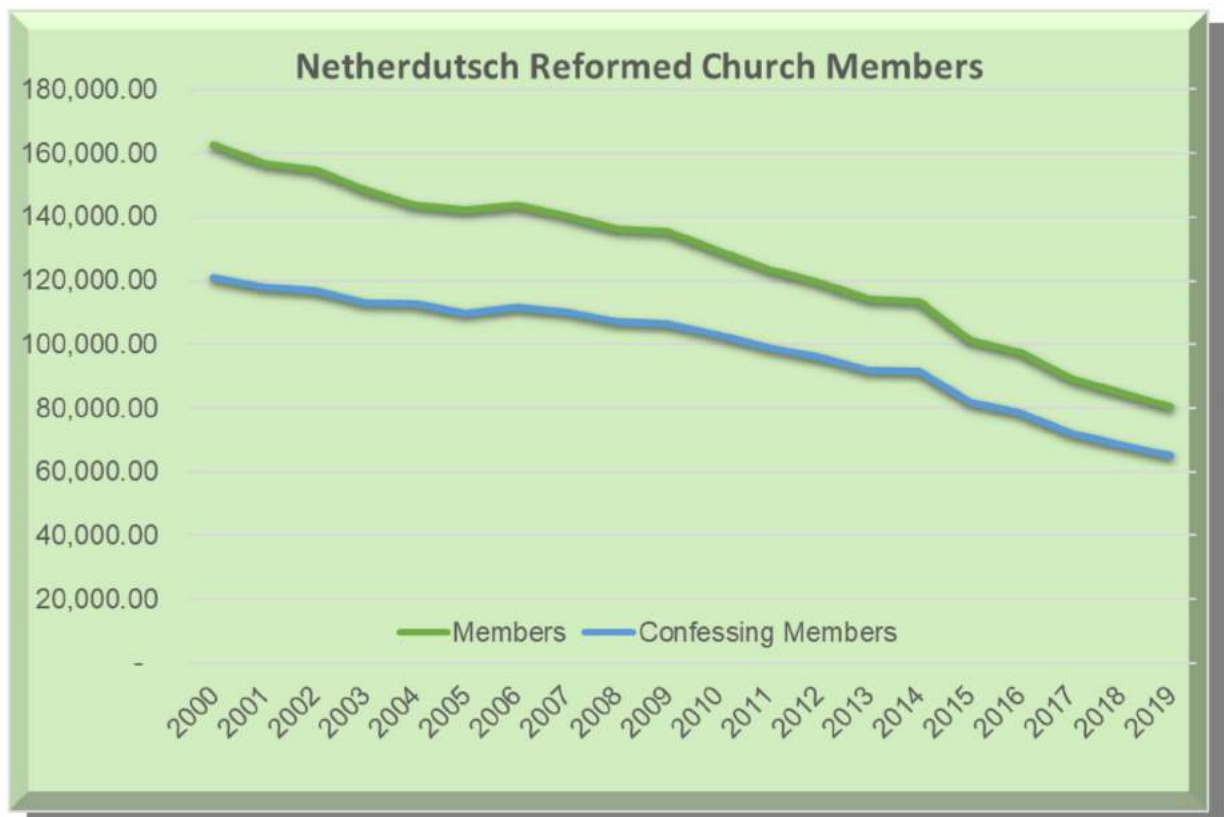


Figure 6: NHKA members (Van Staden, 2009).

The same trend is found at the other two Reformed sisters churches. With the decrease in members and youth members, it can be acknowledged that the Reformed sisters church is in a decline stage of the product life cycle. With the acceptance of the new brand in 2018, the Church breathes new life

into the life cycle of the NHKA. The time between decline and growth is also known as chaos when adjustments are made, as indicated in figure 7.

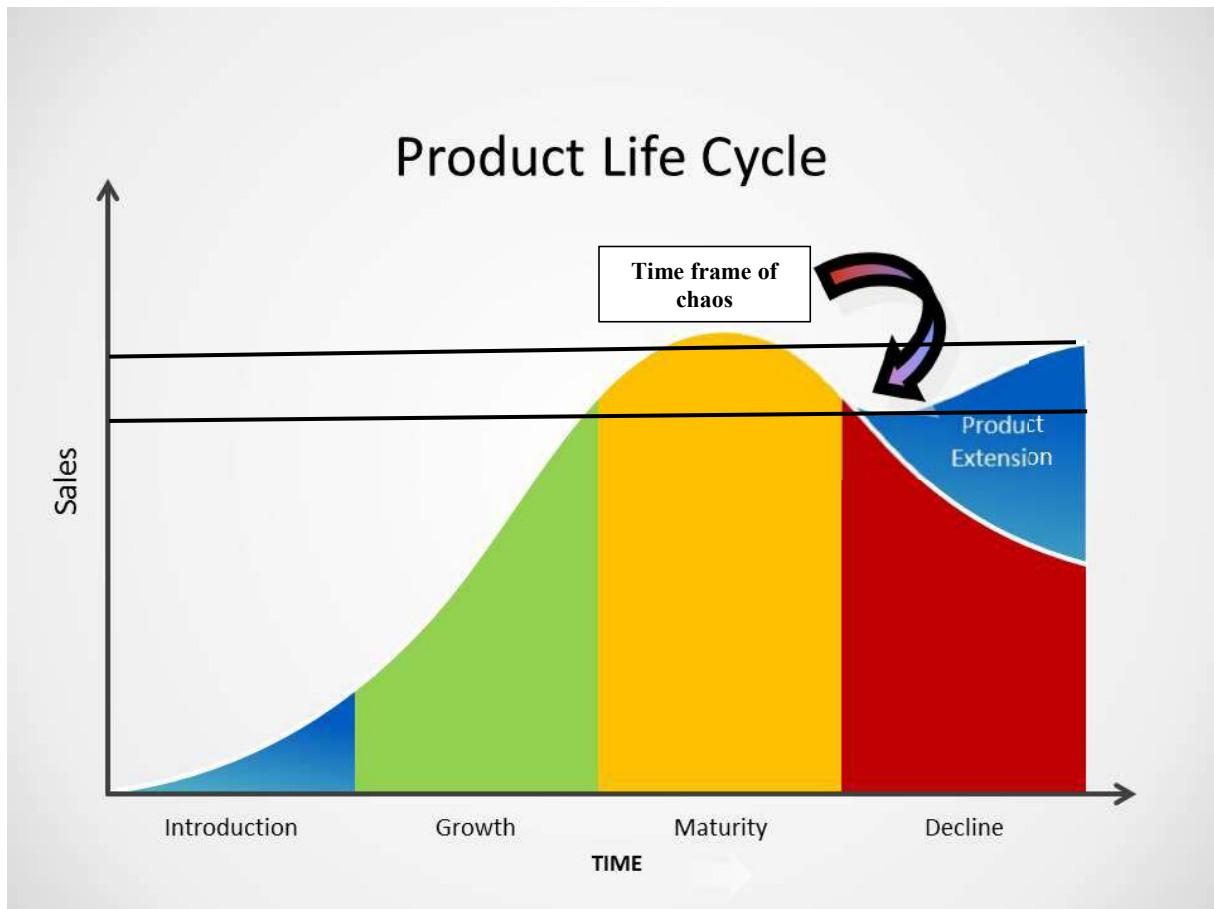


Figure 7: Product Life Cycle (Lamb *et al.*, 2019:343)

New innovative ways are used to meet the needs of the core business (product) and expectations.

7.1.4 Place/distribution

To have a *domicile citandi et executandi* address is essential for legal engagements. This address is where members and Non-members can say it is their place of worship and place of belonging in a community of believers.

Within the digital world, social media is a place to start your Church marketing. The most familiar social media platforms are:

- Facebook.
- Twitter.
- Instagram.
- LinkedIn.
- YouTube.

These platforms are places to distribute information about a congregation ministry. In addition, social media is a place to attract strangers to an assembly.

Another place of attraction is the building attractive and interactive website. The information sharing on the website will determine if a stranger will fit into the culture of a congregation (Naylor, 2021). When a stranger uses google, it is vital to register the website account on *Google My Business* to indicate the nearest Church and the congregation's information (Naylor, 2021).

7.1.5 Marketing communication (Promotion)

Effective communication is a crucial performance indicator when it comes to marketing. Without communication, the whole marketing plan will collapse. Within the **promotion** or **communication** of the services of the NHKA, the marketing plan will have a look into the detail of the following aspect to engage with the target market (Lamb *et al.*, 2019: 400).

7.1.5.1 Advertising

What is the effect of advertising? In 2013 the total amount spent on advertising was =R 45 billion (Lamb *et al.*, 2019: 401). In 2019 the advertising increased and was dominated by television and video advertising. Advertising on the internet is growing at such a pace it is expected to take over television within the next three years (Shand, 2020).

It is expected in 2020 that 15% of global advertisements will be on social media (Shand, 2020). Advertising is part of everybody's life and influence people way of think and spending. One of the more attractive ads which received more attention is humorous ads. Another aspect of advertising is the advertising of a brand. The new brand of the NHKA may influence the attitude of people positive. Therefore, it has to be part of the market plan.

The NHKA is marketed as a unit to gain favourable/positivity towards the broader Church through corporate advertising.

With advocacy advertising, the Church will communicate its views and on controversial issues on social media platforms to communicate that information.

7.1.5.2 Public relations

Bill Gates has said that "If I was down to my last dollar, I would spend it on public relations." (Knikker, 2021).

With public relations, it is crucial to communicate timely and current relevant and exciting information for Church members and strangers or non-Churchgoers.

Through public relations, it is not only about maintaining a positive image, but it also serves as an opportunity to train the public of the Church vision and objectives. The testimony of a public personality connects and attract the youth to a congregation of the Church.

7.1.5.3 Personal selling

The person who does the advocacy advertising has to know the Church to address and communicate burning uses timely. The effectiveness and efficiency of the communication have to be timely bounded. The person who "sells" new complex information to the public on the internet and social media must be informed to do positive marketing.

The personnel responsible for distributing and publishing information must also manage their most significant target market or get information about their target market to establish growth potential. Therefore, this team needs to build and maintain a strong relationship with members and strangers to gain market loss.

The challenge is to recruit and retain new members. The answers (feedback/follow up) of those communications and burning issues is vital to cultivate those in the target market and those who have commented or suggestions. The strategy is to inform people about the Church views according to their vision, mission and objectives.

7.1.5.4 Service promotion

The promotion of service that the Church offers is information or service that has eternal value. It does not necessarily include those charity services of a congregation but also promotes those services that help develop personal strength and psychological growth. These promotions stretch over genders,

personalities, age, profession etc. The venue of these promotions is not bounded at a specific denomination or congregation, with the opportunities of electronic communication, webinars, online short courses, and daily Bible messages.

The information received from SEMRUSH (the analysis of a website's traffic) has indicated only 3200 followers on the website of nhka.org (SEMRUSH, 2021).

The promotion of service is to increase followers on the Church website. To increase the traffic on the website, the following suggestions are: -

- Expansion of keywords on the webpage to attract a larger audience.
- To link up with the webpage of a Gospel radio station to promote the service and the Good News in a way, the NHKA proclamation.
- Promote the Church on Schools & Universities websites with the slogan, for example, "Religion is fun." This promotion aim is to target the youth.
- Create a platform to promote Gospel music and musicians. One example is to publish the top 10 Gospel music of a week.
- The journey of public personality.

7.1.6 Price

Unfortunately, no price can be linked to the services of a church. However, a Church's financial liquidity and sustainability directly link to the tithes that people gave as offerings. The concept of the tithes or offerings is written in the Old Testament of the Bible and more specifically in the books Leviticus 27:30; Numbers 18:26; Deuteronomy 14:24; 2 and Chronicles 31: 5 (Campbell, 2010).

Because the Church is in this world, it must comply with economic and financial challenges and activities. The financing of a congregation ministry is basically from offerings from their members—the concept of economy of scale makes it financially sustainable.

7.1.7 People, Process and Physical Evidence

Within a service environment, the marketing mix elements are expanded with the additional 3 P's, namely People, Process and Physical Evidence. These additional 3 P's are discussed in detail within Product, Place and Promotion.

7.2 Recommendations

The following recommendations flow from the study: -

- Churches should be made more visible using a marketing strategy.
- A new logo/brand will give the church an opportunity to roll out a marketing strategy. The newly developed logo should be promoted by branding buildings, cars etc.
- The church's services in the community should be marketed in a more prominent, effective and efficient way. These services include social development in the community.
- The youth can be involved in marketing the congregation's operational ministries to make it fun during the week.
- The church should consider the provision of VR (virtual rooms) to broadcast worship services to old age homes, hospitals, and other institutions like correctional facilities so that members and non-members can attend worship services virtually.
- The church should use digital marketing to improve the inside-out communication strategy.
- The church should create an opportunity for discussion to interact (blog/social media) with the minister after the worship service.

8 Conclusion

The study has proven the importance of marketing in the three sister churches. This study found that technology offers further potential functionality, as seen during the Covid-19 pandemic, especially to involve youth.

The researcher believes this study makes a unique contribution as it is essential for the church to gain back its market share, especially through digital marketing. In this way, they can reach the youth and involve people who do not belong to any church denomination or who have broken free from the church but acknowledge that they are Christians.

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The Impact Of The Covid-19 Pandemic On Consumer Sustainability And Greening Practices

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Keywords

Consumer Sustainability;
Greening Practises;
COVID-19

Abstract

This paper sets out to identify the impact of the COVID-19 pandemic on consumer sustainability and greening practices within Nelson Mandela Bay. Substantial research on consumer sustainability, green practices, the environment, and the economy exist but there is limited research on the impact of the COVID-19 pandemic on consumer sustainability and greening practices. The study adopted a quantitative research methodology using descriptive and exploratory research. The survey method was used by means of distributing 275 self-administered structured questionnaires to respondents within the designated population during the third wave of the COVID-19 pandemic. Main findings from the empirical results established that consumers were either neutral or agreed to some of the measures for implementing greening and sustainable practices such as health, waste management, environmental management, transport and traveling and food and clothing practices. Clear guidelines are provided to consumers as to implementing sustainable and greening practices based on lessons learnt during the pandemic.

1. Introduction

The shift in green consumerism and sustainability can be traced back to the early 1960's and 1970's, as people became more aware of the environmental challenges that the world was beginning to face (Du Pisani, 2006). Since then, there has been increased pressure and demands for global initiatives specifically dedicated towards sustainability. As a result, sustainability and green practices are being implemented on a global scale as nations and organisations seek to modify their environmental response toward sustainability (Conrad, 2013:3369). The modification of environmental practices and processes also ensure that consumers are consistently informed of the environmental hazards imposed by organisations as they pursue their bottom line (Smith & Perks, 2010:2).

The promotion of green consumption is considered a significant method of solving environmental issues and the exploitation of natural resources. Thus, green consumption contributes to reducing environmental degradation (Ogiemwonyi, Harun, Othman, Ismail & Ali, 2019:514). Varghese and Viswanathan (2018:87) claim that the most basic way for consumers to help create a cleaner environment is to consume responsibly. Green practices are also defined as the development of procedures for the preservation of energy and other environmental resources (Dutta, Umashankar, Choi & Pasa, 2008:270). Li (2020:586) further asserts that consumer greening practices are based on their green or sustainable consumption and argue that it involves three aspects. Firstly, the consumer is motivated to purchase green production. Secondly, the consumer is encouraged to take measures in circumventing environmental pollution and lastly, it enables the consumer to modify their consumer concepts and promote the natural environment. Consumer's sustainable and green practices include among other, sustainable food practices, sustainable household consumption, transportation and mobility (Akenji & Chen, 2016:7-8).

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In March 2020, COVID-19 was declared a pandemic by the World Health Organization and was seen to be the most destructive disease to plague the world in over a century (Cucinotta & Vanelli, 2020:157). Due to the devastating effect the disease had on people, most countries implemented stay-at-home orders which resulted in the closure of many non-essential businesses. This resulted in severe repercussions economically worldwide, seriously impacting global supply chains and thus harming the global economy (Ebrahim, Ahmed, Gozzer, Schlagenauf & Memish, 2020). The impact of the pandemic had a major effect on consumption dynamics, not only were individuals forced to limit their consumption in order to adapt to the changing circumstances, but they were also forced to re-evaluate their overall consumption model – leading to consumers choosing products and services with higher levels of attention regarding environmental responsibility (Esposti, Mortara & Roberti, 2021). Among the physical impacts of COVID-19, negative effects on individual's mental health were also experienced. Studies conducted found that the effects of isolation and quarantine resulted in the increased likelihood of afflictions such as depression, anger, and post-traumatic stress symptoms (Brooks, Webster, Smith, Woodland, Wessely, Greenberg & Rubin, 2020 and Fullana, Hidalgo-Mazzei, Vieta & Radua, 2020). These aspects could have had a possible impact on consumer greening and sustainability practices and buying behaviour.

Behavioural changes in purchasing have previously been observed during times of large-scale events, such as earthquakes, floods, epidemics and pandemics that showed some disruptions in consumer buying behaviour (Fortin & Uncles, 2011). It has also been indicated that when people are faced with stressful situations that threaten their wellbeing, their buying behaviour changes in order to lighten existential pressures (Arndt, Solomon, Kasser & Sheldon, 2004). The COVID-19 pandemic has thus caused consumers to re-evaluate their attitudes towards the environment, society, workplace and buying habits. Against this background, this study aimed to explore how COVID-19 impacted the sustainability and greening practices of consumers in Nelson Mandela Bay.

2. Problem Investigated

In an ideal world, consumers would be able to consume as much as they wanted while having little or no effect on the environment or availability of resources for future consumers. Consumers are increasingly becoming aware of how the creation and use of their preferred products could lead to waste, pollution or disruption of the environment. One of the ways consumers reduce these negative externalities, is by using sustainable and green practices (Young, Hwang, McDonald & Oates, 2010:20). These practices include, but are not limited to, purchasing eco-friendly products, recycling, and upcycling products and reducing the use of plastics and other non-biodegradable products. The environment is burdened by global warming and scarcity of resources (Lorek & Fuchs, 2011:2). It has become evident that humans have the capacity to contribute to various efforts to sustain the environment and contend that consumers have an increasing interest in protecting the environment which encourages companies to achieve greener production (Larsson & Khan, 2011:1). Although the impact of environmental sustainability for organisations and consumers is a widely researched topic, limited research has been conducted regarding this aspect during the pandemic.

Green consumption consists of activities including how consumers retain, use, and dispose their waste, recycling, effective utilisation of energy and other resources, safety and health and the preservation of physical and biological resources (Singh & Gupta, 2012:3). Consequently, several green practices and activities have been developed to aid environmental impacts such as green purchasing, green supply chain management, green manufacturing, green packaging, and reverse logistics (Shaharudin, Akbar, Zainal, Hassam Zainoddin & Nizam, 2018: 243). Consumers could play an integral role in the preservation of the environment through their green purchasing activities. In recent years, more emphasis has been placed on sustainability and increasing concerns for the environment (Giovannoni & Fabietti, 2014:21). However, there are many challenges to achieving a degree of sustainability that ensures future generations meet their needs (Orr, 2002:1457). COVID-19 has emerged as a key challenge for consumer sustainability and greening practices. European Environment Agency (2022) postulates that environmental deprivation often increases the risk of pandemics. COVID-19 has emerged and escalated through the composite interaction between drivers of change, such as ecosystem disturbance, international travel and climate change. The pandemic has also shown that

societies and consumers have immense potential for collective action and change when faced with a perceived emergency.

Although the pandemic has led to a decline in greenhouse gas emissions, the pandemic has also led to excessive consumption, increased technological and energy requirements, and increased solid waste generation (McGain, Muret, Lawson & Sherman, 2021). Latham (2021) contends that the pandemic has also resulted in healthier consumption choices. Although there is abundant literature on consumer greening and sustainability practices, limited research is available of the impact of the pandemic on these practices as the world is still in the midst of the pandemic. The key research question to be addressed in this paper is thus: *What is the influence of the COVID-19 pandemic on consumer sustainability and greening practices within Nelson Mandela Bay?*

3. Research Objectives

3.1. Primary objective

In line with the problem statement, the primary objective of this study is to assess the influence of the COVID-19 pandemic on consumer sustainability and greening practices within Nelson Mandela Bay.

3.2 Secondary objectives

In order to achieve the primary objective, the following secondary objectives have been formulated.

- To conduct a theoretical overview of consumers' sustainability and greening practices during the pandemic.
- To develop an appropriate measuring instrument of the impact of the COVID-19 pandemic on consumer greening practices.
- To empirically assess the level of consumer sustainability and greening practices undertaken by consumers in Nelson Mandela Bay amid the COVID-19 pandemic.
- To provide conclusions and recommendations on how to improve the undertaking of sustainable and greening consumer practices during the pandemic.

4. Literature Review

4.1 Clarification of key concepts

This section of the literature overview seeks to define the key concepts related to the impact of the COVID-19 pandemic on consumer sustainability and greening practices.

4.1.1. Greening practices

Solaja and Adetola (2018:199) define green and sustainable practices as any activities aimed at reducing the impact of human activity on the environment. According to Tan, Johnstone and Yang (2016:2), green and sustainable practices include activities such as recycling, preserving water, decreasing the use of plastic bags and buying environmentally friendly products and services. Consumers have increasingly become aware of the effect their consumption has on the natural environment. This has instilled a need to implement practices that benefit or preserve the environment (Nair & Maram, 2015:5).

4.1.2. Consumer sustainability

According to Hosta and Zabkar (2016:147), consumer sustainability can be defined as the consumers' consciousness regarding the long-term impact of their actions on the condition of the environment. Sharma and Rani (2014:369) argue that sustainable consumption is the consumption of goods and services that do not exhibit harmful impacts on the environment and continues the process of meeting basic human needs for present and future generations.

4.2 Theory of planned behaviour

Specific attitudes and behaviours are required for the consumer to execute sustainable and green choices. The theoretical underpinning of this study is based on the theory of planned behaviour (TPB) which conceptualises the environmental behaviour associated with the psychology of consumer

choices (Dawson & Hancock, 2018:23). Smith (2020:6) also contends that the theory of planned behaviour provides a structure for identifying the determinants of environmental behaviour. Furthermore, Azjen (1991) states that behavioural intentions can be predicted by attitudes towards behaviour, subjective norms and perceived behavioural control (see Figure 1). An individual's attitude is defined as an assessment of the behaviour the individual intends to perform (Kuek, Yap, Chen, Choong, Tan, Kuah & Ng, 2020: 2475). The subjective norm characterises the individual's execution of the action, considering social or community acceptance (Dawson & Hancock, 2018:24). Perceived behavioural control refers to the perceived difficulty of carrying out the task considering an individual's control over it (Kuek et al., 2020:2476).

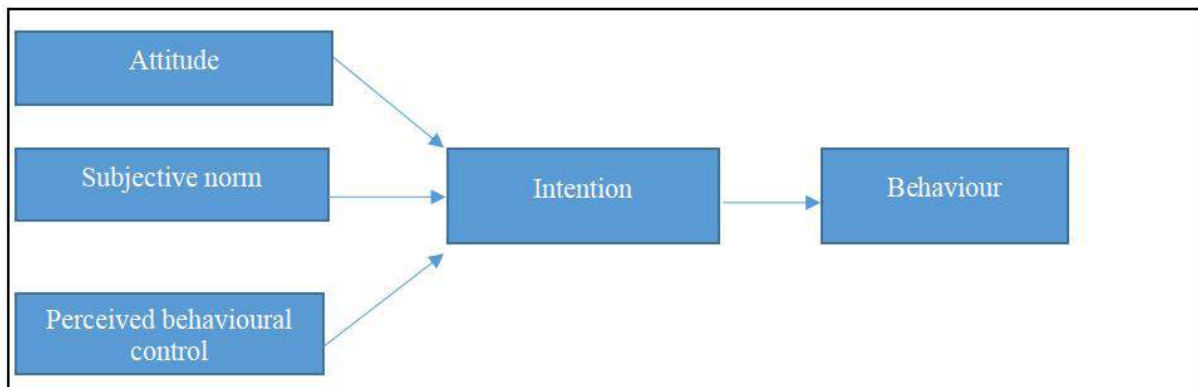


Figure 1: Theory of planned behaviour
Source: Adapted from Dawson and Hancock (2018: 24)

4.3 Impact of the pandemic on consumerism patterns

The immediate effects on consumer behaviour during the initial phase of the pandemic saw consumers stockpiling, hoarding, and embracing digital technology which included home deliveries (Sheth, 2020). Consumers have been known to engage in hoarding above what is needed due to an emotional reactance response (Kirk & Rifkin, 2020). This was observed in the first phase of the pandemic where consumers were seen to have reacted in a highly emotional and irrational way leading to the emptying of store shelves by hoarding products (panic buying) (Hall, Prayag, Fieger & Dyason, 2020). Following the phase of stockpiling and mass purchasing of products, it was found that consumer preferences morphed into favouring niche products (Huang & Sengupta, 2020). Along with changing preferences, consumers began engaging in the improvisation of do-it-yourself activities in order to manage the shortage of products which included cooking, baking and exercising. This change in mentality reconfigured previous purchasing and consumption habits (Sheth, 2020). Amid the negativity, the pandemic may also have yielded positive outcomes. Robson (2020) alleges that the pandemic may have caused people to respond and act in a more morally enforced way. Sheth (2020) concurs that the promotion and increase in social obligation and humanitarian/philanthropic behaviour is increased when individuals are faced with the fear of natural or human-made disasters. Studies conducted during the outbreak also found that in order to endure the negative effects of stress and anxiety that arose from the uncertainty, people tend to reinforce their communal well-being, and intensify their humanitarian behavioural intentions (Malik, Schat, Raziq, Shahzad & Khan, 2018). Most notably, increased emphasis towards hygiene behaviours, and the shift in consumption patterns as the pandemic evolved (Hassen, Bilali & Allahyari, 2020). Qi, Yu and Ploeger (2020) also reported that consumer attitudes towards organic food rose following the outbreak of the virus. The pandemic has thus brought forth the notion of eternal growth as a solution for sustainability, as fossil fuels are running out and the climate is changing (Giannetti, Fonseca, Almeida, de Oliveira, Valenti & Agostinho, 2021).

4.4 Consumer sustainability and greening practices under COVID-19

This section seeks to provide a detailed discussion on the practices that consumers undertake in their efforts to protect the natural environment, with specific reference to the pandemic, namely waste management, sustainable clothing and food practices, sustainable health practices and green transport

and travel and environmental sustainability. Figure 2 illustrates the theoretical framework developed to determine the impact of the COVID-19 pandemic on consumer greening and sustainability practices.



Figure 2 - Theoretical framework: Impact of COVID-19 on consumer greening and sustainability practicesSource: Own construction

4.4.1 Sustainable health practices

Apart from environmental impacts, health is also substantially impacted by consumer's food choices (Akenji & Chen, 2016:6). Consumption of sustainable health products includes among other, maintaining a sustainable lifestyle, the use of locally produced foods and organic food consumption. Consumers acquire locally produced items that contribute to the minimisation of energy utilisation in the production process, transportation and storage (Sustain, 2007:4). Martinez (2020) concurs that the pandemic has increased consumer affinity for locally produced products. During the pandemic, consumers are more inclined toward smaller, hometown local shops that have local sourcing, ownership, and a more direct impact on the local economy and community. These smaller retail stores do not require customers to be inside the store for long periods of time, which is more desirable regarding social distancing. Customers also may read labels more closely, scrutinize the ingredients of products, and are much more careful about what they put in and on their bodies. The virus has also caused a decline in household expenditure and movements in the spending patterns of consumers (Jribi, Ismail, Doggui & Debbabi, 2020:2). Consumer sustainable food consumption principles include the purchasing of organic products that minimise harmful impacts on the environment and the health of the consumer (Sustain, 2007:4). Consumers trust that organic food products have the ability to boost their immune system and provide ammunition against the COVID-19 virus (Gumber & Rana, 2021:2). A sustainable lifestyle is defined as sequence of consumption employed by consumers in order to promote improved quality of life, minimise natural resource and emissions usage and promotes the needs of future generations (Rakic & Rakic, 2015:893). The COVID-19 pandemic has caused individuals to realise the impact of their consumption choices on the environment and has resulted in the consumer adopting a more sustainable lifestyle (Dey, 2021). Beyond impacting some of the factors that determine consumer spending, the COVID-19 pandemic has also drastically altered how and where consumers choose to spend their hard-earned cash.

4.4.2 Waste management practices

Sarkodie and Owusu (2020) argue that the suppression of the spread of COVID-19 pandemic and limitations on commercial and manufacturing activities and mobility have also significantly affected

waste management in most countries. Household waste management is critical to human development and health outcomes, especially during the COVID-19 pandemic. The intensification of single-use products and panic buying have also increased production and consumption, hence thwarting efforts towards reducing plastic pollution. According to Choshaly (2016:54), the concept of the 3R's forms the basis of green consumption and sustainable development and consists of three activities, namely reduce, reuse, and recycle. *Waste prevention* plays a significant part in the management of waste (Abdul-Rahman, 2014:1). Consumers can implement various steps in their efforts to reduce or prevent waste, including the purchasing of items that are required, and not those that form "wants", purchasing products that are superior in quality, using durable rather than disposable products and avoiding the use of plastic bags by purchasing shopping bags (Abdul-Rahman, 2014:2). *Reusing* transpires after waste prevention is executed (Medina, 2010:7). Reusing is defined as a process that occurs when an object has already satisfied its purpose and is used to perform another activity (Umar, Sehab & Yagnik, 2018:58). Strategies for the reuse of an item includes methods such as employing shopping bags, donating mature objects to charity (Smith, 2020:10), and acquiring beverages in revertible containers (Abdul-Rahman, 2014:3). Recycling involves the regenerating of waste from old materials for reprocessing (Umar et al., 2018:58). Several activities are associated with the process of recycling, including the collection, manufacturing, and refining of materials to enable consumers to acquire newly produced products modified from recycled materials (Smith, 2020:11). The pandemic has thus forced consumers to rethink their household management practices as to contain the spread of the virus. Lockdown measures and the use of sanitizers and face masks impacted on household waste management practices.

4.4.3 Environmental sustainability

Environmental sustainability can be defined as a state of balance and interdependence that enables humans to satisfy their needs while maintaining the volume of the ecosystem to resume its restoration of the services required to satisfy those needs (Morelli, 2011:5). Improved energy efficiency in households refers to adequate attempts to lower energy consumption of households, without compromising the degree of consumer welfare or the state of the environment (Khan et al., 2020:1). The COVID-19 pandemic has resulted in increased waste production from single-use plastic, including personal protective equipment and has impacted waste management activities on a global scale (Silva, Prata & Rocha-Santos, 2020). According to Fielding, Russell, Sprinks and Mankad (2012:1) and Dworak, Berglund, Laaser, Strosser, Rousard, Grandmougin, Kossida and Kyriazopoulou (2007:9), the conservation of water is a fundamental activity undertaken by consumers and households in an attempt to preserve environmental resources and avoid water scarcity. During the pandemic and lockdown most people were forced to stay indoors and work from home thus placing increased pressure on household water and electricity consumption.

4.4.4 Sustainable transportation and travel

Sung and Monschauer (2020) are of the opinion that the COVID-19 crisis has changed people's transport behaviour in many ways, with large reductions in aviation and public transport use and significant growth in cycling usage. One of the biggest impacts has been the reduction in passenger transport demand, due to a combination of government lockdowns and fears of contracting and spreading the virus when using mass or public transport modes. According to Akenji and Chen (2016:8), environmentally sustainable transport is defined as a system that prevents harm to the ecosystem and satisfies human needs for access associated with the utilisation of renewable resources so that consumers can contribute to sustainable systems of travel by adapting their habits to consider the types of transport used, the frequency and distance of travel and the support systems and infrastructure. According to Sung and Monschauer (2020), the pandemic has affected various forms of transport, including public transport and vehicle mobility. Shared transportation is a form of consumption, which refers to passengers sharing transportation (Faulin, Grasman, Juan & Hirsch, 2019:17). International transport activity decreased below fifty percent during the pandemic, while air travel has declined by almost seventy-five percent (Sung & Monschauer, 2020). Sustainable transportation is influenced by COVID-19 through working from home activities that affect air pollution and traffic congestion and the use of electric automobiles (Panday & Bansal, 2014: 305).

4.4.5 Sustainable food and clothing

Consumers play a significant role in the sustainability of food chains through their food choices. According to Brown (2021), food systems affect the environment and influences greenhouse gas emissions, occupies significant amounts of land, and effects biodiversity. Sustainable food consumption is defined as the consumption of food and dietary consumables that satisfy the dietary requirements of humans, the natural environment, and the economy (Ifeanyichukwa & Nwaizugbo, 2020:33). Food consumption plays an integral role in society as it provides the consumer with environmentally sustainable options (Siragusa & Tumino, 2021:1). An individual's clothing choices also form a significant part of their expression (Gwozdz, Nielsen & Muller, 2017:1). Niinimäki (2009:3) reports the definition of green clothing to involve clothing designed for long-term usage, involves locally produced items, and brings about minimal harmful environmental consequences. Consumers exhibit specific sustainable fashion practices, including avoiding fast fashion, purchasing second-hand clothing, collaborative clothing consumption and discarding behaviour (Mukendi, Davies, McDonagh & Glozer, 2020:24). Thus, collaborative consumption involves the lending and sharing of items as a form of environmental and clothing sustainability (Adrami & Stock, 2019:11). Ricchetti and De Palma (2020) allege that the COVID-19 pandemic and the resulting economic shutdowns have created unprecedented challenges for the fashion and clothing industry, among other declining consumer spending and disrupted supply chains. This scenario may fast-track the shift to greener and more sustainable supply chains, which will impact consumer buying behaviour and these industries as a whole.

5. Research Methodology

5.1. Research paradigm

It is noted by Zukauskas, Vveinhardt and Andruikaitiene (2018:123) that three types of research philosophies exist, namely positivism, interpretivism and realism. According to Rahman (2017:106), quantitative research methodology is established by utilising a positivist research philosophy. Daniel (2016:92) contends that interpretivism and realism is related to qualitative research and positivism is associated with a quantitative research methodology. For the purpose of this study a positivistic approach was utilised as it is most appropriate for quantitative data collection. Therefore, the positivist philosophy ensured reliable and consistent data is provided by the respondents of the study.

5.2. Research approach

According to Struwig and Stead (2013:6), several methods could be used for the collection of quantitative data such as exploratory, descriptive, experimental and quasi-experimental research that can be utilised to solve the research problem. For the purposes of this study, a descriptive and exploratory research approach was used to gather data from consumers in Nelson Mandela Bay. The aim was to explore a relatively new topic with limited research in this field of study as well as to describe the perceptions of respondents regarding the impact of the COVID-19 pandemic on consumer sustainability and greening practices in Nelson Mandela Bay.

5.3. Population and sampling

A research population is made up of people, events and records that contain necessary data and information that can be used to answer measurement questions (Cooper & Schindler, 2014). A sample is a subset of the population that can be used to come to a general conclusion of the population based on the findings of the sample group. For the purpose of this study, the population was regarded as all consumers within Nelson Mandela Bay. As there is no database available of all these consumers within the designated population, use was made of non-probability sampling. Use was made of convenience sampling (consumers available and accessible), judgemental sampling (selected based on the opinion of an expert) and snowball sampling (referral by respondents to other possible respondents).

5.4. Data collection

5.4.1. Secondary research

A comprehensive literature review was conducted by collecting data of pre-existing data by another researcher to solve the problem statement (Brynard, Hanekom & Brynard, 2014:38). For the purposes

of this study, secondary data was collected from credible sources, such as internet journals, web documents and textbooks and from international databases such as Emerald and Sabinet.

5.4.2. Primary research

Primary data is defined by Struwig and Stead (2013:82) as the collection of new data which involves collecting data to solve the research problem at hand utilising procedures relevant to the research problem. Primary data was collected by means of a survey using structured self-administered questionnaires. Questionnaires were distributed both by hand to respondents (family, friends and colleagues) and due to pandemic conditions, most questionnaires were distributed online via email to respondents as well as through the Google Forms platform. Where questionnaires were hand-delivered, field workers ensured that COVID-19 protocols were adhered to (e.g. wearing of face masks, social distancing and the use of hand sanitizers). Questionnaires were distributed online mainly by means of referrals as no online database was available. A total of 275 questionnaires were distributed to respondents within the designated population. A total of 202 usable questionnaires were obtained (effective response rate of 73%).

5.5. Questionnaire design

For the purpose of achieving the objectives of this study, a questionnaire was designed to obtain primary data from consumers in Nelson Mandela Bay. The research was undertaken by utilising a self-administered structured questionnaire. The questionnaire used in this study consisted of a cover page and three sections.

To measure the consumers perception towards sustainability, green practices and the COVID-19 pandemic, a five-point Likert-type scale ranging from (1) strongly disagree to (5) strongly agree was used.

- Section A focused on the respondents' general perceptions regarding COVID-19, using a five-point Likert-type ordinal scale (10 statements).
- Section B focused on gathering data about the respondents' perceptions regarding consumer sustainability and greening practices using a five-point Likert-type ordinal scale (20 statements).
- Section C gathered data regarding the demographics of respondents, using a nominal scale (seven statements).

As no previous measuring instruments could be found and it is a relatively new field (COVID-19), the items or variables were mainly self-constructed based on the extensive literature study.

5.6. Data analysis

Data analysis is used as a tool to discover useful information based on the gathered data to make conclusions and formulate recommendations (Struwig & Stead, 2013). The process involves reducing collected data to a manageable size, which then allows the researcher to develop summaries and apply statistical techniques (Cooper & Schindler, 2014:86). During this phase, raw data is converted into useful information. The first phase of the data analysis process was the collection and organising of the data. The quantitative data was transferred to a Microsoft Excel spreadsheet and analysed by means of a computer programme, Statistica. The use of descriptive statistics was utilised in order to analyse the collected data. These statistics included measures of central tendency (e.g. mean, mode, median) and measure of dispersion (e.g. standard deviation) as well as frequency distributions (percentages). Face and content validity were ensured by means of expert judgement of researchers in the field of greening, marketing and statistics, conducting a pilot study among 10 consumers within the designated population and a comprehensive literature study on greening and sustainability practices. Finally, the data was interpreted, and conclusions and recommendations were provided based on these findings.

5.7. Ethical considerations

The research adhered to the requirements set out by the Nelson Mandela University’s Research Ethics Committee (Humans). The research gathered was confidential, anonymous, and voluntary. Ethical clearance from the Department of Business Management was obtained by means of a Form E (ethical clearance form). Participation from respondents was entirely voluntary, respondents remained anonymous and could withdraw from the study at any time.

6. Results and Findings

6.1. Demographical profile of respondents

Table 1 represents the demographical profile of the respondents.

Table 1: Summary of biographical information (Section C)

Characteristic	Category	%
Age	18-25	25
	26-40	33
	41-50	18
	51-60	13
	60+	11
Gender	Female	61
	Male	39
Highest qualification obtained	Grade 11 and lower	2
	Grade 12	22
	National diploma or certificate	19
	Bachelor’s degree	26
	Postgraduate degree/diploma	31
Current employment status	Student	21
	Unemployed	6
	Retired	1
	Employed Full-time	66
	Employed Part-time	6
Frequency of shopping in general	Once a month	18
	Twice a month	16
	Three times a month	22
	Once a week	32
	Every second day	8
	Every day	4

Source: Own compilation

Table 1 shows that 33% of the respondents fall within the 26-40 age group category whilst 25% are within the 18-25 age group. The majority of the respondents are females (61%) whilst 39% were males. In terms of highest qualification obtained, the majority had a national diploma/certificate or bachelor’s degree (45%), whilst 31% had a postgraduate degree/diploma. The majority of the respondents (66%) indicated their current employment status as being full-time employed and 21% were students. To establish the shopping behaviour of respondents in terms of frequency of shopping during the pandemic, 34% indicated that they only shop once or twice a week, 32% indicated that they only visit a retail store once a week and 22% shopped three times a month. Only 4% shopped every

day. It should be noted that the empirical study was conducted during the third wave of the COVID-19 pandemic.

6.2. Frequency distribution results for the type of zero-waste purchases

Table 2 depicts the zero-waste purchases the respondents were most likely to engage with.

Table 2: Zero waste purchasing of respondents

Type of shopping item	Category	Percentage
Fruit	No	53
	Yes	47
Vegetables	No	58
	Yes	42
Meat	No	67
	Yes	33
Cheese	No	92
	Yes	8
Grains	No	92
	Yes	8
Beauty Products	No	83
	Yes	17
Cleaning Products	No	89
	Yes	11
Stationary	No	96
	Yes	4
Packaging	No	84
	Yes	16

Source: Own compilation

Table 2 depicts the zero waste products the respondents most frequently engaged with. According to Good (2015), zero waste shopping is concerned with the elimination of all unnecessary waste during an individual's shopping experience. Based on the empirical results it appears that consumers engaged in zero waste shopping, mostly in terms of buying fruit (47%), vegetables (42%) and meat (33%). Although consumers engaged in zero waste shopping, many retail outlets did not allow the use of reusable containers and the items were pre-packed in plastic containers (Wiefek, Steinhorst & Beyerl, 2021). The purchase of products that are sourced locally and purchasing only what is needed in order to prevent unnecessary waste use during a pandemic were also advocated by Chang (2021) and Guarany (2018).

6.3 Frequency distribution results for waste hierarchy activities and practices

Table 3 depicts the respondents' participation in waste hierarchy activities and practices.

Table 3: Waste hierarchy practices of respondents during the pandemic

Waste hierarchy activity	Category	Percentage
Reduce	No	44
	Yes	56
Reuse	No	49

	Yes	51
Recycle	No	61
	Yes	39
None	Yes	25

Source: Own compilation

Table 3 illustrates that 56% of the respondents practice activities that reduce waste and 51% of respondents reuse waste. It was noted that only 39% participate in recycling activities, whilst 25% of the respondents indicated that they did not participate in any of these three waste management practices. This is supported by Reddy (2010) and Makgae (2011) who stated that waste minimisation involves a number of processes, mechanisms and stakeholders in the production, marketing, packaging, selling and consumption of goods that produce waste at all stages of the consumption cycle and all role players should ensure that waste can be reduced through effective waste minimisation. Sarkodie and Owusu (2020) allege that efficient waste management during the COVID-19 pandemic is paramount and failure to effectively manage waste generated by households could escalate the spread of COVID-19 via secondary transmissions.

6.4 Descriptive statistics relating to the general perceptions regarding the COVID-19 pandemic (Section A)

Table 4 illustrates descriptive statistics relating to the general perceptions regarding the COVID-19 pandemic, indicating the mean, standard deviation and frequency distribution results for the 12 statements. A five-point Likert type ordinal scale was used. For purposes of analysis and discussion of the frequency distributions, point one and two are used for disagreeing, point three (neutral) and point four and five for agreeing with the statements. The scales were based on an extensive literature review and included aspects, among other, such as:

- The COVID-19 pandemic has influenced and changed lives on a global scale since its emergence.
- The perceived risks posed by COVID-19 is considerable and severe for many consumers and households.
- Ignorance and non-compliance regarding health and safety protocols are the main contributors for spreading the virus.
- The COVID-19 lockdown has forced people to increase technology use.

Full disclosure of all items is not possible due to intellectual property rights of the measuring instrument by the authors and confined length of the paper. Some aspects are however further covered and dealt with in the recommendation and implication sections of this paper.

Table 4: Results of general perceptions regarding the COVID-19 pandemic

Statement	Mean	Standard Deviation	% Agree	% Neutral	% Disagree
A1	4.44	0.99	92	3	5
A2	3.99	1.17	82	7	11
A3	3.69	1.09	84	8	8
A4	4.43	1.02	93	2	5
A5	4.21	1.19	88	4	8
A6	3.74	0.93	71	23	6
A7	2.87	1.09	26	24	50
A8	3.52	1.13	41	30	29
A9	4.26	0.79	76	12	12

Statement	Mean	Standard Deviation	% Agree	% Neutral	% Disagree
A10	4.70	0.74	98	1	1
A11	4.13	0.97	78	16	6
A12	4.81	0.83	95	3	2
Overall	4.17	0.99			

Source: Own compilation

Table 4 clearly shows that the overall mean score of 4.17 indicates that mean values cluster around point four, showing that respondents tend to agree with the general perceptions regarding the COVID-19 pandemic (Section A). The highest mean score was obtained for A12 (4.81) indicating that respondents agree strongly that the COVID-19 lockdown has forced people to increase the use of technology (e.g., online shopping). The lowest mean scores indicating some form of neutrality (2.87 and 3.52) were obtained for A7 (effectiveness of interventions by the government were being adequately performed) and A8 (there is social discrimination and stigma in some communities regarding people infected with the virus) respectively. The overall standard deviation score of 0.99 indicates that there was not too much variability among the mean scores. The highest individual standard deviation score, however, was obtained by A5 (1.19), indicating some variability that ignorance and non-compliance regarding health and safety protocols are the main contributors for spreading the virus. The following sections will analyse descriptive statistics and frequency distribution results relating to the general perceptions of the impact of COVID-19 on consumer greening and sustainability practices (Section B).

6.5. Results regarding the impact of COVID-19 on consumer green practices (Section B)

The statements in Section B of the questionnaire relate to the impact of COVID-19 on consumer greening practices such as health, food and clothing, transport and travelling and waste management. Some of these items are highlighted in the discussion below as well as in the recommendation and implication section.

6.5.1. Descriptive statistics and frequency distribution results regarding the impact on health practices

Statements B1-B3 in Table 5 represent the respondents' general perceptions regarding sustainable health practices undertaken during the pandemic.

Table 5: Results of general perceptions regarding sustainable health practices

Statement	Mean	Standard Deviation	% Agree	% Neutral	% Disagree
B1	4.17	0.76	78	18	4
B2	3.60	0.80	58	30	12
B3	3.29	0.87	48	32	20
Overall	3.68	0.81			

Source: Own compilation.

The overall mean score of 3.68 for the statements regarding the impact of COVID-19 on consumers' sustainable health practices indicates that the data falls within the "agree range". The highest mean score was obtained by B1 (4.17) showing that respondents agree that maintaining a sustainable lifestyle due to health and wellness concerns is paramount during the pandemic. The overall standard deviation score (0.81) implies no significant variation around the mean score of these statements. Twenty percent of the respondents disagreed with statement B3 that they are switching to increased consumption of organic foods because of health concerns. These findings are supported by PWC (2021) and Cordina, Levin, Ramish and Seshan (2021) stating that changes in consumer behaviour,

many of which were accelerated by the COVID-19 pandemic, are fuelling a redesign of the health system and potentially affecting the way that consumers approach healthcare.

6.5.2. Descriptive statistics and frequency distribution results regarding the impact on waste management practices

Table 6 depicts the descriptive statistics relating to the general perceptions regarding household waste management practices.

Table 6: Results of general perceptions regarding waste management practices

Statement	Mean	Standard Deviation	% Agree	% Neutral	% Disagree
B4	3.58	0.83	64	22	14
B5	3.86	0.79	73	19	8
B6	3.42	0.87	62	16	22
B7	3.21	0.99	49	24	27
Overall	3.52	0.87			

Source: Own compilation.

Statements B4-B7 relate to the consumers general perceptions regarding the impact of COVID-19 on waste management practices. The overall mean score of 3.52 indicates that the responses tend to cluster around neutral. The highest mean score was for B5 (3.86) indicating that respondents tend to agree that they dispose of all hazardous waste (chemical, medical, and other harmful waste) in the manner prescribed. The overall standard deviation score of 0.87 indicates that there was not much variability around the mean scores. Twenty-seven percent of the respondents disagreed with statement B7 that they are making a habit of taking recyclable goods to recycling facilities. These findings are supported by Roe, Bender and Qi (2020:401) and Pappalardo, Cerroni, Nayga and Yang (2020), alleging that perhaps no phenomenon has so quickly and radically altered household production parameters, daily food patterns and waste management as the onset of the COVID-19 pandemic.

6.5.3. Descriptive statistics and frequency distribution results regarding the impact on environmental sustainability

Table 7 illustrates the results of the descriptive statistics and frequency distribution results relating to the general perceptions regarding environmentally sustainable practices.

Table 7: Results of general perceptions regarding environmental sustainability practices

Statement	Mean	Standard Deviation	% Agree	% Neutral	% Disagree
B8	3.29	0.99	58	23	19
B9	3.84	0.87	75	11	14
B10	3.36	0.78	46	27	27
B11	4.02	0.90	80	16	4
Overall	3.62	0.89			

Source: Own compilation.

Statements B8-B11 relate to the consumers general perceptions regarding their participation in environmentally sustainable practices during the pandemic. The overall mean of the data set (3.62) indicates that the data lies within the “neutral” range of the five-point Likert scale. The highest mean score was obtained by B11 (4.02), indicating that the majority of respondents tend to agree that they are attempting to conserve more water at home (e.g., showering, making food, cleaning, etc.), despite that fact that more handwashing and other water related hygiene practices takes place during the

pandemic. Twenty seven percent of the respondents disagreed with statement B10 that they are engaging more in the purchase of home energy-efficient appliances and other energy-saving products during the pandemic. The standard deviation score of 0.89 implies that there is not much variability around the mean scores. These results are in line with Holbrook (2021) and MasterCard.com (2021) stating that the pandemic has elevated consumers' focus on sustainability and believe it's more important to reduce their own carbon footprint.

6.5.4. Descriptive statistics and frequency distribution results regarding the impact on sustainable transport and travel

Table 8 shows the descriptive statistics and frequency distribution results relating to the general perceptions regarding the sustainable transport and travel practices undertaken by the respondents during the pandemic.

Table 8: Results of general perceptions regarding sustainable transport and travel practices

Statement	Mean	Standard Deviation	% Agree	% Neutral	% Disagree
B12	2.99	0.79	85	9	6
B13	4.21	0.95	46	29	25
B14	2.76	0.99	34	17	49
Overall	3.32	0.91			

Source: Own compilation

Statements B12-B14 relate to the consumers general perceptions regarding sustainable transport and travel practices during the pandemic. The overall mean score of 3.32 indicates the values cluster around the neutral range. The highest mean score was obtained by B13 (4.21) showing that respondents agreed that they have changed their air travelling habits, especially for leisure purposes. The overall standard deviation score of 0.91 indicates that there not much deviation around the mean scores. Almost half of the respondents (49%) indicated that they disagreed with statement B14 that they are making use of shared travelling as to reduce traffic congestion and costs. The novel coronavirus pandemic (COVID-19) has adversely affected domestic and international tourism and travelling habits. These findings are supported by Abdullah, Dias, Muley and Shahin (2020) and Chen, Duan, Ali, Duan and Ryu (2021) and state that trip purpose, mode choice, distance travelled, and frequency of trips for primary travelling were significantly different before and during the pandemic. People placed a higher priority on the pandemic related concerns while choosing a mode during the pandemic as compared to their general concerns.

6.5.5. Descriptive statistics and frequency distribution results regarding the impact on sustainable food and clothing

Statements B15-B20 in Table 9 relate to the consumers general perceptions regarding sustainable food and clothing practices.

Table 9: Results of general perceptions regarding sustainable food and clothing practices

Statement	Mean	Standard Deviation	% Agree	% Neutral	% Disagree
B15	2.99	0.89	29	37	34
B16	4.21	0.63	85	13	2
B17	3.36	0.75	46	33	21
B18	3.88	0.89	73	14	13
B19	3.89	0.83	68	21	11
B20	3.84	0.85	67	18	15

Statement	Mean	Standard Deviation	% Agree	% Neutral	% Disagree
Overall	3.68	0.81			

Source: Own compilation

The overall mean score of 3.68 indicates that majority of the respondents tend to agree with most of these statements. The highest mean score was obtained by B16 (4.21) indicating that respondents are of the opinion that new digital technologies and retailing platforms have been fueling online shopping during the pandemic. Neutral perceptions were obtained by B15 (preferring to purchase clothes from sustainable brands) and B17 (ensuring access to high quality, reliable information about the environmental characteristics of products purchased). The overall standard deviation score of 0.81 shows that there was not much variability around the mean scores of these variables. These findings are supported by Picchioni, Po, and Forsythe (2021) and the UN Environment Programme (2020) alleging that the COVID-19 pandemic has brought many challenges to the fashion/clothing industry but also created an opportunity to step back and consider their impact on the planet and environment. Environmental concerns have also become integral to the sustainable food systems agenda.

7. Recommendations and managerial implications

Based on the findings and conclusions of this study, the recommendations and guidelines are outlined below. These are also linked to the statements in Section A and B of the measuring instrument.

7.1 General perceptions regarding the COVID-19 pandemic

Based on the respondents' general perceptions regarding the COVID-19 pandemic, consumers should:

- Recognise that the outbreak of COVID-19 has been a major interrupting event, challenging how consumers engage in shopping behaviour.
- Realise that an essential determinant of the spread of the virus is a series of small-scale individual consumer decisions.
- Recognise that COVID-19 has a rapid spread with a high transmission rate leading to substantial deaths world-wide.
- Be aware that people with low immunity, elder people and those with comorbidities are more at risk.
- View ignorance and non-compliance regarding health and safety protocols as the main contributors for spreading the virus.
- Support government interventions to manage the spread of the virus.
- Recognise that the pandemic has influenced and changed lives on a global scale since its emergence.
- Be provided educational programs about COVID-19 as this could increase awareness and improve infection control and prevention.

7.2. General perceptions regarding the impact of COVID-19 on consumer sustainable and greening practices

Table 10 outlines some general recommendations regarding sustainable and greening practices of consumers during the pandemic.

Table 10: General guidelines regarding consumer sustainable and greening practices

Regarding sustainable health practices, consumers should be	
1	Looking to maintain a sustainable lifestyle due to health and wellness concerns.
2	More health conscious and looking to buy more locally grown food items.
3	Switching to increased consumption of organic foods because of health concerns.

Regarding waste management practices, consumers should be...	
4	Aware of their actions on the environment and engaged in various household waste management initiatives.
5	Disposing of all hazardous waste (chemical, medical, and other harmful waste) in the manner prescribed.
6	Purchasing items in bulk or as refills in order to reduce packaging waste.
7	Making a habit of taking recyclable goods to recycling facilities.
Regarding environmentally sustainable practices, consumers should be ...	
8	Adopting green and eco-friendly practices in their household to improve environmental sustainability.
9	Reducing their consumption of single-use plastic to help save the environment.
10	Engaging more in the purchase of home energy-efficient appliances and products.
11	Attempting to conserve more water at home (e.g. showering, making food, cleaning, etc.).
Regarding sustainable transport and travel practices, consumers should be ...	
12	Understanding that working remotely from home has decreased air pollution as there is less public and private vehicle travelling.
13	Changing their air travelling habits, especially for leisure purposes.
14	Making use of shared travelling as to reduce traffic congestion and costs.
Regarding sustainable food and clothing practices, consumers should be ...	
15	Preferring to purchase clothes from sustainable brands.
16	Understanding that new digital technologies and retailing platforms have been fueling online shopping.
17	Ensuring access to high quality, reliable information about the environmental characteristics of products purchased.
18	Shifting toward at-home cooking and make use of meal delivery services.
19	Of the opinion that home-cooked meals have lower environmental impacts than processed foods.
20	Re-evaluating their eating-out habits and visiting restaurants.

Source: Own compilation

8. Conclusion

The COVID-19 pandemic has had unexpected global ramifications for the market environment, consumers and on social life in general (Končar, Grubor, Marić, Vučenović, & Vukmirović, 2020: 4). According to Jian, Yu, Yang and Zeng (2020:1), consumers adapted their values and behavioural patterns in order to cope with the anxiety induced by the pandemic. As a result, various product sustainability indicators were created for customers such as financial or economic, environmental and social performance. However, it is still unknown which characteristics consumers value more during green purchasing (e.g. reduced or zero carbon footprint, use of less resources, recyclability, eco-friendly packaging etc.) (Shao & Ůnal, 2019). The objective of greening is to help preserve the environment while also creating non-productive value (e.g. less defective equipment or less delays or interruptions) (Świtek & Sawinska, 2017:275).

The main conclusions to be drawn from the study in terms of the impact of COVID-19 on consumer greening and sustainability practices were:

- *Sustainable health practices*

Sustainable health practices are regarded as practices that promote a sustainable lifestyle and includes the purchase of organic foods and locally produced goods. According to Dey (2021), the COVID-19 pandemic had a productive outcome on sustainable lifestyles, as a consequence of the incontrovertible shifts in consumer purchasing patterns, which include organic and natural products, and excludes excessive purchasing of luxury products. Organic products are those products that consumers purchase to restrict harmful consequences on the environment. Locally produced products minimize energy utilization in the production process as less travelling and transportation are involved thus reducing carbon dioxide emissions that likely contribute to global warming. Overall, it appears that respondents tended to adopt sustainable health practices during a pandemic. However, the majority of the respondents were neutral or disagreed that they have switched to increased consumption of organic foods because of increased health concerns.

- *Waste management practices*

Choshaly (2016:54) and Umar, Sehab and Yagnik (2018:58) established that waste management practices consist of principles such as reduce, reuse and recycle activities. In a study conducted by the United Nations Environmental Programme (2020:9), it was reported that the COVID-19 pandemic has introduced several challenges in the management of waste, including increases in the volume of plastic waste, resulting from lockdown restrictions and activities, increases in littering and restrictions in recycling. It is further reported by Sarkodie and Owusa (2021:7952) that the national lockdown has caused a radical increase in the production of waste due to household waste activities involving protective personal equipment. Overall, it appears that respondents are neutral towards these waste management practices, especially of making a habit of taking recyclable goods to recycling facilities.

- *Environmental sustainability*

Environmental sustainability involves a process that authorises humans to consider their basic needs while maintaining the state of the environment, including eco-friendly practices, reducing plastic waste, the consumption of energy-efficient appliances and the conservation of water (Morelli, 2011:15). The COVID-19 pandemic has affected household energy consumption due to work-from-home policies and the national lockdown as consumers and employees were forced to stay at home and use their own energy and water resources. Bomey (2020) also contends that an increase in single-use plastic waste and medical waste has occurred during the pandemic. Excess of medical waste, need for proper personal protection equipment, surge in online food delivery and shopping, and the ban on reusable bags have led to increased plastic pollution during COVID-19 pandemic. Overall, it appears that respondents agreed with the statements regarding environmental sustainability during the pandemic, especially attempting to conserve more water at home when showering, making food and cleaning while being forced to be at home during the lockdown or working from home.

- *Sustainable transport and travel*

During the pandemic, work-from-home policies, shared transportation and declined levels of air travel resulted in decreased greenhouse gas emissions. Sung and Monschaur (2020) and Vetter (2020) contend that the lack of vehicle mobility and public transport were substantially affected by the national lockdowns. Most of the respondents appeared to be neutral in their responses regarding sustainable transport and travel practices during the pandemic. However, they felt strongly and agreed that they have changed their air travelling habits, especially for leisure purposes as it was restricted during the lockdowns. Working remotely from home has also decreased air pollution as there is less public and private vehicle travelling.

- *Sustainable food and clothing*

Consumer's food choices are significant determinants of the state of the environment. Ifeanyi-chukwa and Nwazingo (2020:33) defined sustainable food choices as the consumption of food and dietary products that satisfy dietary needs of humans and the environment. Sustainable eating thus involves foods that provide a balanced diet for the body but also facilitate the conservation of the environment.

At-home cooking meals have lessened negative impacts on the environment. Green clothing includes the consumption of clothing choices that exhibit long-term usage, is locally produced and environmentally sustainable. Environmentally aware consumers undertake sustainable clothing practices by participating in activities that avoid fast fashion, collaborative clothing and discarding measures (Mukendi et al., 2020:24). Overall, it appears that respondents agreed with sustainable food and clothing practices during a pandemic. Strong sentiments were expressed that new digital technologies and retailing platforms have been fuelling online shopping during the pandemic. Neutral perceptions were obtained regarding preferring to purchase clothes from sustainable brands. The pandemic has thus impacted on the eating habits of consumers (e.g. preference for locally produced products, online convenience shopping, eating out at restaurants and home-cooked meals) and the type of clothing that was worn (e.g. less formal office wear).

The following extract seems appropriate to conclude this paper with:

“Consumption has lately been under the microscope facing pressure from all stakeholders as principles of sustainability have gained more popularity ... major shifts in buying and consumption habits. This was shaken up by the COVID-19 outbreak that forced consumers to rethink every aspect of their lives... people’s lives dominated by the pandemic by uncertainty, especially when referring to their financial situation... insecurities caused by COVID-19 will determine consumers’ reassessment of their values, together with embracing new consumption habits. Among the most important shifts, were more prudent purchase decisions, rising interest for discounted prices, increased likelihood of buying local and enhanced preference in buy fresh products instead of processed or semi-processed ones” (Orîndaru, Popescu, Căescu, Botezatu, Florescu, & Runceanu-Albu, 2021).

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(Recognition is hereby given to Ms RL Davis, S Mhlantla, B Ngowapi and K MacDonald for conducting the empirical part of this study)

Retail Employee Perceptions Regarding Customer Loyalty Programmes

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Keywords

customer loyalty programmes;
customer loyalty;
business performance

Abstract

Customer loyalty programmes are often used by businesses to assist in increasing customer loyalty levels. Despite the existent research on customer loyalty, there is limited research on South African retailers' loyalty programmes and how it can contribute to these businesses' performance. The primary objective of this study is to determine what customers seek from customer loyalty programmes in order to become loyal customers, and how this ultimately influences business performance. The purpose is to identify the antecedents of customer loyalty programmes, to determine how these antecedents influence customer loyalty and to test the relationship between customer loyalty and business performance. This study uniquely conducts the research from retail employees' views. A hypothetical model was constructed based on a comprehensive literature study. The empirical investigation gathered responses through a structure questionnaire and the statistical analyses revealed five significant antecedents of customer loyalty programmes, namely customer satisfaction, communication, commitment, switching cost and trusting image. In addition, the study's results support the significant, positive relationship between retailers' customer loyalty and business performance. The study presents practical strategies as recommendations to South African retailers regarding their customer loyalty programmes, with the aim towards increased customer loyalty and improved business performance.

1. Introduction

Businesses provide customers with need satisfying products and services in exchange for some form of payment from the customer. In addition, businesses aim to improve their business performance on a continuous basis (Krutz & Berson 2019:2-3). In order to improve business performance, businesses can focus on increasing sales by means of retaining current customers and by increasing their customer base (Soltani, Zareie, Milani & Naimpour 2018:237). Therefore, it is important for businesses to retain and expand their customer base through the focus of creating customer loyalty. According to the Market Research Report (2022), the market size of the global loyalty management market was US\$4.54 billion (approximately R72.31 billion) in 2021. The global loyalty management market is, however, expected to grow by 23.5% over the period 2022 (US\$5.57 billion; R88.71 billion) to 2029 (US\$24.44 billion; R389.24 billion) (Market Research Report 2022). The report also noted that 45% of United States of America (USA) consumers changed their brand preferences during Covid-19. The State of Loyalty in 2021 report (2021) highlighted that more than 75% of the consumers in the USA changed their shopping behaviour, including changing brands, since the outbreak of Covid-19. This brand preference change therefore provides an opportunity for businesses towards gaining new customers as well as creating and increasing customer loyalty.

Previous research found that the adoption of customer loyalty programmes is increasing (Thompson & Tuzovic 2020:215). Considering the loyalty market in South Africa, it is reported that in 2019 72% of the economically active South Africans used loyalty programmes, slightly lower than the 75% in

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2018 (The 2019/2020 South Africa Loyalty Landscape 2021). The main reason cited for the decline was the tough economic conditions resulting in customers spending less and therefore using the loyalty programmes less. According to the 2021 Truth & BrandMapp Loyalty Whitepaper (2021), the loyalty programme usage increased during 2021 to 74%. The reasons posed for this increase is that more males are using loyalty programmes and at a higher rate than females while working from home during lockdown. However, a number of reasons are provided for consumers not belonging to any loyalty programmes, such as: not being interested in loyalty programmes, loyalty programmes being too difficult to understand, not spending enough to earn rewards and the difficulty to redeem points or rewards, too much personal information being requested and preferring not to carry loyalty cards (Truth & BrandMapp Loyalty Whitepaper 2021).

The above shows changes in customer loyalty over the years, and reveals that research was mainly done from customers' viewpoints. Indeed, research (Wang, Singh, Li, Mishra, Ambrose & Biernert 2017:122) provides evidence that the intensity displayed by, and the authenticity of a business' employees, positively influence customers' behaviour towards the business. Employees will only display positive intensity and be genuinely authentic if they value the business. Furthermore, a retail sector study by Smith, Sparks, Hart and Tzokas (2004:202) recommends further research regarding employee dimensions towards the increase of customer loyalty. It is therefore important to determine employees' perceptions of the customer loyalty programmes offered by their businesses.

2. Problem Investigated

Retailers are important for South Africa's economic growth as retailers contribute approximately 20% to the South African GDP (Botha 2022). During the first 4 months of 2022, the retail sales in South Africa increased by 2.9% (Trading Economics 2022), although the trading levels are still below those recorded pre-Covid (Botha 2022). As stated by Botha (2022), with high unemployment rates it will also be challenging for retailers to achieve pre-Covid sales. With the increased cost of traveling to retailers, consumers are taking advantage of discounts, coupons and members' only rewards (Shouse 2022). In addition, Shouse (2022) highlights that 43% of customers of chain stores select a specific retailer as a result of the loyalty programmes offered while more than 70% of the customers visit the retailers where they are loyalty programme members. Retailers should therefore make extensive use of their loyalty programmes to retain customers and to increase their customer base. Furthermore, as employees engage with customers on behalf of a business (Wang et al. 2017), employees may have insight into what customers may perceive as important when offering customer loyalty programmes.

Based on the preceding discussion, and since it is evident why customers often do not want to belong to a loyalty programme, the question that can be asked is, what will entice customers to belong to a retailer's loyalty programme? Since employees engage with customers, employees can shed light on what is important for customers to include in a customer loyalty programme. Previous research on customer loyalty (Singh, Singh & Vij 2017; Singh, Nayyar & Das 2019; Singh, Slack, Sharma, Mudalier, Narayan, Kaur & Sharma 2021; Wang, et al. 2017; Willys 2018) gathered customers' views. The focus of this study, however, is on the perceptions of employees. Therefore, the question guiding this study is:

Which factors from the employee's perspective will entice customers to use a customer loyalty programme and become loyal customers, to ultimately improve business performance of South African retailers?

3. Research Objectives

The primary objective of this study was to determine from an employee's perspective what customers seek from customer loyalty programmes to become loyal customers, and how this will ultimately influence business performance. Therefore, it is important to identify the antecedents of customer loyalty programmes, to determine how these antecedents influence customer loyalty and to test the relationship between customer loyalty and business performance in the South African retail context. The main research question can thus be formulated as:

What are the antecedents of customer loyalty programmes that influence customer loyalty and ultimately business performance in the South African retail context from an employee perspective?

4. Literature Review and Hypotheses

Since this study is concerned with retailers' business performance and how these businesses' loyalty programmes can assist in ensuring loyal customers to ultimately improve business performance, the following sub-sections elaborate on these concepts.

4.1. Business Performance

Various definitions of business performance exist as the definition is dependent on the purpose of business performance. Business performance metrics can take on a number of forms, such as sales and profitability (Belli, O'Rourke, Carrillat, Pupovac, Melnyk & Napolova 2022:150). Furthermore, Choo and Lee (2018:127) emphasise that business performance can be measured from both a financial and non-financial perspective. Financial performance is an indication of the financial health of the business (Rashid, Nurunnabi, Rahman & Masud 2020:6). For the purpose of this study, business performance is measured using financial (such as sales growth, cost reduction and productivity) and non-financial metrics (such as employee turnover rate and growth in number of employees).

A study by Singh et al. (2019) highlights that literature identified customer loyalty as a key driver for business performance, while Belli et al. (2021:148) state that a loyal customer base is regarded as a valuable asset to a business. Rashid et al. (2020:1) are in agreement by stating that profitability (a measure of business performance) is important for businesses, with customer loyalty being a major contributor to profitability. In addition, the study found that customer loyalty significantly influences business performance (Singh et al. 2019) as economic success is based on the ability of a business to create long-term relationships with customers making repeat purchases (Famarzi & Bhattacharya 2021:313).

4.2. Customer Loyalty

Customer loyalty is described as the consistent repeat purchase of products and services favouring a specific business that is based on the customer's previous experiences and future expectations (Kim, Steinhoff & Palmieter 2021:74; Kwiatak, Morgan & Thanasi-Boçe 2020:1647; Mokhtar & Shamsudin 2020). When considering customer loyalty, it is important to realise that customer loyalty relates to communication with existing customers, customer loyalty programmes; and it is relevant to consider how customer loyalty can be used to improve business performance (Arslan 2020:18). In addition, offering incentives attracts customers by creating customer attention that can lead to customer loyalty (Mokhtar & Shamsudin 2020). As stated by Gu, Luan, Song and Shang (2021:629), businesses that invested in providing rewards to customers reaped the benefit of an increase in profits. Although customer loyalty is a multidimensional construct comprising of attitudes, intentions and behaviours, this study only considers behavioural customer loyalty (Belli et al. 2022:149). Behavioural loyalty is the behavioural patterns of consumers when purchasing the selected product or service on a consistent basis, or alternatively, it refers to changes in the actual or intended behaviour of the consumers towards the loyalty programme provider (Belli et al. 2022:150, 152).

One of the tools that businesses can use to create or enhance customer loyalty significantly is through the use of customer loyalty programmes (Belli et al. 2022:149; He, Tain & Wang 2019:807; Kwiatak et al. 2020:1646). Therefore, it is important to consider the possible antecedents of customer loyalty programmes which can be linked to or regarded as the antecedents of customer loyalty, although there is no consensus on the antecedents of customer loyalty (Singh et al. 2019).

4.3. Possible antecedents of Customer Loyalty Programmes

A customer loyalty programme is described as a rewards programme offered by a business to customers who frequently make purchases from the business over time (Gu, Luan, Song & Shang 2021:623; He, Tian & Wang 2019:807). Therefore, the purpose of a customer loyalty programme is to increase sales and also to create a relationship between the business and existing customers (Arslan 2020:17). In addition, customer loyalty programmes offer customers additional value over and above the actual value spent (Kwiatak et al. 2020:1645) as its members receive more in return than what

they paid for, for example through special discounts. Furthermore, a study by Chaudhuri, Voorhees and Beck (2019:653) found that customer loyalty programmes have a direct influence on sales and profits, that is business performance from a financial perspective.

The antecedents of customer loyalty programmes, as confirmed by Singh et al. (2019), are customer satisfaction (Ilyas, Munir, Tamsah, Mustafa & Yusriadi 2021; Singh et al. 2017:238; Xhema, Metin & Groumps 2018:288), communication (He et al. 2019:810; Xhema et al. 2018:288), commitment (Singh et al. 2017:238), switching costs (Xhema et al. 2018:288), trust (Singh et al. 2017:238; Singh et al. 2021:1754; Xhema et al. 2018:288), and image (Dam & Dam 2021; Singh et al. 2017:238; Singh et al. 2021:1754; Xhema et al. 2018:288). Since customer loyalty programmes are designed to create customer loyalty, these antecedents of customer loyalty programmes can be regarded as the antecedents of customer loyalty.

Customer satisfaction can be described as the measurement used to determine the happiness of customers with the products and services offered by a business (Mokhtar & Shamsudin 2020). Numerous studies found a significant positive relationship between customer satisfaction and customer loyalty in Vietnamese supermarkets (Dam & Dam 2021:591) and commercial banks (Nguyen, Pham, Tran & Pham 2020: 402), a car repair shop (Ilyas et al. 2021:12) and e-commerce retailer (Rizan, Febrillia, Wibowo & Pratiwi 2020:288) in Indonesia, retail banking in Ghana (Omorieg, Addae, Coffie, Ampomg & Ofori 2019:798), fast-food restaurants in Macedonia (Saneva & Chortoseva 2020:127), amongst mobile phone operators in Madagascar (Willys 2018:1031), and amongst communication service users in the Kurdistan region of Iraq (Demir, Budur & Heshmati 2021:68). Both the studies of Sing et al. (2017:239) and Karunaratna and Kumara (2018:59) propose that customer satisfaction significantly and positively influence customer loyalty. However, the study by Khairawati (2020:20) found no relationship between customer satisfaction and customer loyalty within a shopping retailer in Indonesia. Therefore, the following hypothesis is formulated:

H¹: There is a significant relationship between *Customer satisfaction* and *Customer loyalty*.

It is important for businesses to communicate accurate and timely information to their customers, including customer loyalty programme benefits, promotions and regulations (He et al. 2019:810). A study within the Nigerian banking industry found that marketing communication influences customer loyalty positively and significantly (Zephaniah, Ogba & Izogo 2020:6). Furthermore, the use of social media to communicate with customers also has a positive and significant influence on customer loyalty (Mohammed & Al-Swidi 2019:386). Lee and Salciuviene (2018:585) highlight that customer loyalty depends on the communication channel(s) businesses select. In addition, the study by Rashid et al. (2020:17) found that inadequate communication decreases customer loyalty. Based on the evidence, the following hypothesis is postulated:

H²: There is a significant relationship between *Communication* and *Customer loyalty*.

Commitment is defined as the economic, emotional and or psychological connections customers have with a specific business (Singh et al. 2017: 239; Thompson & Tuzovic 2020:210). A study amongst university students from five countries showed that commitment has a positive and significant relationship to customer loyalty (Thompson & Tuzovic 2020:215). In addition, Koo, Yu and Han (2019:6) found that commitment exerts a significant and positive influence on customer loyalty. A study by Singh et al. (2017:239) also proposes that there is a positive and significant relation between commitment and customer loyalty. Arslan (2020:14) states that disloyal customers are not committed to a business and therefore repurchase of products and services will not occur. Therefore, the following hypothesis is proposed:

H³: There is a significant relationship between *Commitment* and *Customer loyalty*.

Switching costs, that can be monetary or non-monetary, refer to the costs a customer will incur (or give up) when changing from one business to another (Demir et al. 2021:59; Singh et al. 2017:242;

Xhema et al. 2018:288). A study by Koo et al. (2019:6) revealed switching costs to be significantly and positively associated with customer loyalty and the same result is reported by Nguyen et al. (2020:402) amongst commercial banks in Vietnam. Arslan (2020:14) regarded replacement cost as an important factor influencing customer loyalty. The study by Xhema et al. (2018:290) shows that switching costs have a positive and significant influence on customer loyalty. The results of the study amongst mobile phone operators in Madagascar found partial support for the influence of switching costs on customer loyalty, with switching costs measured as procedural cost, financial cost and relational cost (Willys 2018:1027,1031). Karunaratna and Kumara (2018:59) postulated that a positive and significant relationship exists between switching costs and customer loyalty. A study by Demir et al. (2021:68), however, found that switching costs do not influence customer loyalty. Based in the previous discussion, the following hypothesis is postulated:

H⁴: There is a significant relationship between *Switching cost* and *Customer loyalty*.

Trust can be described as the perceived creditability of a business (Thompson & Tuzovic 2020:209). Mohktar and Shamsudin (2020) state that trust is important to achieve customer loyalty while Singh et al. (2017:241) as well as Karunaratna and Kumara (2018:59) postulate that trust positively and significantly influences customer loyalty. In addition, Arslan (2020:14) regards trust as one of the most important factors for customer loyalty. A study by Singh et al. (2021:1763) conducted amongst fast-food restaurants, and a study amongst university students (Thompson & Tuzovic 2020:215), found that trust has a significant positive influence on customer loyalty. Furthermore, a study within the retail banking industry in Ghana (Omoregie et al. 2019:798) found that trust positively influences customer loyalty. A study amongst communication service users in Iraq, however, found that trust does not influence customer loyalty (Demir et al. 2021:68). Therefore, the following hypothesis is put forward:

H⁵: There is a significant relationship between *Trust* and *Customer loyalty*.

As stated by Singh et al. (2017:241) and Demir et al. (2021:58), image is defined as the overall picture that customers have of a business and the actions of a business. Singh et al. (2017:241) as well as Karunaratna and Kumara (2018:59) postulated that there is a positive and significant relation between image and customer loyalty. Previous research found that image has a significant positive influence on customer loyalty within supermarkets in Vietnam (Dam & Dam 2021:591), fast-food restaurants in the Small Island Developing States (Singh et al. 2021:1763), a retail business in Kosovo (Xhema et al. 2018:290) and amongst communication service users in the Kurdistan region of Iraq (Demir et al. 2021:68). However, a study by Omoregie et al. (2019:798) within the Ghanaian retail banking industry found no significant influence of image on customer loyalty. The following hypothesis is formulated based on previous research:

H⁶: There is a significant relationship between *Image* and *Customer loyalty*.

Previous research has found that the use of customer loyalty programmes leads to customer loyalty (Curatman, Suroso & Suliunto 2021:9; Nettet, Bergem, Nervik, Sørli, & Helgesen 2021:7) and to customer retention (Duleepa & Fazila 2021:46; Elgarhy 2022:1). In addition, there are numerous studies providing empirically and anecdotal evidence of a relationship between customer loyalty and business performance (Omoregie et al. 2019:798). Arslan (2020:15) states that customer loyalty is an important factor that assists in improving profitability, a measure of business performance. A study amongst hotels in six countries in Western Europe found that customer loyalty significantly and positively influences business performance (Sampaio, Mogolón & Rodrigues 2019:137). In addition, Vierra, Agnihotri and Almeida (2022:208) found that customer loyalty is used by retailers to improve revenues by focusing on promoting different products with specific rewards for those products. A study amongst Islamic banks in Bangladesh found that customer loyalty has a positive influence on financial business performance (Rashid et al. 2020:17). Another study amongst a banking and life insurance business in five major cities in India showed that a significant and positive relationship

exists between customer loyalty and business performance. Based on previous research, the following hypothesis is postulated:

H⁷: There is a significant relationship between *Customer loyalty* and *Business performance*.

5. Hypothetical Model

Based on the literature review and the evidence from previous research, seven hypotheses were formulated, as specified in the above section. Figure 1 presents the proposed relationships as depicted in the hypothetical model of the study.

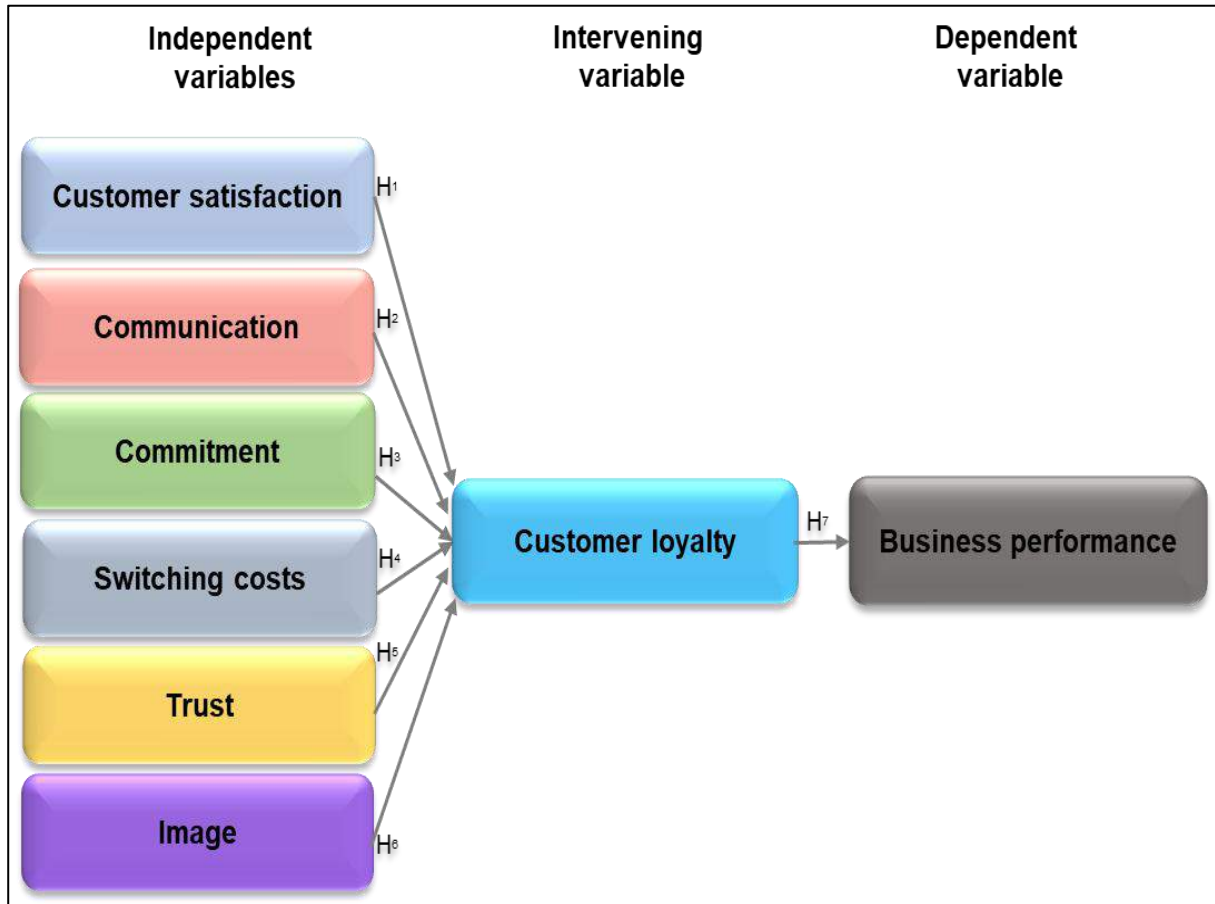


Figure 1: Hypothetical Model of Customer loyalty and Business performance in the South African retail sector

6. Research Methodology

The following sub-sections discuss the study’s research design, participants, measuring instrument and the statistical analysis conducted.

6.1. Research Design

The research design of the study is discussed by means of using the research onion as described by Saunders, Lewis and Thornhill (2019), from the outer layer to the core. Considering the primary objective of this study, the positivistic research paradigm is the most suitable (Maree, Creswell, Ebersohn, Eloff, Ferreira, Ivankova, Jansen, Niewenhuis, Pietersen & Plano Clark 2016). Using this paradigm, the study can identify the antecedents of customer loyalty and the influence of customer loyalty on business performance, based on South African retailers’ perceptions and within their contexts. The best theory development approach for this study is the deductive approach (Saunders et al. 2019:145) as existing literature on customer loyalty was used to identify and test variables linked to customer loyalty. A mono method quantitative methodological choice was most appropriate as the study’s hypotheses could be evaluated to establish relationships between the selected variables (Creswell 2014; Greener & Martelli 2020). To fit the rest of the methodology, a survey strategy was

employed as the perceptions of retail managers were gathered (Saunders et al. 2019:193). Due to the study aiming to gather current customer loyalty and business performance perceptions in the retail context, a cross sectional time horizon was applicable (Saunders et al. 2019:212).

6.2. Research Participants and Measuring Instrument

The empirical investigation of this study allowed primary data to be collected. The study population consisted of retail employees in Gqeberha, South Africa. No list of potential respondents was available, therefore, non-probability sampling techniques, namely convenience and snowball sampling, were used (Struwig & Stead 2013). Trained fieldworkers distributed the questionnaire to potential respondents where the respondents had to be an employee of a business offering a customer loyalty programme. The minimum sample size of 200 was calculated by 8 variables x 5 items per variable x 5 respondents per item (Bartlett, Kotlik & Higgins 2001), and the estimated response rate was 70%. The actual sample size was calculated by dividing the minimum sample size of 200 multiplied by 100 by the estimated response rate of 70 (Saunders, Lewis & Thornhill 2009). Therefore, the study's actual sample size was calculated as 286.

A structured English questionnaire was developed as the measuring instrument and consisted of two sections. Section A consisted of 63 items and used an ordinal scale by means of a five-point Likert-type scale ranging from strongly disagree (1) to strongly agree (5). The section included statements to measure respondents' perceptions of variables in the study's hypothetical model. Using a nominal scale, Section B collected data pertaining to the biographical and demographic information (for example gender and age) of the respondents.

All ethical considerations such as confidentiality, anonymity, voluntary participation and withdrawal from the study were considered while conducting this study. A cover letter explaining the purpose and process of the study accompanied the questionnaire. In addition, a pilot study (to test content validity) was conducted among 20 potential respondents before the main study took place.

6.3. Statistical Analysis

The study's data analysis process comprised of various steps including data cleaning by using both the Microsoft Excel and Statistica software packages. Descriptive statistics were calculated to summarise the sample of respondents. Next, the validity of the measuring instrument was tested. Construct validity was tested and established by conducting an Exploratory Factor Analysis (EFA). Items with factor loadings of at least 0.5 were considered as valid (Osborne 2015). Following this, the Cronbach's alpha was calculated for each factor using the items as determined by the EFA, in order to determine the reliability of the measuring instrument (Creswell 2014). Cronbach's alpha coefficients larger or equal to 0.7 were regarded as reliable (Shukla 2014; Ursachi, Horodnic & Zait 2015; Taber 2017). Based on the factor structure resulting from the EFA, descriptive statistics relating to the variables (including the means and standard deviations of variable responses) were also calculated in the third part of the analysis (MacDonald & Headlam 2014). In terms of further inferential statistics, Pearson's product moment correlations were computed to identify correlations between the variables (Lind, Marchal & Wathen 2012; Yoo, Mayberry, Bae, Singh, Qinghua & Lillard Jr 2014:9-10). The correlations were considered as follows: weak strength if correlations were between 0.1 and 0.3, moderate strength if correlations were between 0.3 and 0.5 and strong strength if correlations were between 0.5 and 1.0. The final part of the data analysis consisted of conducting a multiple regression analysis, which examined the relationships between the independent variables, intervening variable and the dependent variable, after which the hypothesised relationships were then either rejected or accepted (Saunders et al. 2019:621).

7. Empirical Results

The results of the study's empirical investigation are detailed through the sample description, validity and reliability results, descriptive statistics as well as inferential statistics on the relationships between variables. Finally, the decisions regarding the hypotheses' acceptance are provided.

7.1. Sample Description

A total of 265 completed questionnaires were received. After data cleaning, 234 of the completed questionnaires could be used for further analysis, therefore a response rate of 83.57% was obtained (234 usable of the 280 questionnaires distributed). The sample comprised of slightly more females (56.84%) than males (42.74%) with only one respondent not willing to indicate their gender. The population distribution of the sample respondents was mainly Black (40.60%), Coloured (32.05%) and White (20.51%). Nearly 6% of the respondents did not indicate their population group while approximately 1% of the sample was categorised as Asian. Most of the respondents were in the age groups 20 to 29 (43.16%) and 20 to 39 (32.05%), followed by respondents in the age groups 40 to 49 (17.52%) and 50 to 59 (7.27%).

More than half of the respondents have a total working experience of less than 10 years (57.26%), followed by respondents with a total working experience of between 11 and 20 years (28.63%). The remainder of the respondents have between 21 and 30 years (9.83%) and 31 to 40 years (3.42%) total working experience. Two respondents did not indicate their total working experience. The respondents' working experience at their current employment is mainly less than 10 years (76.50%) with a small group of respondents being employed at their current employer for between 11 and 20 years (14.10%). A few respondents have been with their current employer for between 21 and 30 (0.86%) and between 31 and 40 (1.28%) years. Seventeen respondents did not answer the question regarding working experience at current employment.

The most prominent job titles of the respondents are manager (38.89%), sales consultant (22.22%), cashier (10.68%) and supervisor (5.13%). Various other job titles are also listed such as beauty advisor, healthcare advisor and waiter (less than 4% of respondents). The most represented loyalty programmes are for the retailers Spar, PnP and Woolworths (37.61%), health shops such as Clicks and Dischem (28.63%) and clothing retailers such as Edgars, Ackermans, Mr Price, PEP, TFG, Cotton-On Group and Truworths (18.38%). The loyalty programme of a few restaurants (5.98%), banks (4.70%), entertainment facilities (2.99) and coffee shops (1.71%) are also included in the sample.

7.2. Validity and Reliability Results

Regarding validity, the EFA loadings revealed six distinct factors. In addition, the Cronbach's alpha results confirmed that the study's measuring instrument can be regarded as reliable. Table 1 reflects both the EFA and Cronbach's alpha results.

Table 1 reflects both the EFA and Cronbach's alpha results.

Table 1: EFA Validity and Cronbach's Alpha Reliability Results

Factor	Item	Factor loadings from EFA	CA
Customer satisfaction (CS)	T1	0.508967	0.788
	CS4	0.530118	
	CS9	0.629129	
	CS1	0.657573	
	T8	0.749804	
Communication (COM)	COM3	0.616980	0.902
	COM6	0.622052	
	COM2	0.654780	
	COM4	0.699218	
	COM5	0.738873	
	COM7	0.791329	
	CS8	0.817973	
	COM1	0.845210	
Commitment (COMT)	CS6	0.587528	0.728
	COMT4	0.597793	
	COMT3	0.600975	

Factor	Item	Factor loadings from EFA	CA
	COMT1	0.637619	
Switching cost (SC)	COMT6	0.500083	0.867
	CS2	0.501222	
	SC5	0.515593	
	CI2	0.528209	
	CI6	0.576946	
	COMT5	0.607406	
	SC6	0.633537	
	SC4	0.658951	
	SC1	0.671800	
Trusting image (TI)	SC2	0.753012	0.761
	CI3	0.517841	
	CI5	0.514060	
	T10	0.566456	
	CI4	0.584156	
	T2	0.663714	
Customer loyalty (CL)	T6	0.618786	0.866
	CL3	0.629852	
	CL9	0.647395	
	CL1	0.669542	
	CL5	0.684606	
	CL8	0.737365	
	CL4	0.759828	
	CL6	0.769478	
Business performance (BP)	CL7	0.810299	0.834
	BP4	0.577436	
	BP1	0.695661	
	BP5	0.696750	
	BP3	0.723394	
	BP7	0.804997	
	BP6	0.823710	

Source: Own compilation

Table 1 indicates that seven factors emerged from the EFAs. Six of these factors emerged as expected. Two originally expected variables' items loaded together and as such a new, merged factor, realised. One additional factor that resulted from the EFA was deleted from further analyses since less than the minimum required three items loaded onto this factor.

The table indicates that three items expected to measure 'Customer satisfaction' loaded together. In addition, two items developed to measure 'Trust' also loaded onto this factor. These two items' loading here was justified as it considered whether retailers' loyalty programmes "never disappoints" customers, thus these items related to customers' satisfaction with the programmes. The respondents perceived this factor as a single construct, Customer satisfaction, since the items were all related to customer satisfaction.

Table 1 shows that factor two was dominated with items developed to measure 'Communication'. Seven items relating to communication loaded onto this factor. In addition, one item originally developed to measure 'Customer satisfaction' also loaded onto this factor. The reason for this loading can be motivated since the item identified whether customers receive loyalty programme information. It is clear that the item relates to communication. The loading of these eight items together infers that respondents viewed these items as measures of communication.

Furthermore, Table 1 reveals that three items concerning 'commitment' loaded together. One other item first developed to measure 'customer satisfaction' also loaded onto the same factor. This item

measured customers' "happiness to be members" of the considered loyalty programme. This shows that the items fitted with the 'commitment' items. Therefore, this factor was titled Commitment.

Table 1 shows that 10 items, developed to measure 'switching cost' (5), 'commitment' (2), 'customer image' (2) and 'customer satisfaction' (1) loaded on the same factor. Since the factor was dominated with items relating to Switching cost, this factor was labelled as such. Fittingly, the other 5 items' loading here could also be explained. The items considered the loyalty programme's timeous information, resolution of queries, offers and rewards as well as whether customers regard the programme as the best or better than others. Therefore, all the items also related to whether customers will consider a switch to a competitor retailer or whether they regard a switch as being too costly. Evident from Table 1, items originally developed to measure 'Trust' and 'Customer image' separately loaded onto a single factor. The respondents perceived this factor as a single construct and therefore the factor was labelled Trusting image to reflect the combined aspects of customers trusting their retailer's loyalty programme and their image thereof.

The items that loaded onto the study's five factors all had factor loadings above the identified 0.5 cut-off value (see Table 1). This confirms the construct validity of the study's measures. Considering the EFA results, the study's hypotheses were revised. Hypotheses H⁵ and H⁶ merged to form H^{5b} since the new factor, namely Trusting image, emerged: H^{5b} – There is a significant relationship between Trusting image and Customer loyalty. All other hypotheses remained the same.

As mentioned, the internal consistency of each of the factors was also assessed by calculating Cronbach's alpha. The results presented in Table 1 indicate Cronbach's alpha values between 0.728 and 0.902 for all of the study's factors, which indicates a satisfactory level of reliability and internal consistency of the measuring instrument (Shukla 2014; Ursachi et al. 2015).

7.3. Descriptive Variable Statistics and Inferential Statistics on the Relationships between Variables

Table 2 summarises the descriptive statistics for the study variables as well as the Pearson's product moment correlations.

Table 2: Descriptive statistics and Pearson correlations

Variables	Mean	Standard deviation	CS	COM	COM T	SC	TI	CL	BP
CS	4.146	0.560	1.000						
COM	4.267	0.646	0.531	1.000					
COMT	4.157	0.537	0.602	0.455	1.000				
SC	3.784	0.624	0.538	0.465	0.692	1.000			
TI	4.193	0.501	0.696	0.502	0.747	0.748	1.000		
CL	4.132	0.542	0.696	0.566	0.766	0.769	0.840	1.000	
BP	4.075	0.613	0.390	0.336	0.460	0.483	0.503	0.530	1.000

Source: Own compilation

Given that the study's measuring instrument used a 5-point Likert-type scale, it is clear from Table 2 that the respondents were mostly in agreement with the statements relating to the factors because all factors had means above 4, excluding Switching cost (mean = 3.784). Respondents were neutral towards agreeing with the Switching cost items. In particular, with regards to the Customer loyalty (mean = 4.132) and Business performance (mean = 4.075) means, it is evident that respondents regard their businesses' customers as loyal to the loyalty programmes and believe that their business performance improved over the last two years. The highest mean of 4.267 for Communication revealed that respondents view their business's communication about its loyalty programme to be of a high standard. The standard deviations, all below 1, shows that respondents responses varied only slightly.

The Pearson correlations in Table 2 show no weak correlations between variables. All variables have positive – moderated or strong – associations with each of the other variables. All correlations were moderate or strong. The lowest correlation, although still of moderate strength, was found between Communication and Business performance ($r = 0.336$). The strongest link was between Trusting image and Customer loyalty ($r = 0.840$). Two other strong correlations are between Switching cost and Customer loyalty as well and Commitment and Customer loyalty with correlations of 0.769 and 0.766 respectively.

To confirm the correlation results, multiple regression analyses were performed to identify statistically significant relationships between the factors, in order to ultimately test the study's hypotheses (see Tables 3 and 4).

Table 3: Regression analysis – The influence of selected antecedents on customer loyalty

REGRESSION SUMMARY FOR INTERVENING VARIABLE: CUSTOMER LOYALTY						
$R^2 = 79.70\%$						
Parameter	Beta b*	Std. Error	B	Std. Error	T-value	P-value
Customer satisfaction	0.137	0.044	0.132	0.043	3.110	0.002*
Communication	0.111	0.037	0.093	0.031	3.039	0.003*
Commitment	0.196	0.048	0.198	0.048	4.096	0.000**
Switching cost	0.233	0.048	0.202	0.041	4.890	0.000**
Trusting image	0.369	0.057	0.399	0.061	6.519	0.000**

Source: Own compilation

The first multiple regression analysis identified five statistically significant relationships, between Customer loyalty and each of the independent variables. Based on the highest T-value (6.519), Table 3 shows that, with regard to South African retailers' loyalty programmes, Trusting image has the strongest positive relationship with Customer loyalty. This supports the initial Pearson correlation results and implies that if customers trust a retailer's loyalty programme and have a positive image of it, the customer will be loyal to the programme and retailer. The R^2 indicates that nearly 80% of the variability in Customer loyalty is explained by the independent variables.

Table 4: Regression analysis – The influence of customer loyalty on business performance

REGRESSION SUMMARY FOR DEPENDENT VARIABLE: BUSINESS PERFORMANCE						
$R^2 = 28.16\%$						
Parameter	Beta b*	Std. Error	B	Std. Error	T-value	P-value
Customer loyalty	0.530	0.056	0.600	0.063	9.526	0.000

Source: Own compilation

Supported by the literature, the second multiple regression analysis showed that Customer loyalty applicable to South African retailers' loyalty programmes significantly and positively influence the retailers' Business performance. In other words, if retailers increase their customer loyalty levels, their businesses' business performance, including its sales, productivity, profitability, etc., will improve.

7.4. Decisions regarding the Hypotheses

Based on the multiple regression results, the hypotheses were evaluated (see Table 5).

Table 5: Decisions regarding the reformulated hypotheses based on the multiple regression results

Hypothesis number	Hypothesis	Decision
H ¹	There is a significant relationship between <i>Customer satisfaction</i> and <i>Customer loyalty</i> in the South African retail sector.	Accepted
H ²	There is a significant relationship between <i>Communication</i> and <i>Customer loyalty</i> in the South African retail sector.	Accepted
H ³	There is a significant relationship between <i>Commitment</i> and <i>Customer loyalty</i> in the South African retail sector.	Accepted
H ⁴	There is a significant relationship between <i>Switching cost</i> and <i>Customer loyalty</i> in the South African retail sector.	Accepted
H ^{5b}	There is a significant relationship between <i>Trusting image</i> and <i>Customer loyalty</i> in the South African retail sector.	Accepted
H ⁷	There is a significant relationship between <i>Customer loyalty</i> and <i>Business performance</i> in the South African retail sector.	Accepted

Source: Own compilation

A summary of the study's results and the decisions relating to the hypotheses are presented in Figure 2.

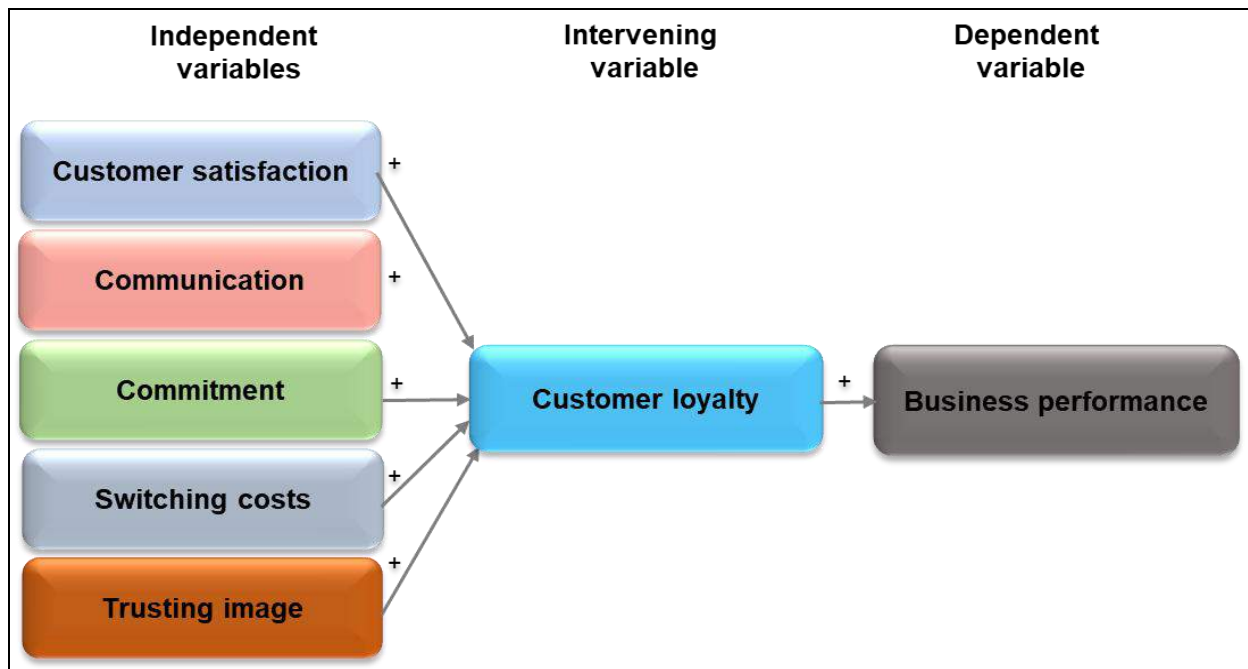


Figure 2: Statistical relationship results pertaining to the Customer loyalty and Business performance in the South African retail sector

8. Managerial Implications

It is clear from Figure 2, based on the statistically significant relationships, that all the selected antecedents of loyalty (as identified from literature and with two variables merging) positively influence Customer loyalty in the South African retail sector. In addition, Customer loyalty through loyalty programmes positively influence the Business performance of retailers.

The study interestingly showed that Switching cost had the lowest mean (currently customers might be willing to switch). It had, however, the second strongest, significant positive influence on customer loyalty. In other words, it is important to ensure customers are not willing to switch (keep switching cost high), as this will increase loyalty. Despite this, currently switching costs are not high in the South African retail sector. This reveals that switching cost is an aspect that retailers can actively use, and strategise around, to increase customer loyalty towards programmes.

Overall, the empirical investigation's results correspond with many previous studies' results in other contexts. Regarding the antecedents of customer loyalty, Karunaratna and Kumara (2018:59) as well as Sing et al. (2017:239) support the result concerning customer satisfaction; Mohammed and Al-Swidi (2019:386) as well as Zephaniah et al. (2020:6) support the result of communication; Koo et al. (2019:6) as well as Thompson and Tuzovic (2020:215) support the result of commitment. In addition, Nguyen et al. (2020:402) as well as Xhema et al. (2018:290) coincide with the result of switching cost; and finally, Arslan (2020:14) as well as Karunaratna and Kumara (2018:59) support the result of trust and image (thus trusting image). Furthermore, the study's result that showed the relationship between customer loyalty and business performance was similarly revealed in studies by Rashid et al. (2020:17) as well as Vierra et al. (2022:208).

It is clear that an increased focus on customer satisfaction, communication, commitment, switching costs and trusting image of customer loyalty programmes would lead to increased customer loyalty levels and the improved business performance of South African retailers. Based on the results and as per the items tested via this study's measuring instrument, the following practical strategies are recommended to South African retailers, to increase customer loyalty through their loyalty programmes and ultimately to improve business performance:

- Proactively determine customers' loyalty programme expectations to adequately design loyalty programme features to meet customers' needs;
- Regularly communicate accurate, updated and understandable loyalty programme information;
- Offer personalised deals and rewards;
- Ensure that customers feel a bond to the specific retailer due to its loyalty programme;
- Encourage and incentivise customers to recommend the specific loyalty programme;
- Make it difficult and time-consuming to switch to a competitor's loyalty programme;
- Outperform competitors' loyalty programmes in terms of benefits and service levels so that customers do not desire to switch;
- Have a well-managed, fair loyalty programme where customer information is confidentially treated;
- Use the loyalty programme (by offering specific or special rewards) to encourage larger, higher-valued and more frequent purchases, for example for bulk purchases.

9. Conclusion

The study gathered perceptions of retail managers in South Africa. In future research, a comparative study could be conducted among retail customers, using the same valid and reliable measuring instrument. In addition, deeper insights could be gained through a qualitative study by means of semi-structured interviews.

Overall, this study contributes to the field of customer loyalty programmes, as implemented by South African retailers. The study is unique in presenting the views of employees, those responsible to "market" their retailers' loyalty programmes among customer and potential customers. It emphasises the antecedents to focus on to increase customer loyalty through loyalty programmes and ultimately improve retailers' business performance.

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The Influence of Artificial Intelligence On Online Apparel Shoppers Repurchase Intention Using Technology Readiness Acceptance Model (TRAM)

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Keywords

Technology readiness;
Technology acceptance;
Artificial intelligence;
Apparel sites

Abstract

The purpose of this study was to investigate the influence of Artificial Intelligence on repurchase intention on apparel sites among South African consumers. Using the Technology Readiness Acceptance model, six main constructs were investigated including optimism, innovativeness, insecurity, perceived usefulness, perceived ease of use, use intention and repurchase intention. Using a quantitative, descriptive research design, 123 usable questionnaires were obtained and analysed using Structural equation modelling. Findings indicate that the effects of optimism on perceived ease of use and perceived usefulness were positive and significant. Innovativeness had a positive and significant influence on perceived ease of use yet a negatively and statistically non-significant influenced on perceived usefulness, insecurity had a non-significant on both on perceived ease of use and perceived usefulness. Findings also indicated positive significant relationships between perceived ease of use, perceived usefulness, use intention and purchase intention. It is recommended that online apparel retailers therefore enhance current AI technologies on their sites to increase overall repurchase intention to remain competitive in a highly competitive e-commerce industry.

1. Introduction

One of the technological advancements presented by the Fourth Industrial Revolution is artificial intelligence (AI), which is defined as the simulation of human intelligence processes exhibited by machines (Helm, Swiergosz, Haeberle, Karnuta, Schaffer, Krebs, Spitzer & Ramkumar, 2020). According to Visvikis, Cheze Le Rest, Jaouen and Hatt (2019), part of AI includes machine learning, which uses computational algorithms to learn and analyse a set of data to enable machines to make autonomous decisions and recommendations. Soni (2020) affirmed that AI provides benefits to many industries, including e-commerce. Some of these benefits include improved customer relationship management, achieving sales goals, enhanced customer experience, better customer service, automated processes, forecasting sales, and improved customer satisfaction (Kian, 2021; Thiebaut, 2019).

The e-commerce industry has experienced exponential growth in the last two years due to the coronavirus pandemic. Tyrväinen and Karjaluo (2022) and Verani, Clodfelter, Menon, Chevinsky, Victory and Hakim (2020) posited that hard lockdown measures imposed by many countries forced retailers to shift their operations online to comply with social distancing regulations. Globally, retail e-commerce sales are currently valued at US\$5.542 billion and are expected to grow to US\$7.391 billion in 2025 (Statista, 2022). In Africa, e-commerce revenue grew by US\$6 million from 2019 to 2020, and is expected to reach US\$46.1 million by 2025 (Statistab, 2021). Even once the pandemic is over, many retailers will continue to operate online due to the shifts in consumer behaviour.

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A study by Accenture (2020) determined the changes in consumer behaviour as a result of the pandemic. Some of the long-term shopping trends identified in the global market include an increased focus on health, a rise in conscious consumption, and a growing love for local products. Another study by Deloitte (2021) found that South African consumers are more comfortable shopping online and will continue shopping online post pandemic. Except for the periods where COVID-19 infections peaked, South Africans' online shopping intentions across categories remained constant, which contrasts with global trends where online purchase intentions fluctuated significantly based on infection numbers. The report identified clothing and footwear (apparel) as part of the top three categories for which consumers intended to continue purchasing online (Deloitte, 2021). A survey by Statista (2021a) supports this notion, as "fashion" was deemed one of the top four largest revenue-generating e-commerce categories in South Africa. Although electronics is currently the top revenue-generating e-commerce category and has the highest site user penetration, the user penetration rate for apparel sites is expected to surpass electronics in 2024. This can be attributed to the implementation of AI technologies on apparel sites, which is this study's area of interest (Idrees, Vignali & Gill, 2020).

AI has advanced how online apparel sites target customers and improve the overall shopping experience. Some of the ways in which apparel sites have integrated AI include:

- Intelligent searches that use website search engines to track browsing history and perform automated, customised searches. This strategy assists in retargeting potential customers based on their previous purchases (Banerjee, Mohapatra & Saha, 2021). For example, a consumer may have searched for "jeans" on an apparel site, left the site, then logged back in and found a number of "jeans" recommended on their profile.
- Personalised information capabilities use AI to exploit mass data and detect consumer purchase behaviours to personalise information. Consumers then spend less time on searching for information and rather receive direct personalised information, customised to their needs (Guha, Grewal, Kopalle, Haenlein, Schneider, Jung, Moustafa, Hegde & Hawkins, 2021). For instance, after searching for "jeans" on an apparel site, customers might receive numerous emails or pop-up ads with jeans-related promotions.
- Chatbots are used to simulate human conversation and interaction through voice commands or text messages and can be embedded through any major messaging application (Landim, Pereira, Vieira, Costa, Moura, Wanick & Bazaki, 2022). For example, a chat box or pop-up message may appear on the apparel site asking customers "How can I help you?".

Regardless of the benefits presented by AI for apparel sites and the opportunities for online apparel shopping in South Africa, there are some concerns regarding South African consumers' readiness to use apparel sites with AI technologies embedded and whether consumers who purchase from apparel sites using AI will repurchase (Wiese & Humbani, 2020). These concerns are elaborated in the problem statement.

1.1. Problem Statement

The pandemic forced many consumers to re-evaluate their spending as they had less disposable income to purchase non-essential items, such as apparel, due to job losses or salary cuts (Beckdach, Brown, Halbardier, Henstorf & Murphy, 2020). Alberola, Arslan, Cheng and Moessner (2021) stated that some consumers opted for more affordable brands through brand switching, while others stopped purchasing apparel altogether. With fashion and apparel being one of South Africa's top retailing categories (Statista, 2021a), the pandemic led many apparel retailers to lose existing customers, subsequently experiencing a decline in sales and profit (Dewalska-Opitek & Bilińska-Reformat, 2021). However, one of the greatest opportunities that the pandemic offered to apparel retailers was the rapid increase in e-commerce and online shopping (Agava, Selvam & Pete, 2021; Fourie, 2021; Halan, 2021).

Despite the increase in e-commerce activity, Mdluli and Dunga (2022) claimed that majority of the South African population lives below the poverty line or comprises low-income earners, and access to the Internet is not deemed a necessity. Thus, Odunitan-Wayas, Okop, Dover, Alaba, Micklesfield,

Puoane, Levitt, Battersby, Meltzer and Lambert (2021) asserted that consumers from these income groups prioritise their spending on groceries and transport. Lembani, Gunter, Breines and Dalu (2020) added that one of the most prominent socio-economic issues that South Africa faces is access to good-quality Internet infrastructure and data to enable consumers to use the Internet. The high costs, poor infrastructure, cable theft, and rolling blackouts inhibit many consumers' access to the Internet (Bergere, 2020; Koirala & Acharya, 2022; Lavery, Abadi, Bauer, Brambilla, Cheng, Cox, Dudley, Ellis, Fontaine, Kelly, Marquardt, Matlhane, Ndagano, Petruccione, Slavík, Romanato, Rosales-Guzmán, Roux, Roux, Wang & Forbes, 2018).

The digital divide between rich and poor is broadening, as most South African consumers struggle to access and use the Internet (Lavery et al., 2018; Lembani et al., 2020). Resultantly, a large portion of the South African population does not have access to information online and cannot use the Internet to perform many activities that are now being automated, including shopping online (Halan, 2021; Koirala & Acharya, 2022). According to Lembani et al. (2020) and Mdluli and Dunga, (2022), since the broader South African population lacks experience using the Internet, these individuals are not as digitally literate as their middle-high income-earner counterparts, who use the Internet regularly and are more digitally savvy. Subsequently, many South African consumers are sceptical to shop or perform transactions online (Thusi & Maduku, 2020). Moreover, Park and Zhang (2022) and Vlačić, Corbo, Silva and Dabić (2021) argued that new technologies, such as AI, that provide customised solutions and track purchase behaviour increase scepticism among consumers, which hinders their readiness and intention to shop online. Since most apparel retailers have shifted their operations online and integrated aspects of AI on their sites, the digital divide, level of digital literacy, and scepticism regarding online shopping could prove problematic to consumers' readiness and intention to repurchase from apparel sites embedding AI technologies (Gao, Ren, Yang, Zhang & Li, 2022; Lavery et al., 2018).

Consequently, This study therefore aims to investigate the influence of AI on apparel sites on consumers' repurchase intention using TRAM, which combines aspects from the technology readiness index (TRI) and the technology acceptance model (TAM), including technology readiness, perceived usefulness, perceived ease of use, use intention, and repurchase intention (Chen & Lin, 2018; Simiyu & Kohsuwan, 2019). The findings from this study will assist online apparel retailers to determine if South African consumers are ready to use AI to inform their purchase decisions and repurchase intention online.

1.2. Research aim and research objectives

The main aim for this study is to investigate the influence of AI on apparel sites on consumers' repurchase intention using TRAM.

The secondary research objectives proposed for this study include:

SO1: To determine the influence of optimism towards using AI on perceived usefulness of AI on online apparel sites.

SO2: To investigate the effect of innovativeness of using AI on perceived usefulness of AI on online apparel sites.

SO3: To ascertain the influence of insecurity towards using AI on perceived usefulness of AI on online apparel sites.

SO4: To determine the effect of perceived usefulness of AI on use intention of online apparel sites.

SO5: To investigate the influence of ease of use of AI on use intention of online apparel sites.

SO6: To ascertain the effect of ease of use of AI on perceived usefulness of AI on online apparel sites.

SO7: To determine the influence of use intention of AI on apparel sites on repurchase intention from apparel sites.

1.3. Methodology

This study employed a positivist research paradigm and adopted a quantitative, descriptive research approach. The sample was selected based on non-probability, purposive sampling and considered any

South African consumer: (1) who purchased from an online apparel retailer in the past six months, and (2) engaged with any form of AI on the online apparel retailer's site, including but not limited to, Siri, facial recognition, delivering personalised messages, offering chatbot interaction, and/or intelligent searches. The data were collected from the sample using an online questionnaire administered via Google Forms to maintain social distancing. Due to the low response rate associated with online questionnaires, a snowball sampling technique was also employed, which asked the respondents to send the questionnaire link to at least five other people they believed met the purposive sampling screening criteria. Kirchherr and Charles (2018) argue that some of the limitations associated with snowball sampling include the fact that the sample might not be representative of the population, however this did not pose an issue for the current study as it was not the intention or purpose of the study to generalise the findings to the broader population. Noy (2008) adds that some respondents do not want to provide the names and details of potential respondents, however this study employed an online questionnaire via Google Forms which maintained anonymity and confidentiality of all respondents.

The questionnaire was divided into three main sections. Section A required demographic information, Section B asked respondents to provide information regarding their last online apparel purchase, and Section C comprised Likert-scale type items anchored on a scale of 1 to 5, where 1 = "strongly disagree" and 5 = "strongly agree". These items were adopted from Chen, Liu and Lin (2013), Masrom, (2007), Porter and Donthu (2006), and Shin and Lee (2014). Section C included four subsections measuring statements pertaining to: (i) technology readiness with three subconstructs, including optimism and insecurity (each comprising four to five statements); (ii) perceived usefulness (comprising six statements); (iii) perceived ease of use (comprising eight statements); and (iv) continuance intention (comprising six statements). A cover page, explanatory statement, and consent form were included in the online questionnaire and potential respondents were provided with the background to the study, informed about their rights, and assured of their anonymity.

In total, 123 usable questionnaires were obtained and data were coded, cleaned, and analysed using SPSS version 27. Structural equation modelling (SEM) analysis was conducted using SmartPLS 3 to investigate the hypotheses and model fit. Refer to the results and findings sections for the tests performed and the results thereof.

1.4. Hypotheses

Using the TRAM, the following hypotheses were formulated for the study:

- H_{1a}: Optimism has a positive, significant impact on perceived usefulness of AI on online apparel sites.
- H_{1b}: Optimism has a positive, significant impact on ease of use of AI on online apparel sites.
- H_{2a}: Innovativeness has a positive, significant impact on perceived usefulness of AI on online apparel sites.
- H_{2b}: Innovativeness has a positive, significant impact on ease of use of AI on online apparel sites.
- H_{3a}: Insecurity has a non-significant impact on perceived usefulness of AI on online apparel sites.
- H_{3b}: Insecurity has a non-significant impact on ease of use of AI on online apparel sites.
- H₄: Perceived usefulness of AI has a positive, significant impact on use intention on apparel sites.
- H₅: Ease of use of AI has a positive, significant impact on use intention on apparel sites.
- H₆: Ease of use of AI has a positive, significant impact on perceived usefulness of AI on apparel sites.
- H₇: Use intention of AI has a positive, significant impact on repurchase intention on apparel sites.

2. Literature Review

The literature review provides an analysis of existing literature underpinning the study, including the TRI and TAM. Each model is discussed in conjunction with the associated constructs proposed in the conceptual model in Figure 1.

2.1. Technology Readiness Index

Technology readiness (TR) refers to an individual's traits that increase the adoption of new technologies to accomplish a goal (Chen & Lin, 2018). To measure an individual's TR, a TR index was established (Pangriya & Singh, 2021; Simiyu & Kohsuwan, 2019), which comprised various personality subdivisions including optimism, innovativeness, and insecurity. Together, these subdivisions determine an individual's propensity to use new technologies (Tavera-Mesías, van Klyton & Collazos, 2022).

2.1.1. Optimism

Optimism refers to the positive attitude associated with using technology and the results and benefits it offers (Cruz-Cárdenas, Guadalupe-Lanas, Ramos-Galarza & Palacio-Fierro, 2021). Optimism increases the perception of usefulness, control, ease of use, and trust in the technology (Park & Zhang, 2022). Pangriya and Singh (2021) explained that optimism generates curiosity about a new technology and creates the perception among users that they have the ability to use the technology and deal with uncertainty. Gao et al. (2022) asserted that this enhances enjoyment with the AI technology and increases the willingness to help others use it. Resultantly, consumers experience the AI technology to be more fun and thus interact with the technology more frequently. In addition, Flavián, Pérez-Rueda, Belanche and Casaló (2022) discovered that optimism is positively associated with improved ease of use and perceived usefulness. The more individuals prefer to use the new technology, the more likely they are to perceive the technology as useful and easy to use (Yang, Yan, Wang & Xue, 2022). Qasem (2021) conducted a study on "try-on" technology in the context of e-fashion retailing and found positive and significant relationships between optimism and perceived ease of use, and optimism and perceived usefulness. Based on this discussion, the following hypotheses are proposed for this study:

- H_{1a}: Optimism has a positive, significant impact on perceived usefulness of AI on online apparel sites.
- H_{1b}: Optimism has a positive, significant impact on ease of use of AI on online apparel sites.

2.1.2. Innovativeness

Innovativeness refers to the inherent interest to try new technologies (Park & Zhang, 2022). Individuals who express innovativeness are pioneers and want to be the first to use new technologies (Cruz-Cárdenas et al., 2021). According to Flavián et al. (2022), highly innovative individuals tend to be open-minded, demonstrate increased willingness to use technologies, and have a positive and favourable impression towards using the technology. Studies by Kim and Chiu (2019) and Rahim, Humaidi, Aziz and Zain (2022) that combined the TR index with TAM found that innovativeness positively influences perceived ease of use and perceived usefulness. Other research discovered that innovativeness related to AI technologies specifically enhanced the perceived ease of use and perceived usefulness (Pillai, Sivathanu & Dwivedi, 2020). Concerning the context of this research, a study on AI and fashion shopping found that consumers with a high degree of innovativeness tend to have a higher level of playfulness, perceived ease of use, and perceived usefulness towards augmented reality in fashion shopping (Hur & Lee, 2021). With this in mind, it can be hypothesised that:

- H_{2a}: Innovativeness has a positive, significant impact on perceived usefulness of AI on online apparel sites.
- H_{2b}: Innovativeness has a positive, significant impact on ease of use of AI on online apparel sites.

2.1.3. Insecurity

Park and Zhang (2022) described insecurity as a sense of distrust in a technology, based on doubts about its ability to achieve the intended goals accurately or reliably. In some cases, insecurity also concerns the technology having harmful consequences (Cruz-Cárdenas et al., 2021). In relation to AI technologies, Flavián et al. (2022) affirmed that the distrust stems from a lack of understanding about the technology, which leads to diminished confidence in using the technology and thus scepticism about it being able to meet an individual's needs. Individuals with high levels of technology insecurity may be averse to using the technology and some might even refuse to adopt it (Kim & Chiu, 2019). In the South African market, Lavery et al. (2018) and Lembani et al. (2020) suggested that consumers are assumed to be technology-averse due to the digital divide, which negatively influences digital literacy, thus perceived insecurity associated with using AI technologies might not influence perceived ease of use and perceived usefulness like optimism and innovativeness. Studies that have integrated TR with TAM found that insecurity negatively influences perceived ease of use and perceived usefulness regarding AI customer service on online shopping sites (Zhao, Zhang, Liu, Zhu & Gao, 2021). As per Rahim et al. (2022), insecurity has no significant influence on perceived ease of use and perceived usefulness. Therefore, it can be hypothesised that:

- H_{3a}: Insecurity has a non-significant impact on perceived usefulness of AI on online apparel sites.
- H_{3b}: Insecurity has a non-significant impact on ease of use of AI on online apparel sites.

Pangriya and Singh (2021) asserted that the TR subdivisions and the TAM were used to develop the TRAM. In relation to TRAM, Simiyu and Kohsuwan (2019) argued that TR is an antecedent of perceived usefulness and perceived ease of use in the TAM. According to Chen and Lin (2018), to adopt new technologies, individuals evaluate technologies cognitively, using the TR subdivisions to determine the perceived usefulness and perceived ease of use. The individuals' cognitive evaluations then determine their intention to use the technology and their actual use of the technology.

2.2. Technology Acceptance Model

The TAM was developed by Davis in 1989 and aims to predict behavioural attitudes towards a technology (Francom, Schwan & Nuatomue, 2021). The TAM includes the factor of "acceptance" as a behavioural intention and is a preliminary stage of adoption (Marquez, Cianfrone & Kellison, 2020). The TAM is widely used in many studies related to the acceptance of technologies, including AI-related studies by Mohr and Köhl (2021), Sadriwala and Sadriwala (2022), and Sohn and Kwon (2020). Consequently, TAM was selected for the current study. Francom et al. (2021) and Marquez et al. (2020) contended that the original TAM proposed that users' adoption of computer systems – in this case, AI technologies – depended on their behavioural intentions, which was dependent on their attitude towards the technology, and attitude was influenced by two constructs – namely perceived usefulness and perceived ease of use.

2.2.1. Perceived Usefulness

As per Sadriwala and Sadriwala (2022), perceived usefulness is the degree to which a user believes that using a particular technology will enhance the performance of a task. Choe, Kim and Hwang (2021) and Song, Ruan and Jeon (2021) purported that if users perceive that the perceived usefulness of technologies is capable of enhancing their performance of a task without the hindrance of usage difficulties, their attitude towards using the technology is positively influenced. Therefore, positive attitudes towards these technologies increase the likelihood that users intend to use and adopt the technologies (Chi, 2018; Hussein, Mohamed & Kais, 2021). Due to the multitude of studies that have proved that perceived usefulness positively and significantly influences attitude, it can be assumed that perceived usefulness has a direct, positive influence on use intention (Arora, Singh & Gupta, 2022; Rahi & Abd Ghani, 2021). With specific reference to perceived usefulness and AI, research (e.g., Meske & Bunde, 2022; Pillai & Sivathanu, 2020; Yang & Lee, 2019) has found that perceived usefulness positively influences use intention. One study that reviewed an AI technology called True Fit® on online fashion sites found that perceived usefulness of using True Fit® positively influenced the intention to use the technology (Pookulangara, Parr, Kinley & Josiam, 2021). Another study that

investigated the influence of hyper-personalisation on digital clienteling for online fashion retailers found that perceived usefulness of hyper-personalisation and digital clienteling has a strong and positive relationship with behavioural intention (Jain, Rakesh, Nabi & Chaturvedi, 2018). As a result, it can be hypothesised that:

- H₄: Perceived usefulness of AI has a positive, significant impact on use intention on apparel sites.

2.2.2. Perceived Ease of Use

Perceived ease of use is defined as the extent to which using the technology is free of effort (Mohr & Köhl, 2021). Other scholars have referred to perceived ease of use as the user-friendliness of a system or technology (Yalcin & Kutlu, 2019; Karim, Haque, Ulfy, Hossain & Anis, 2020). Easy-to-use systems or technologies lead to the acceptance or adoption of the technology (Francom et al., 2021; Mohr & Köhl, 2021). Similar to perceived usefulness, perceived ease of use regarding the utilisation of technologies positively influences attitude towards using a technology (Sadriwala & Sadriwala, 2022). Choe et al. (2021) and Hussein et al. (2021) found that a positive attitude resulting from perceived ease of use is linked to greater intention to use the technologies. Other research found a direct relationship between perceived ease of use and intention to use technologies (Al Amin, 2022; Hatamifar, Ghaderi & Nikjoo, 2021; Tao & Xu, 2020). With reference to the perceived ease of use of AI and the intention to use AI, Ho, Yeh and Lin (2022); Pillai and Sivathanu (2020); and Sohn and Kwon (2020) discovered a positive and significant relationship between the two constructs. Concerning AI and apparel sites, Tao and Xu (2020) found that consumers' intention to use online fashion subscription services was determined by their perceived ease of use. Another study by Jiang, Gu, Feng, Wei and Tsai (2022) investigated the influence of a virtual shoe-try-on function in mobile online shopping and discovered that perceived ease of use is an important predictor of users' continuance intentions to use the virtual shoe-try-on function. Consequently, the following hypothesis is proposed:

- H₅: Ease of use of AI has a positive, significant impact on use intention on apparel sites.

In many studies, perceived usefulness and perceived ease of use are explored as determinants of use intention, but there is an interplay between the two constructs (Hussein et al., 2021; Jain et al., 2018; Kashive, Powale & Kashive, 2021). Even though some users may perceive higher degrees of usefulness (perceived usefulness) regarding a specific technology, as it effectively enhances the performance of a task, the same users might not perceive the technology to be easy to use (perceived ease of use) (Dhingra & Mudgal, 2019). In relation to this study, it can be assumed that AI might not be perceived as easy to use by consumers in emerging markets who have limited digital literacy skills and are sceptical of shopping online (Lavery et al., 2018; Thusi & Maduku, 2020). Nevertheless, existing studies on AI and TAM argue that perceived ease of use of AI influences perceived usefulness of AI, which affects use intention (Jiang et al., 2022; Mohr & Köhl, 2021; Pookulangara et al., 2021). Hence, it is hypothesised that:

- H₆: Ease of use of AI has a positive, significant impact on perceived usefulness of AI on apparel sites.

2.3. Intention

The outcome of the TRAM is to determine whether users intend to use the technology in future. Regarding this study, the conceptual model proposes two types of intention: use intention and repurchase intention.

2.3.1. Use Intention

The intention to use technology in future is supported by the information systems continuance theory (ISCT), which argues that users will continue utilising technologies if their expectations have been met and/or exceeded (Ding, 2019). In this case, technologies refer to AI. Zheng, Wang, Doll, Deng

and Williams (2018) purported that the ISCT includes perceived usefulness and maintains that if users perceive increased levels of usefulness, they are more likely to experience positive disconfirmation, while lower levels of perceived usefulness lead to negative disconfirmation. Franque, Oliveira, Tam and Santini (2021) affirmed that positive disconfirmation leads to greater intention to use the technology. As mentioned in sections 2.2.1 and 2.2.2, perceived usefulness and perceived ease of use are determinants of use intention as per TRAM (e.g., Chen & Lin, 2018; Simiyu & Kohsuwan, 2019) and were proposed as hypotheses 4 and 5 to be investigated in this study. A lot of information systems research stops at this point or includes an investigation on actual use of the technology, but the marketing scope of this study justifies the need to extend the TRAM beyond intention to use the technology and to determine whether consumers have an intention to repurchase from AI apparel sites.

2.3.2. Repurchase Intention

Repurchase intention is defined as the propensity that a customer will continue to purchase a product from the same online seller (Trivedi & Yadav, 2018). For many online apparel stores, the intention to repurchase was negatively affected by the pandemic as consumers became more price-sensitive and some switched to more affordable clothing options (Alberola et al., 2021; Dewalska-Opitek & Bilińska-Reformat, 2021). The boom in online shopping led to a highly competitive arena for many online apparel retailers. To maintain their competitive advantage, some online apparel retailers enhanced their sites through AI (Pookulangara et al., 2021; Tao & Xu, 2020). Despite the efforts by online apparel retailers to integrate AI on their sites to retain consumers, this strategy might only appeal to a small portion of South African consumers, as the greater population cannot access and use the Internet due to high data costs, poor infrastructure, rolling blackouts, and increased scepticism associated with online shopping (Bergere, 2020; Koirala & Acharya, 2022; Lavery et al., 2018; Mdluli & Dunga, 2022). However, in theory (Apergis, 2019; Ofori & Appiah-Nimo, 2019), consumers who already shop online are assumed to be more digitally savvy and digitally literate, and thus more accepting of new or more advanced technologies, such as AI. Based on their perceived usefulness and perceived ease of use, consumers will have a greater intention to use AI technologies. This was proven in the apparel industry by Jain et al. (2018), Jiang et al. (2022), Pookulangara et al. (2021), and Tao and Xu (2020), who conducted studies on AI technologies, including a virtual shoe-try-on function, hyper-personalisation on digital clienteling, online fashion subscription services, and True Fit® on mobile apparel sites respectively. Other marketing-related research has explored the influence of perceived usefulness and perceived ease of use of AI technologies on purchase intention in the fashion industry (e.g., Isidore & Arun, 2021; Soares, Camacho & Elmashhara, 2022; Yin & Qiu, 2021). However, increased brand switching and price-sensitivity as a result of the pandemic has led to challenges among online apparel retailers concerning the retention of customers (Alberola et al., 2021; Dewalska-Opitek & Bilińska-Reformat, 2021). Consequently, the outcome proposed for this study relates to repurchase intention and research regarding the influence of use intention on repurchase intention in emerging markets is scant. Since most studies prove a positive relationship between use intention and purchase intention (Isidore & Arun, 2021; Nguyen, Nguyen, Nguyen, Phan, Bui & Moon, 2019), it can be assumed that use intention also positively influences repurchase intention. Thus, it can be hypothesised that:

- H₇: Use intention of AI has a positive, significant impact on repurchase intention on apparel sites.

3. Results and Findings

Using IBM SPSS version 27, the data were coded and cleaned, resulting in 123 usable questionnaires. Thereafter, the data were checked for normality using skewness and kurtosis, which should fall within the parameters of -2 to +2 and -7 to +7 respectively (Pallant, 2016). The data fell within these parameters, indicating that it was normally distributed and that parametric tests could be conducted, including descriptive analysis (means and standard deviations), exploratory and confirmatory factor analysis (CFA; as the study combined four different questionnaires that had been previously validated, but not as a combined study), and SEM.

3.1. Descriptive Statistics

The demographic results for the descriptive statistics indicate that 43.9% of respondents hold a diploma/degree as their highest level of education, while majority of respondents (52.8%) were students. Of the study's respondents, 47.2% were aged 18–25. In terms of online shopping behaviour, 27.6% purchase online at least once every three months, while 23.6% of respondents only purchase once a month. Most of the respondents (38.2%) indicated that they use other forms of online stores to purchase clothes, while 29.3% of respondents purchase their clothes at Superbalist. Furthermore, when asked which apparel item they purchased most often, 26.8% of respondents answered shoes.

Central tendency measures were then analysed to determine the extent to which respondents agreed or disagreed with the statements. The mean point of the five-point Likert scale is 2.5 (5/2), with any mean scores below 2.5 indicating that most respondents either strongly disagree or disagree with the statements. Mean scores of 2.5–3.4 suggest that most respondents tend to neither agree nor disagree with the statements. All the mean scores equal to or above 3.5 suggest that most respondents agree or strongly agree with the statements measuring the constructs. Based on the analysis, it was found that most respondents agreed with statements on optimism ($M = 3.58$), perceived usefulness ($M = 3.82$), perceived ease of use ($M = 3.53$), use intention ($M = 3.62$), and repurchase intention ($M = 3.68$), whereas respondents felt neutral about innovativeness ($M = 3.08$) and insecurity ($M = 2.92$).

Standard deviations were also provided which explain the spread of the data from the mean (Pallant, 2016). The highest standard deviations were calculated for repurchase intention ($SD = 0.920$), insecurity ($SD = 0.911$), innovativeness ($SD = 0.836$), perceived ease of use ($SD = 0.824$), use intention ($SD = 0.824$) and perceived usefulness ($SD = 0.781$). This indicates that responses deviated significantly from the mean implying that there were large variations in the responses provided to these statements. Optimism had the lowest standard deviation ($SD = 0.677$). The next section describes the process followed for SEM analysis and whether the data met the criteria for these tests.

3.2. Structural Equation Modelling

CFA is the first step of SEM that determines the validity of the measurements in the model. To perform the factor analysis, two criteria have to be met. The first criterion is to ensure there are sufficient data points available. Pallant (2016) affirmed that 7–10 subjects per item should be available. This criterion was met, as there were 10 subjects for each factor. The second criterion to be met is that of the Kaiser-Meyer-Olkin (KMO) value, which should be 0.6 or above, as per Pallant (2016). Moreover, the Bartlett's test of sphericity should be significant. The data met this criterion, as the KMO value was 0.914 and Bartlett's test of sphericity was significant ($p \leq 0.000$), indicating that the data met all the criteria for sampling adequacy. According to Fabrigar, Wegener, MacCallum and Strahan (1999:277), normally distributed data use the maximum likelihood method as the most suitable extraction method for factor analysis, as it highlights significance testing and the goodness-of-fit indices. This validity assessment includes reliability, convergent, and discriminant validity, which are discussed in the following subsections.

3.2.1. Reliability

Reliability refers to the extent to which the measurement of a phenomenon provides stable and consistent results (Taherdoost, 2016). To assess scale reliability in SEM, the Cronbach's alpha and composite reliability (CR) are used (Field, 2013). The required cut-off value of the Cronbach's alpha and CR is 0.7, although 0.6 is sometimes permissible (Malhotra, Nunan & Birks, 2017). Results in Table 1 show that the Cronbach's alpha ranges from 0.776 to 0.957, indicating an overall acceptable internal consistency of all seven latent variables considered in the model. Therefore, all constructs involved in this study are considered reliable.

3.2.2. Convergent Validity

Convergent validity is the extent to which a set of items only measures one latent variable in the same direction (Hosany, Prayag, Deesilatham, Caušević & Odeh, 2015). The results support the convergent validity because all the factor loadings are above or equal to 0.5. In addition, the average variance

extracted (AVE) estimates are above 0.5. The results from the reliability and convergent reliability tests are presented in Table 1.

Table 1: Reliability and Convergent Reliability Results

Constructs	Items	Corrected item-total correlation	Cronbach's alpha	CR	AVE
Innovativeness	I1	0.807	0.822	0.875	0.585
	I2	0.777			
	I3	0.619			
	I4	0.803			
	I5	0.800			
Insecurity	IN1	0.720	0.776	0.866	0.684
	IN2	0.869			
	IN3	0.883			
Optimism	O1	0.670	0.788	0.855	0.542
	O2	0.752			
	O3	0.784			
	O4	0.704			
	O5	0.766			
Perceived ease of use	PEU1	0.831	0.951	0.959	0.746
	PEU2	0.851			
	PEU3	0.925			
	PEU4	0.888			
	PEU5	0.845			
	PEU6	0.841			
	PEU7	0.824			
	PEU8	0.898			
Perceived usefulness	PU1	0.833	0.934	0.948	0.755
	PU2	0.793			
	PU3	0.909			
	PU4	0.887			
	PU5	0.891			
	PU6	0.893			
Repurchase intention	RI1	0.796	0.957	0.964	0.769
	RI2	0.884			
	RI3	0.932			
	RI4	0.913			
	RI5	0.887			
	RI6	0.934			
	RI7	0.765			
	RI8	0.889			
Use intention	CI1	0.894	0.925	0.941	0.730
	CI2	0.908			
	CI3	0.913			

Constructs	Items	Corrected item-total correlation	Cronbach's alpha	CR	AVE
	CI4	0.878			
	CI5	0.775			
	CI6	0.741			

The statistical evidence of discriminant validity is presented and discussed next using Fornell and Larcker (1981).

3.2.3. Discriminant Validity

Discriminant validity measures the extent to which a latent variable or construct discriminates from other latent variables (Taherdoost, 2016). According to Fornell and Larcker (1981), the square root of the AVE is expected to be higher than the inter-construct correlation coefficients. Discriminant validity was assessed by comparing correlations between all pairs of constructs with the square root of the AVE of each construct (Malhotra et al., 2017). Correlations greater than the square root of AVE indicate poor discriminant validity between the constructs involved. The results in Table 2 suggest that there is no discriminant validity concern.

Table 2. Fornell and Larcker's (1981) Matrix to Assess the Discriminant Validity

	Innovativeness	Insecurity	Optimism	Perceived ease of use	Perceived usefulness	Repurchase intention	Use intention
Innovativeness	0.765						
Insecurity	0.280	0.827					
Optimism	0.624	0.308	0.736				
Perceived ease of use	0.570	0.115	0.496	0.864			
Perceived usefulness	0.519	0.213	0.708	0.591	0.869		
Repurchase intention	0.284	0.049	0.405	0.471	0.387	0.877	
Use intention	0.390	0.165	0.595	0.637	0.633	0.563	0.854

3.2.4. Structural Equation Model

The model was developed and tested to appraise the significance of the constructs. For hypothesis testing, PLS generated results with the computed version of the variables. A graphical representation of the structural model can be seen in Figure 1. According to the results, the empirical model explains 36.4% (R^2) of the perceived ease of use variance. Furthermore, 57.7% (R^2) of the variance is explained by perceived usefulness, and 50.7% of the variance is accounted for by use intention. Finally, 31.7% of the variance is accounted for by repurchase intention.

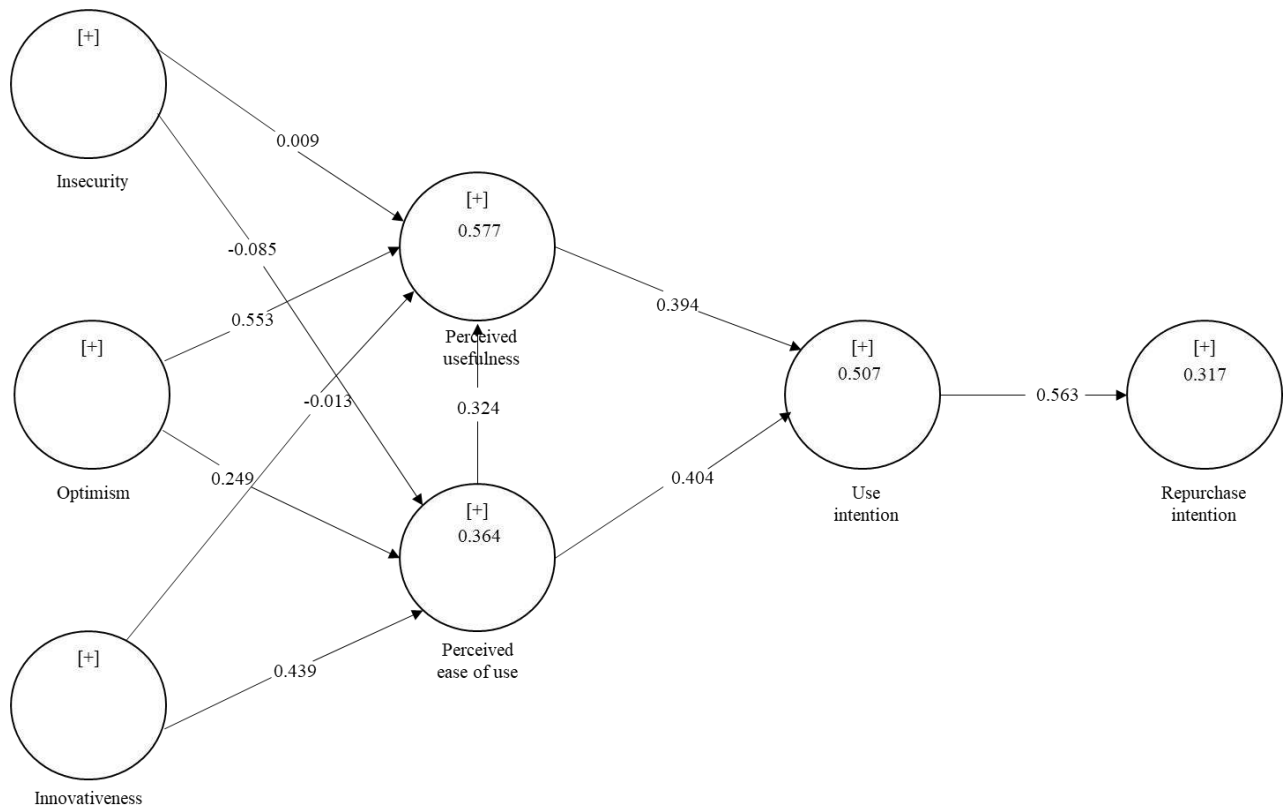


Figure 1: Structural Equation Model

3.2.5. Hypothesis testing

Table 3 establishes the independent variable's predictive effects on dependent variables. The beta values indicate the direction and strength of the relationships, while the p -values (sig.) estimate the significance of the predictive effect (Pallant, 2016). The significance of the relationship is supported if the p -value is below 0.05. An $f^2 \geq 0.02$ is a small effect, an $f^2 \geq 0.15$ is a medium effect, and an $f^2 \geq 0.35$ is considered a large effect size.

Table 3: Standardised Regression Weights and Hypotheses Conclusions

	Beta value	f^2	P Value	Conclusion
Optimism -> Perceived Ease of Use	0.249	0.057	0.027	Optimism has a positive ($\beta=0.249$) significant ($P < 0.05$) effect on Perceived Ease of Use. Therefore, H1_b is accepted.
Optimism -> Perceived usefulness	0.553	0.404	0.000	Optimism has a positive ($\beta=0.553$), significant ($P < 0.05$) effect influence on Perceived usefulness. Therefore, H1_a is accepted.
Innovativeness -> Perceived Ease of Use	0.439	0.182	0.000	Innovativeness has a positive ($\beta=0.439$), significant ($P < 0.05$) effect on Perceived Ease of Use. Therefore, H2_b is accepted.
Innovativeness -> Perceived usefulness	-0.013	0.000	0.895	Innovativeness has a negative ($\beta=-0.013$) and a statistically non-significant ($P > 0.05$) influence on Perceived usefulness. Therefore, H2_a is rejected.
Insecurity -> Perceived Ease of	-0.085	0.010	0.282	Insecurity has a non-significant

Use				(P>0.05) influence on Perceived Ease of Use. Therefore, H3_b is accepted.
Insecurity -> Perceived usefulness	0.009	0.000	0.890	Insecurity has a non-significant (P>0.05) influence on Perceived Ease of Use. Therefore, H3_a is accepted.
Perceived usefulness -> Use Intention	0.394	0.205	0.000	Perceived usefulness has a positive ($\beta=0.394$), significant (P<0.05) influence on Use Intention. Therefore, H₄ is accepted.
Perceived Ease of Use -> Use Intention	0.404	0.215	0.000	Perceived Ease of Use has a positive ($\beta=0.404$), significant (P < 0.05) effect on Use Intention. Therefore, H₅ is accepted.
Perceived Ease of Use -> Perceived usefulness	0.324	0.158	0.001	Perceived Ease of Use has a positive ($\beta=0.324$), significant (P < 0.05) effect on Perceived usefulness. Therefore, H₆ is accepted.
Use Intention -> Repurchase Intention	0.563	0.464	0.000	Use Intention has a positive ($\beta=0.563$), significant (P < 0.05) effect on Repurchase Intention. Therefore, H₇ is accepted.

Based on the findings in Table 3, optimism and innovativeness have a significant and positive influence on perceived ease of use, which aligns with the findings of Flavián et al. (2022), Qasem (2021), and Rahim et al. (2022). Optimism was also found to have a positive, significant influence on perceived usefulness, which was supported by Yang et al. (2022). However, unlike the findings of Hur and Lee (2021) and Pillai et al. (2020), this study found that innovativeness has a negative and a statistically non-significant influence on perceived usefulness. As evidenced by Rahim et al. (2022), insecurity was found to have a non-significant influence on perceived ease of use and perceived usefulness. Moreover, perceived ease of use was found to have a positive and significant effect on perceived usefulness (Hussein et al., 2021; Jain et al., 2018; Kashive et al., 2021). Perceived ease of use and perceived usefulness were proven to positively and significantly influence use intention, which was supported by Jain et al. (2018), Jiang et al. (2022), Pillai and Sivathanu (2020), and Pookulangara et al. (2021). As evidenced by Alberola et al. (2021), Dewalska-Opitek and Bilińska-Reformat (2021), and Nguyen et al. (2019), this study proved that use intention has a positive and significant influence on repurchase intention.

4. Managerial Implications and Limitations

The findings from this study can be employed by online apparel retailers to improve existing retention strategies, remain competitive, and employ AI technologies to keep up with technological trends. Despite the implications of the digital divide, including limited access to data and varying digital literacy rates (Mdluli & Dunga, 2022), this study's findings indicate that South African respondents are optimistic about AI technologies on apparel sites. Consequently, apparel retailers should continue using existing AI technologies, such as Siri, facial recognition, delivering personalised messages, offering chatbot interaction, and/or intelligent searches. Since optimism positively influences both perceived ease of use and perceived usefulness, and innovativeness influences perceived ease of use, apparel retailers might want to consider adding more AI-related technologies to their sites. AI technologies that South African online apparel retailers can consider include: (1) integrating machine learning and human user input regarding personal style, fit, body shape, and event attire appropriateness to suggest various personalised looks similar to the mobile application Affinity; (2) a wardrobe management application that asks users for their email address and permission to access

email receipts of fashion purchases to suggest outfits using consumers' current styles, which is employed by Finery; and (3) using deep learning algorithms to access customers' search information to develop a search engine that helps consumers keep track of global fashion trends, such as the offering by Hook (Jesus, 2019; Marr, 2021). By integrating AI technologies like the above-mentioned onto apparel sites, online apparel retailers increase the likelihood that consumers use the sites, which leads to greater intention to purchase.

This study does come with inherent limitations that can be overcome by future studies. The first limitation is the non-probability sampling techniques employed in this study which prohibited the results from being generalised to the broader population. Future studies could employ probability sampling techniques in order to generalise the results to the broader South African population. Secondly, this study was limited to the apparel industry which was ranked in the top five e-commerce categories in South Africa, however future studies can investigate the influence of AI among the other e-commerce categories such as electronics and media or furniture and appliances. Lastly, this study was descriptive in nature however to add to the depth of understanding of AI on use and repurchase intention, future studies can employ exploratory research through the use of qualitative methods to obtain accurate and detailed insights on consumer behaviour.

5. Conclusion

This study aimed to investigate whether South African consumers are ready to use AI on apparel sites and whether this readiness influences their repurchase intentions of apparel items online. Using the TRAM, it was discovered that consumers are ready to use AI when shopping for apparel online, which also drives their repurchase intentions. In general, consumers were optimistic about the perceived usefulness and ease of use of AI on apparel sites and although they perceived innovativeness of AI to influence perceived ease of use, they did not feel the same about innovativeness and perceived usefulness of AI on apparel sites. Furthermore, it can be concluded that consumers were sceptical of AI due to the insecurity related to perceived ease of use, but insecurity did not influence their perceived usefulness and perceived ease of use regarding AI technologies on apparel sites. In general, perceived ease of use and perceived usefulness influenced whether consumers continued using AI on apparel sites and their intention to use AI positively impacted their intention to repurchase from the apparel site.

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Public Hospital Patients' Impressions Of The Servicescape At Nelson Mandela Bay

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Keywords

Servicescape;
Patients; Public
hospital; Healthcare

Abstract

The paper assesses the servicescape that resonates well with public hospital patients in Nelson Mandela Bay. This research is conducted in light of the fact that most South Africans cannot afford private healthcare services, whilst the National Health Insurance fund has not yet been finalised; as a result, many have to make use of public hospitals. It is the duty of government to provide healthcare services to its population, for the benefit of the country, so as to have a healthy and active population. A population that is able to maintain good health is able to make a meaningful contribution to the economic development of the country. A structured research approach, employing a quantitative research design and convenience sampling, was followed for this study of public hospital patients. The study determined key factors of the public hospital servicescape in Nelson Mandela Bay to be: social encounters, augmented waiting time, patient satisfaction and patient revisit intention.

1. Introduction

Whilst healthcare in general is not the focus of this study, a large portion of healthcare funding is spent on financing public hospitals. The health sector in South Africa is one of the top three sectors with the highest budget allocations. In the 2020/21 budget, Learning and Culture was allocated a budget of R396.4 billion, while Social Development was allocated R309.5 billion, and Health was allocated R229.7 billion (National Treasury, 2020:1). Since the advent of democracy in 1994, South Africa embarked on instituting several health policies with the intention of addressing service delivery gaps brought about by the apartheid government; among those policies is the government's approach to primary healthcare (Rispe, 2016:17; White, Levin & Rispe, 2020:12). The primary aim of the government's efforts regarding healthcare is to improve the health of the general population of the country (Rispe, 2016:17; Otokiti, 2019:426; Tang & Li, 2021:1).

This paper focusses on servicescape, which other researchers consider to be an overarching term that encompasses the dimensions such of tangibility, reliability, responsiveness, assurance and empathy (Dharma, Adawiyah & Sutrisna, 2019:875). Amin, Wahid and Ismail (2016:59) as well as Türker, Gökkaya and Acar (2019:256) clarify that servicescape includes both the exterior and interior attributes of the structure. Exterior attributes are those related to a building's exterior, as well as its parking and landscape. While interior attributes refer to design, equipment and decoration. Ng, Lai, Ismail, Tong and Yuen (2017:734) observe that past research work on servicescape focused on profit organisations, hence, their study was directed to public hospitals which are considered non-profit organisation.

Innovation and embracing of technology are requirements for the appeasement of users of public services, that is, services such as hospitals and schools (Chen, Reichard, Yuan & Li, 2020:1-2). Although safety has been underplayed in the existent research, it is a crucial element of servicescape (Siguaw, Mai & Wagner, 2019:1-2). One would expect that unsafe hospitals would not necessarily chase patients away, however, healthcare workers feel unsafe working in such an environment. In this respect, safety within the hospital environment would be improved when linked to innovation and

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technology. This view is supported by Hunter-Jones, Line, Zhang, Malthouse, Witell and Hollis (2019:3) who note that diagnostics, surgical processes and technology advancements resonate well with healthcare professionals who respond to the call of duty.

Researchers have highlighted those elements, within the healthcare environment, that make a positive contribution to the hospitality environment. Among these are the quality of the physical environment and a service-oriented culture, both of which are believed to be appreciated and valued by the recipients of the relevant service (Mody, Suess & Dogru, 2019:2).

Several factors, as discussed below, have influenced the need to undertake the current research. The decentralisation of healthcare services (at the national, provincial and local government levels) has led to conflicting views of people, with some believing that it offers local organisations the opportunity to negotiate with the central government in order to redistribute resources. Others, however, believe that this has worsened the situation for less privileged communities due to the low standard of healthcare services rendered to them (Maphumulo & Bhengu, 2019:6). Passchier (2017:836) has reported that the National Health Insurance (NHI) fund, as proposed by the South African Government through the 2015 White Paper, is intended to address issues of universal access, mandatory preparation of healthcare, comprehensive services, financial risk protection, single fund, strategic purchaser and single payer. As of early-2021, matters concerning NHI funding have not been finalised, which meaning that the discrepancies in the healthcare system still exist.

In South Africa, the basic services necessary for the development of the country, and the well-being of all who live in it, are publicly available. These services include health, housing, road networks, electricity, water supply and sanitation (Kaur, 2018:1; Meyer, 2014:11). Furthermore, Malakoane, Heunis, Chikobvu, Kigozi and Kruger (2020:7) note a decline in the quality of healthcare in certain regions of South Africa due to the decentralisation of healthcare. The service quality of public hospitals has been problematic for many years, due to poor management and certain hospital cultures (Fusheini, Eyes & Goudge, 2017:69).

Developing countries, such as South Africa, have many citizens who rely on the public hospital service since the cost thereof is minimal, if there is any cost at all (Passchier, 2017:836). Public services, including healthcare services, are made available to the population in order to improve public life; hence, the removal of the discriminatory practices that were instituted under the previous political dispensation (Maphumulo & Bhengu, 2019:5). The government has acknowledged a number of challenges within the sector, specifically those related to finances, strategic management, poor internal performance and governance issues at public hospitals, as well as the need for improved quality of services within the public healthcare system. Moreover, amongst public hospital users, the public healthcare system is considered to be under-resourced and dissatisfactory (Fusheini *et al.*, 2017:69). These recommendations, by the government itself, highlight that there is a need for progress in public hospital services.

The focus of this paper is on the servicescape of public hospitals in Nelson Mandela Bay, with the intention of improving the impression these institutions leave on their patients. This is done with a view to avoid overcrowding of certain facilities, while others remain underutilised.

2. Problem Investigated

Previous research shows dissatisfaction amongst those citizens who make use of the public healthcare system in South Africa, particularly in terms of overall service quality as a result of uncaring behaviours displayed by health workers within the public sector (Maseko & Harris, 2018:23). However, these studies were focused on the overall service quality of public hospitals in South Africa, while not much attention has been given to in-depth research on the servicescape of the public hospital system.

Based on previous studies on servicescapes in different settings, it is apparent that no research has been conducted on the servicescape of public hospitals within Nelson Mandela Bay. This study

examines those factors that influence the servicescape of public hospitals, as well as the impact of the servicescape on client satisfaction and intention to revisit.

While there have been a few studies conducted on servicescape itself, and its role in some businesses, none have focused on public hospitals in the Eastern Cape province of South Africa. Various researchers from different parts of the world have, over the years, researched servicescape; for example, Bitner's (1992:59) research focused on perspectives regarding servicescape, and dimensions that influence perceived servicescape. Rosenbaum and Massiah (2011:473) have combined their research with the work of Bitner (1992) in order to form an expanded view on servicescape.

The importance of service quality was initially investigated by Parasuraman, Zeithaml and Berry (1985), as cited by Amin *et al*, (2016:59). Further to this, Jayasanka and Wickramasuriya (2019:1781) then explained that service quality dimensions were classified into five elements: reliability, responsiveness, assurance, empathy and tangibles. A recent study on servicescape has been conducted in India, by DCunha, Suresh and Kumar (2019:1), to "assess the construct validity of the proposed servicescape model and to assess the perception of patients regarding the servicescape".

The scale of the population that is dependent on public hospitals for medical care and treatment creates a reasonable concern for the measurement and improvement of the servicescape of health sector institutions in Nelson Mandela Bay. It was noted, by Maphumulo and Bhengu (2019:4), that the current public healthcare system in South Africa is under-resourced.

There is a perceptible dissatisfaction experienced by patients in South Africa, which may pertain to the servicescape, service quality and waiting periods for services in public hospitals. Thus, this study focuses on ascertaining the problematic dimensions that impede patient satisfaction in public hospitals within Nelson Mandela Bay. Furthermore, the study aims to identify attributes of a public hospital servicescape that are present in other relatable service firms, such as private hospitals, which may potentially enhance the service quality and servicescape of public hospitals. In order to discern whether alterations or additions to the servicescape would plausibly increase patient satisfaction, it is necessary to scrutinise the influence of a public hospital's servicescape on satisfaction within the healthcare system.

Avan, Uyar, Zorlu and Özmen (2019:313) note that, like humans, the servicescape has a personality, of which the design communicates a certain message. They highlight that the servicescape has a significant influence on clients' perceptions and expectations of service quality.

The following questions arose when reviewing the problem statement:

- Which factors augment the servicescape of a public hospital?
- What efforts are public hospital management making to enhance patient waiting time?

3. Research Objectives and Hypotheses

The objective of this study is to investigate the impression that public hospital patients have of the servicescape at Nelson Mandela Bay.

The following hypotheses were formulated:

- Hypothesis H¹: There is a relationship between physical dimensions and the public hospital servicescape.
- Hypothesis H²: There is a relationship between social dimensions and the public hospital servicescape.
- Hypothesis H³: There is a relationship between socially-symbolic dimensions and the public hospital servicescape.
- Hypothesis H⁴: There is a relationship between service quality and the public hospital servicescape.
- Hypothesis H⁵: There is a relationship between waiting time and the public hospital servicescape.

- Hypothesis H⁶: There is a relationship between the public hospital servicescape and client satisfaction.
- Hypothesis H⁷: There is a relationship between the public hospital servicescape and revisit intention.

Figure 1, below, outlines the hypothetical model tested in this paper.

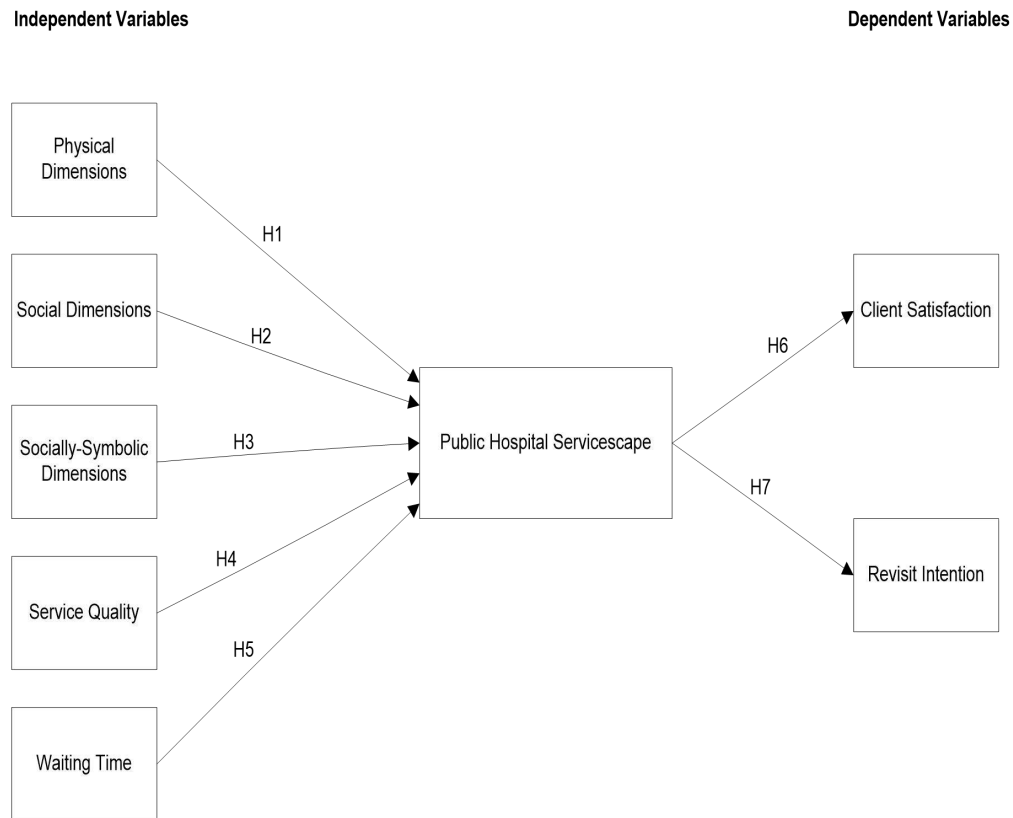


Figure 1: Hypothetical model of the study

4. Literature Overview

The contents of the literature review are influenced by the objectives of the study.

4.1 Servicescape

Dad, Davies and Rehman (2016:30) as well as Hamzah, Abd Rashid, Mansor and Shobri (2020:96) state that the idea of servicescape was first introduced by Kotler (1973), who focused on store atmosphere, and who argued that the store environment has an influence on the store's ability to make a profit from its shoppers. However, Agnihotri and Chaturvedi (2018:116) note that, in 1981, Booms and Bitner extended the concept of servicescape and characterised it as "all of the objective physical factors that can be controlled by the firm to enhance (or constrain) employee and customer actions". Therefore, the concept of servicescape is found in various settings, which include restaurants and hospitals (Min, Hyun, Kim & Lee, 2017:78-79).

4.2 Physical dimension

The physical dimension is categorised or divided into ambient conditions, spatial layout and functionality, as well as signs, symbols and artifacts (Ong & Yap, 2017:130-131). According to Siguaw, Mai and Wagner (2019), the ambient conditions of the servicescape are defined as those background conditions that exist below the level of immediate awareness; this includes, among others, environmental stimuli or atmospherics (such as air temperature, air quality and noise) linked to human sensations (Rosenbaum & Massiah, 2011:474). Spatial layout and functionality are attributed to the manner in which equipment, furniture, furnishing arrangements, sizes, shapes and spatial relationships

promote a conducive environment and allow for the acceptable standard of functionality (Lyu, Hu, Hung & Mao, 2017:2558). Signs, symbols and artifacts refer to displays on the internal and external of a building in order to communicate information (Lee, Wang & Cai, 2015:98). The physical environment plays an important role in the functioning of a hospital; therefore, it is important for any hospital to have the latest amenities, modern equipment and sufficient seating for patients (Al-Azzam, 2020:13).

4.3 Social dimension

A hospital plays a key role in minimising negativity by integrating social and environmental dimensions in its main business of healthcare (Nascimento, Araujo & Alves, 2016:29; Daú, Scavarda, Scavarda & Portugal, 2019:10). Marimuthu and Paulose (2016:558) as well as Andersson, Svensson, Molina-Castillo, Otero-Neira, Lindgren, Karlsson and Laurell (2022:2) note that the social dimension is an element of sustainability; therefore, hospitals embrace sustainability due to social responsibility and social responsiveness, as a result of the shortage of natural resources and the rising cost of healthcare. Social responsibility encompasses the adoption of ethical standards and the formulation of anti-discrimination policies (Liu, Shi, Pong & Chen, 2016:2; Li, Benamraoui, Shah & Mathew, 2021:3). Social factors related to healthcare include, among others, taking a decision to use or not use a healthcare service, as well as incompatibility interaction between hospital users and health professionals (Rojas, 2015:128-132; Hooper, Mitchell, Marshall, Cheatham, Austin, Sanders, Krishnamurthi & Grafton, 2019:1).

4.4 Socially-symbolic dimensions

The socially symbolic dimension can be split into three elements: ethnic signs and symbols; ethnic objects; and artifacts (Pham, Pham, Hossain & Li, 2020:2). Symbolic dimensions at healthcare facilities influence consumer perceptions and satisfaction (Cadirci & Akmaz, 2017:93). They have the potential to either influence consumers positively or negatively, leading to a particular consumer behaviour (Dad, *et al.* 2016:34; Sandberg, Hurmerinta, Leino & Menzfeld, 2022:19). A logo and architectural design, such as style of décor, can also influence patients in a certain way (Ong & Yap, 2017:131).

4.5 Service quality

Service quality can affect a company's long-term sustainability and growth prospects (Hizam & Ahmed, 2019:387). It is associated with meeting customer expectations, customer loyalty, buying behaviour and repurchase intention (Rashid & Rokade, 2019:50). Customers measure service with respect to service quality, and the satisfaction derived therefrom (Sathish, Indradevi & Gangineni, 2018:356). Service quality includes, amongst others, the accuracy of the medical diagnoses and procedures (Kalaja, Myshketa & Scalera, 2016:558), no waiting list or delays in treatment, and the existence of a hygienic environment (Fatima, Malik & Shabbir, 2017:1196).

4.6 Waiting time

Patient waiting time refers to the amount of time a patient spends in the outpatient department while waiting to receive a service; this is the difference between departure time and entry time (Pandit, Varma & Amruta, 2016:86). A long waiting time results in a range of issues such as impaired access to care, abnormal hospital work patterns, and patient unhappiness (Xie & Or, 2017:1). A long waiting time may frustrate patients, as they prefer to be attended to within a short space of time, otherwise they seek services elsewhere if a better alternative is available (Sun, Lin, Zhao, Zhang, Xu, Chen, Hu, Stuntz, Li & Liu, 2017:2). Although waiting time can be uncomfortable when patients are unoccupied, when the situation is not explained to them, and when they feel uncertain as to when they will be attended to; however, if they are kept occupied, by giving them health education items to read, they would not feel the passing of time (Mokgoko, 2013:86; Xie & Or, 2017:2).

4.7 Client satisfaction

Lee, Wang, Lu, Hsieh, Chien, Tsai and Dong (2016:2) as well as Khoa, Nguyen and Nguyen (2020:22) note the work that Kutner and Cripps (1997) have done on client satisfaction. Their research revealed that clients are valuable, and that each client has a different set of needs, likes, buying patterns and

price consciousness. Client satisfaction is linked to the quality of the product or service rendered; moreover, quality is related to a client's expectations of a particular product or service, when benchmarked against other available products or services (Suchánek & Králová, 2019:1238). The theory of "expectation inconformity" states that clients become satisfied when the goods provided to them (i.e. the clients) exceed their expectations; this also applies to service quality (Kumar & Gopinath, 2019:609). This implies that, when patients are taken good care of – from reception, to the doctor's consultation room, to the hospital pharmacy – they will be satisfied with the services offered them, and they are more likely to be willing to revisit the hospital.

4.8 Revisit intention

Pidada and Wandebori (2016:532) as well as Wandebori and Pidada (2017:208) define revisit intention as the client's intention to maintain their relationship with the service provider, as well as the remarkable client experience that has led to their satisfaction. Chan (2018:4) has established that a client has three stages of perception regarding the services they receive: pre-visit, during the visit and post-visit. The client's revisit intention is based on their past experience, trust of the service, and perceived quality of the service received (Sia, Lai, Noor, Ismail, Tong & Yuen, 2018:1316-1317).

5. Research Design and Methodology

5.1 Research paradigm

This study employed the quantitative research method. The study was conducted in order to test the relationships between the dependent and independent variables of preconceived models that were resourced and reformatted into a model for this specific study; thus, the study can be distinguished as a positivistic study.

5.2 Population and sampling

The population for this study consists of patients, past and present, who sought healthcare services from public hospitals in Nelson Mandela Bay. This study required the use of convenience and simple random sampling. The probability sampling method selected for use in this study was convenience sampling, as it was the most advantageous method for interviewing a large number of respondents in a relatively short period of time. The sampling method could also be described as simple random sampling, since the researcher approached any person at random from the clinic and out-patient department. Two hundred-and-fifty (250) questionnaires were distributed and two hundred and twenty-eight (228) questionnaires were usable; this indicates a response rate of 91.2%. The majority of the respondents were females, who constituted just over half of the group of respondents (55%); thus, the male respondents made up 45% of the total respondent group. This is somewhat indicative of a nearly equal gender mix of the out-patients of public hospitals. In terms of the age categories of the respondents, 63% study participants were between 21 and 50 years old. This indicates that the majority of the respondents were younger than 50 years of age. The relatively large volume of respondents could be owing to their price sensitivity regarding their healthcare experience. Similarly, the respondents older than the age of 50 (37%) may make use of public healthcare services owing to their inability to pay for private healthcare. The seniors may also be price sensitive in relation to their healthcare needs, owing to their lack of income, possibly from inefficient retirement funding or unemployment. Interestingly, a majority of the respondents do not live off of their personal income (62%). Therefore, a noteworthy number of respondents either survived off of the household income, pension, government grants, family support, or a disability grant. This implies that a minority of respondents survived through the use of their independent personal incomes (38%). Forty-nine percent (49%) of the respondents are frequent visitors to public hospitals. This result is expected owing to the data being collected from a sample of patients visiting the out-patient department of the selected hospitals. This means that the majority of visitors are likely to make recurring visits in order to collect their periodic medicinal subscriptions.

5.3 Questionnaire design

The instruments with previously tested results, and self-developed measuring instruments, were used to measure the variables included in the model depicted in Figure 1. A questionnaire comprising of 74 items was designed for this study. All questionnaire items were linked to a five-point Likert-type scale

with the following designations: 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = undecided, 5 = somewhat agree, 6 = agree, 7 = strongly agree. The categorisation of items, per variable, was apportioned as follows:

- Physical dimension: 12,
- Social dimension: 11,
- Socially-symbolic dimension: 4,
- Service quality: 6,
- Waiting time: 12,
- Servicescape: 7,
- Client satisfaction: 8,
- Revisit intention: 6, and
- Demographic profile of respondents: 8.

5.4 Data analysis

The questionnaire was pre-coded with grouped questions, and sorted in Microsoft Excel. The STATISTICA (version 11) computer program was used to conduct various sets of data analyses for reliability, validity, descriptive statistics, and multiple regression. Descriptive statistics was used to describe and summarise the demographic profile of the study participants.

6. Empirical Results

6.1 Validity and reliability of the measuring instrument

Construct validity was determined by means of factor analysis, so as to establish the degree to which a construct is not associated with other constructs on a theoretical basis.

The findings of the exploratory factor analysis (EFA) are depicted in Table 1, below. Values greater than ± 0.50 are generally considered necessary for practical significance, although factor loadings of ± 0.30 to ± 0.40 are considered to be minimally acceptable (Hair, Black, Babin & Anderson, 2014:116; Quoquab, Mohammad & Sukari, 2019:803). Thus, factor loadings of a minimum of 0.33 are considered acceptable in some studies. However, a more trustworthy minimum score of 0.5 was used for the purpose of this study (Hair *et al.*, 2014:116; Kothari, 2004:239). For this study, 3 items loading per factor is considered significant.

Table 1: Factor loadings matrix on a 5-point Likert scale

Variables	Items retained	Minimum loadings	Maximum loadings
Social Encounters (SE)	19	0.782	0.506
Waiting Time Awareness (WTA)	5	0.714	0.589
Augmented Waiting Time (AWT)	4	0.736	0.534
Ambient Conditions (AC)	4	0.770	0.537
Servicescape (S)	6	0.738	0.524
Client Satisfaction (CS)	5	0.709	0.546
Revisit Intention (RI)	3	0.820	0.662

Source: Calculated from survey results

Table 2, below, provides the construct labels of the purified model, and it identifies items that were used to define the construct. The following independent variables were identified: social encounters (SE), waiting time awareness (WTA), augmented waiting time (AWT), ambient conditions (AC). The intervening variable was: Servicescape (S). Furthermore, the two dependent variables were: client satisfaction (CS) and revisit intention (RI).

Table 2: Empirical factor structure for Cronbach's Alpha values of the latent values

LATENT VARIABLES	INDIVIDUAL ITEMS	A
Social Encounters (SE)	PD8, PD12, SQ1, SQ2, SQ3, SQ4, SQ5, SQ6, SD1, SD2, SD3, SD5, SD6, SD9, SD10, SD11, SSD2, SSD3, SSD4	0.94
Waiting Time Awareness (WTA)	WT4, WT6, WT7, WT8, WT10	0.74
Augmented Waiting Time (AWT)	WT1, WT2, WT5, SD4	0.67
Ambient Conditions (AC)	PD2, PD7, SD7, SD8	0.63
Client Satisfaction (CS)	CS3, CS4, CS5, RI3, S7	0.89
Servicescape (S)	CS7, CS8, S1, S2, S3, S4	0.81
Revisit Intention (RI)	RI2, RI4, RI5	0.77

Source: Calculated from survey results

Table 2 reveals that three of the twelve items expected to measure the ‘physical dimension’ (PD8, PD10 and PD12), all six of the items expected to measure ‘service quality’ (SQ1, SQ2, SQ3, SQ4, SQ5, SQ6), and eight of the eleven items expected to measure the ‘social dimension’ (SD1, SD2, SD3, SD5, SD6, SD9, SD10, SD11), as well as three of the items expected to measure the ‘socially-symbolic dimension’ (SSD2, SSD3 and SSD4) loaded on factor one (1). This indicates that respondents view these items as measures of a single construct: ‘social encounters’.

Table 2 further shows that five of the twelve items that were expected to measure ‘waiting time’ (WT4, WT6, WT7, WT8 and WT10) loaded onto factor two (2). Furthermore, factor three (3) loadings consisted of three of the twelve items expected to measure ‘waiting time’ (WT1, WT2, WT5) and one of the eleven items expected to measure the ‘social dimension’ (SD4). The resulting items that were loaded on factor two (2) and factor three (3), as indicated in Table 2, illustrate that respondents did not perceive ‘waiting time’ as a single construct, but as a two-pronged construct. This means that respondents viewed ‘waiting time’ as consisting of the dimensions related to ‘waiting time awareness’ and ‘augmented waiting time’, which were loaded onto factor two (2) and factor three (3), respectively.

Table 2 indicates that two of the twelve items expected to measure the ‘physical dimension’ (4) (PD2, PD7) as well as two of the eleven items expected to measure ‘social dimension’ loaded onto Factor four (4) (SD7, SD8). This means that respondents view these items as a single construct termed ‘ambient conditions’.

Table 2 also shows that two items (PD1 and PD9) expected to measure ‘physical dimension’ loaded onto factor five (5); these were deleted as they were not sufficient to load to a significant extent, as the cut-off line in this study is a minimum of three items loading per factor, which was considered significant. All items that loaded on factor five (5) were deleted due to a lack of sufficient discriminant validity.

One item (PD10) cross-loaded, and was therefore not considered for further analysis. Ten items (PD3, PD4, PD5, PD6, PD11, SSD1, WT3, WT9, WT11 and WT12) that were expected to measure ‘physical dimension’, ‘socially-symbolic dimension’ and ‘waiting time’ did not load to a significant extent ($P < 0.05$); this led to the deletion of these items, and they were not used in the subsequent analysis. Table 2 further shows that the respondents did not perceive of ‘waiting time’ as a single construct. This signifies that the respondents perceived of ‘waiting time’ as a two-dimensional variable, that is, as related to ‘waiting time awareness’ and ‘augmented waiting time’. Moreover, Table 2 indicates that the study respondents perceive of social encounters, ambient conditions, waiting time awareness and augmented waiting time as influential to the public hospital servicescape.

In this study, statistical analysis was performed to evaluate whether all the items in a test are measuring the same thing by means of a reliability procedure; Viladrich, Angulo-Brunet and Doval

(2017:758) refer to this process as an internal consistency procedure. Cronbach's Alpha is deemed a sufficient measure of reliability; it was, therefore, used as a measure for internal consistency in this study. Table 2 depicts the Cronbach's Alpha values of the variables. The study considered Cronbach's Alpha scores of ≥ 0.6 as acceptable. This represents a sufficient standard in accordance with the objectives of this study (Narang, 2008:181). Taber (2018:1288) cautions that a high alpha value, such as 0.7, which is often promoted in other studies, does not always translate to good results; therefore, a minimum value of 0.6 is adopted for the purpose of this study. Table 3 indicates Cronbach's Alpha values between 0.6 and 0.9. This means that all instruments have a fair degree of reliability greater than 0.50 (De Leng, Stegers-Jager, Husband, Dowell, Born & Themmen, 2017:247; Kothari, 2004:239). In this study, the acceptance of a value >0.6 is consistent with most literature on Cronbach's Alpha values (Taber, 2017:9). Having removed items, and re-coupled items into new variables as a consequence of the EFA, the hypotheses tested in this study had to be reformulated.

The hypotheses subjected to empirical verification are as follows:

H¹ is modified into H^{1.1} and H^{1.2}

Hypothesis H^{1.1}: There is a relationship between social encounters and the public hospital servicescape.

Hypothesis H^{1.2}: There is a relationship between ambient conditions and the public hospital servicescape.

H⁵ is modified into H^{5.1} and H^{5.2}

Hypothesis H^{5.1}: There is a relationship between awareness of waiting time and the public hospital servicescape.

Hypothesis H^{5.2}: There is a relationship between augmented waiting time and the public hospital servicescape.

Hypothesis H⁶: There is a relationship between the public hospital servicescape and client satisfaction.

Hypothesis H⁷: There is a relationship between the public hospital servicescape and revisit intention.

6.2 Regression analyses

Regression analysis was used to test the hypothesised relationships between the independent and dependent variables in this study.

Table 3: The influence of independent variables on the public hospital servicescape

Regression summary for dependent variable: Servicescape						
	b*	Std.Err.	B	Std.Err.	t(222)	p-value
Intercept			0.725707	0.281784	2.57540	0.010659
SE	0.602731	0.052453	0.666793	0.058028	11.49088	0.000000
AC	0.042240	0.051613	0.040096	0.048994	0.81840	0.414005
A-WT	-0.029473	0.051780	-0.029438	0.051719	-0.56919	0.569802
Aug-WT	0.147135	0.052236	0.138303	0.049100	2.81673	0.005287
R	R²		F		Std Error of estimate P	
66%	0.43		42.03		0.62	

Table 3, above, indicates the R² of 0.43 which explains the 43% variability in the model concerning the 'servicescape' variable. Table 3 also shows that 'social encounters'(SE) in a public hospital are positively related to 'servicescape' (b = 0.667, p < 0.000).

Table 3 further shows that ‘ambient conditions’(AC) ($b = 0.040$, $p < 0.000$) and ‘waiting time awareness’(A-WT) ($b = -0.029$, $p < 0.000$) do not exert a significant influence on ‘servicescape’. Table 3 also shows that the ‘augmented waiting time’(Aug-WT) of a public hospital is positively related to revisit intention ($b = 0.138$, $p < 0.000$).

Table 4: The influence of the public hospital servicescape on client satisfaction

Regression analysis: Client satisfaction						
	b*	Std.Err.	B	Std.Err.	t(226)	p-value
Intercept			1.199462	0.168680	7.11088	0.0000
Client Satisfaction	0.643712	0.050905	0.635064	0.050221	12.64538	0.0000
R	R²		F		Std Error of estimate P	
64%	0.41436462		159.91		0.62069	

Table 4, above, shows that the ‘servicescape’ is positively related to ‘client Satisfaction’ ($b = 0.635$, $p < 0.000$). The R^2 of 0.414 explains the 41% variability in the model concerning the variable ‘client satisfaction’.

Table 5: The influence of the servicescape on revisit intention

Regression analysis: Servicescape						
	b*	Std.Err.	B	Std.Err.	t(226)	p-value
Intercept			1.886556	0.232325	8.120342	0.0000
Revisit	0.440748	0.059710	0.510581	0.069170	7.381538	0.0000
R	R²		F		Std Error of estimate P	
44%	0.19425885		54.487		0.84339	

Table 5, above, indicates that the ‘servicescape’ is positively related to ‘revisit intention’(Revisit) ($b = 0.511$, $p < 0.000$). The R^2 of 0.194 explains the 19.425% variability in the model concerning the variable ‘servicescape’.

7. Managerial Implications

7.1 Servicescape and social encounters

It is essential for public hospital management to provide a good setting in which to explore both the layout and functionality of the servicescape, as well as the aesthetic appeal thereof. The ways in which seats, aisles, hallways, walkways, food service lines, restrooms, entrances and exits are designed and arranged influence patient comfort. Moreover, the external environment, architectural design, facility upkeep and cleanliness, decorative banners and signs, as well as the appearance of personnel all influence the ambience of the place.

Services are mostly intangible; in this respect, clients can never be absolutely certain that they will receive the same standard of service every time.

According to the literature, the social dimension includes all interactions within a hospital’s premises. This includes interactions with or between doctors, nurses, medical staff, security guards and other patients. The social encounter between the establishment and client is important as it is a major part of the provision of services; this notion is supported by various researchers. DCunha *et al.* (2019:5) suggest that healthcare administrators should ensure that the service environment is conducive to the needs of patients. Public hospital management seek to recruit staff in order to fill specific roles and provide them with uniforms consistent with the health servicescape in which they work. Service personnel are required to conform to the mandated dress code and grooming standards of the hospital

in which they work; furthermore, it is the responsibility of hospital management to ensure that all members of staff, whether they are in direct contact with patients or not, are fully trained in patient care and the rendering of hospitality services.

Service providers, such as public hospitals, particularly those in which patients spend significant periods of time, should recognize that spatial layouts which make people feel constricted or confined will have a direct effect on patients' perceptions of quality and, indirectly, on their desire to return. This implies that service or retail facilities that are specifically designed to add some level of stimulation to the client's service experience or relaxation and comfort (such as waiting rooms, restrooms, restaurants, coffee bars, sports bars) should take care that ample space is provided to facilitate exploration and stimulation within the servicescape.

This study found that feelings of crowding adversely influence patients' perceptions of the public hospital servicescape. Public hospital management should reduce overcrowding within the health servicescape by ensuring that one's ability to explore and encounter stimulating experiences in the environment (such as hospital waiting rooms, retail outlets, restaurants, gift shops, coffee bars, reading materials, pharmacy, and the other interesting areas) and one's comfort levels during one's stay, are promoted. Individuals who encounter an open facility with ample space to move about are expected to view the servicescape as more exciting and attractive, whereas a congested facility with insufficient space to allow for freedom of movement will be viewed as unstimulating, and it will negatively impact their health.

7.2 Augmented waiting time

The patients feel that waiting is more manageable when there is some form of entertainment or distraction available to them whilst waiting for the medical attention they require.

Patient waiting time can be improved by having staff supervise the queuing system in waiting rooms. Management can provide numbers in a chronological order to patients, which can assist staff in the smooth running of the queue. Waiting time can be augmented through the provision of reading materials, to occupy patients, which will reduce patient perceptions of waiting time. Furthermore, the provision of retail outlets in public hospitals has proven to be another influential factor in respect of waiting time augmentation. Stocking waiting rooms with current and interesting reading materials, such as weekly or monthly magazines and daily newspapers, is ideal to keeping patients occupied while they wait for the services they seek. Management should identify retailers that can provide attractive restaurants that could provide patients with a variety of meals within the hospital premises. This is important to augment the servicescape of the public hospital and to occupy patient waiting time. Restaurants and retail outlets could also generate additional hospital income, which can be used to fund servicescape enhancement. Furthermore, providing gift shops within easy reach of patient waiting rooms can successfully enhance waiting time.

This finding is supported by Mokgoko (2013:70) as well as Han, Kang and Kwon (2018:11) who suggest that the way to make waiting time more tolerable is by making it more fun. They suggest the inclusion of games, such as puzzles; the inclusion of colouring materials and reading materials; as well as live entertainment.

7.3 Patient satisfaction and revisit intention

Public hospital management needs to maintain the professionalism of staff while creating a pleasant and conducive atmosphere in which to promote the health of their patients. Management need to maintain and embrace the responsiveness and degree of knowledge of the doctors and staff in public hospitals. Patients need to be assured of the support and dependability of medical staff when assisting patients; this might stimulate them to consider revisiting public hospitals.

The study indicated that the efforts made by public hospitals, when aiming to improve patient satisfaction through the alteration and improvement of servicescape dimensions, must include all aforementioned dimensions in the servicescape definition. The findings of Dharma *et al.* (2019:876)

have been reaffirmed, in that, client centricity is key to creating satisfied clients; this means that clients should be given top priority. Therefore, public hospital staff members who are mindful of their influence on patient satisfaction are likely to enhance patient perceptions of the servicescape, thus, increasing patient satisfaction and revisit intention. Social encounters with employees scored relatively high in terms of importance in the creation of patient satisfaction since the health and well-being of patients is vastly dependent on the flawless performance of hospital staff. Improving patient perceptions of service quality through enhancing the social dimension of a servicescape could possibly be achieved by increasing the degree of personal attention, and sympathy, provided by staff. Furthermore, efforts to ensure a social comfort level is established between patients, such as increasing the availability of space, establishing sufficient seating arrangements and formal queuing methods, will plausibly and indirectly increase patient satisfaction in a hospital environment. These methods will indirectly increase patient satisfaction, assuming that comfortable patients create a more satisfactory social experience for other patients. Efforts to improve employee satisfaction will indirectly improve patient satisfaction (Soleimani, 2018:11) since employees will then create a better social dimension of the servicescape for patients, therefore, augmenting their satisfaction.

When the service is provided in a satisfactory manner, consumers are likely to return to the establishment in future. It is further plausible, when looking at the results of the study, that the servicescape can be enhanced by ensuring hospital cleanliness, decoration, lighting, and climate control. Furthermore, ambient conditions can be managed by reducing noise, over-crowdedness and unpleasant odours experienced, as these problems influence patient perceptions of, and concomitant revisit intentions, the public hospital servicescape.

Being subjected to pleasant décor and navigating a hospital that has clear and informative signs and symbols make one's hospital stay easier. Furthermore, the hospital must be clean, neat and fully functional in order for consumers to perceive of the service quality as good enough for them to consider revisiting.

Furthermore, public hospital management could provide waiting areas and restrooms with leisure appeal, or they could have some mode of electronic information and entertainment (e.g. televisions, menu or sign boards, graphics, coffee bars, soup kitchens with occasional free coupons, etc.) that can be used to make one's stay in the health facility more bearable and satisfying; this could lead to patients revisiting these public hospitals.

8. Conclusions and Recommendations

The research results lead one to conclude that, when management undergoes efforts to enhance the servicescape of a public hospital, consideration must be directed towards various aspects of a servicescape and that no dimension (social encounter, ambient conditions, waiting time awareness and augmented waiting time) of the servicescape should be considered in isolation. This will likely enhance the probability that the augmentation of the public hospital servicescape will improve patient satisfaction and revisit intention. It is further suggested that managerial efforts to enhance the servicescape be pursued only once managers are cognizant of the servicescape elements and service quality elements relevant to, and most influential for, the public hospital client base. Thus, the elements of the servicescape that influence patient satisfaction, either positively or negatively, can be manipulated correctly in order to enhance patient service quality perception.

The following empirical results were identified:

- It appears that there is a statistically significant relationship between *Social encounters and the public hospital servicescape* ($H^{1.1}$ accepted).
- It appears that there is no statistically significant relationship between *Ambient conditions and the public hospital servicescape* ($H^{1.2}$ rejected).
- It appears that there is no statistically significant relationship between *Awareness of waiting time and the public hospital servicescape* ($H^{5.1}$ rejected).

- It appears that there is a statistically significant relationship between *Augmented waiting time and the public hospital servicescape* (H^{5.2} accepted).
- It appears that there is a statistically significant relationship between the *Public hospital servicescape and client satisfaction* (H⁶ accepted).
- It appears that there is a statistically significant relationship between the *Public hospital servicescape and revisit intention* (H⁷ accepted).

Table 6, below, highlights some recommendations concerning social encounters, augmented waiting time, client satisfaction and revisit intention.

Table 6: Recommendations regarding public hospital patients' impressions of the servicescape at Nelson Mandela Bay

No.	Recommendations on social encounters
1	Security guards should improve their service by ensuring that patients feel welcomed and safe. Furthermore, they should render the service promptly in public hospitals.
2	Some medical staff, and technology in use, in public hospitals should be made reliable by offering the necessary training or services to improve performance.
3	Medical staff should be trained to provide acceptable answers to patients' questions, in a manner that is understandable to the patient.
4	Medical staff should be trained to be calm, even when working in stressful situations.
5	Waiting areas should be improved, and made comfortable for patients.
6	Posters and media equipment should be checked regularly so as to ensure that they are still serving their intended purpose.
7	Lighting should be improved to ensure a conducive environment.
8	Symbols and artefacts within the public hospital environment should consider the diversity of cultures in South Africa.
No.	Recommendations on augmented waiting time
9	Staff at hospital or on-site restaurants and gift shops should improve their services by becoming friendly and helpful to patients.
10	The availability of retail outlets and restaurants would make waiting bearable.
11	Waiting rooms should be supplied with relevant and updated reading material.
No.	Recommendations on client satisfaction
12	If all medical staff can improve their service, patients would quite possibly return to the public hospital without any doubts.
13	If the atmosphere of the public hospitals are always kept clean, odourless and pleasant, then patients would gladly recommend public hospitals to their friends and families.
No.	Recommendations on revisit intention
14	The government should always make medication available – free of charge – to those who visit public hospitals, as this is what motivates some patients to continue visiting public hospitals despite the challenges experience there.
15	The government should provide alternative hospitals in the area, because a lack of such provision makes some patients reluctant to revisit a public hospital with which they are not happy.

9. Acknowledgements

The authors would like to acknowledge the contribution of two honours students in the Faculty of Business and Economic Sciences at the Nelson Mandela University, Mr Jason Desmond Miles and Mr Willem Buchner Human, who graduated in 2013.

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The Evaluation of Customer Experience at the East London Fresh Produce Market

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Keywords

Customer Experience;
Fresh Produce Markets;
East London.

Abstract

Fresh Produce Markets (FPMs) in South Africa generate a combined R15 billion per annum, by distributing over 3 million tons of fresh produce. FPMs support the United Nations Sustainable Development goal 2, which relates to food security and Zero Hunger by 2030. The main contributors to the success of FPMs are positive customer experiences, which promote customer loyalty. The objective of this study was to evaluate the customer experience at the East London Fresh Produce Market (ELFPM) in South Africa. The study followed a positivistic research approach and was quantitative in nature. A literature review on customer experience was conducted and a hypothesised conceptual model was developed and statistically evaluated, including exploratory factor analysis. The study made use of convenience sampling and data were collected using a standardised questionnaire, disseminated in hard copies and via e-mail. A total of 210 customers participated in this study. The results indicate that the independent factors of Brand Experience, Service Experience and Post-purchase/Consumption Experience all have a positive effect on the overall customer experience at the ELFPM. Furthermore, the statistical assessment suggested new factors of Product Quality and Range(s), Brand Experience(s), Empathy(s), Communication(s) and Facilities(s), which have a positive effect on customer experience at the ELFPM. The contribution of the study is practical managerial recommendations for the ELFPM.

1. Introduction

Customer experience (CX), a key marketing concept (Becker & Jaakkola, 2020), is an inclusive process that customers undergo consisting of their cognitive and emotional responses to both direct and indirect interaction with an organisation at a distinct time through various touchpoints on the customer journey (Varnali, 2018). The concept of CX reflects the behaviour of consumers based on how they perceive a specific organisation, which impacts on the organisation's bottom line (Klaus, 2020). CX serves as a strategic distinguishing factor that if improved, enhances the organisation's competitiveness in the market. Organisations have been placing CX at the centre of their business model by establishing customer touchpoints along their purchase journey (Maechler et al., 2016). Baxendale et al. (2015) identified six touchpoint types, namely brand advertising, retailer advertising, in-store communications, word-of-mouth, peer observation (seeing other customers) and traditional earned media. These touchpoints aid CX and include advertising, customer service, staff interaction and post purchase support.

Positive CX is directly related to customer satisfaction and loyalty, hence it is critical for organisations to improve CX to attract and retain customers (Mascarenhas et al., 2006). Organisations must understand the customer's perception of touchpoints during the pre-purchase, purchase and after-purchase stages. Organisations must continuously examine touchpoints along their customers' purchase journey.

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South African Fresh Produce Markets (FPMs) started out as meeting places between producers and consumers, where they could trade under the control of a government body. They were centrally located in towns and cities, enabling easy access. Their role is to provide facilities and assist commercial and small holder farmers to market their products, specifically fresh produce (Chikazunga et al., 2008). Historically, FPMs are supposed to play a role in food security, which is an important future goal for the United Nations Sustainable Development, Zero Hunger by 2030 (United Nations, nd).

FPMs were initially concerned that the hypermarkets and supermarkets in all parts of the country would reduce their competitiveness, which would ultimately see the collapse of FPMs (Richards & Patterson, 2003). Supermarkets are conveniently located and have a robust supply chain system that allows them to set non-competitive prices for their fresh produce. On the other hand, the supply chain of South African FPMs is characterised by uncertainty due to the lack of modern infrastructure and infrequency of transactions. This alienates the FPMs seeing consumers preferring reliable supermarkets, however some consumers are more interested in buying locally produced food (The Conversation, 2021). National FPMs are traditionally the largest distributors of fresh produce. Studying and improving national FPMs will benefit government, emerging farmers, informal traders and local communities. CX is one measure that could help the FPMs attract and retain customers to recover their lost market share.

2. Problem Investigated

Klaus (2020) postulates that CX studies offer the business world a deeper understanding of what influences customers' behaviour and the consequent effects it has on the organisations' performance. The research on the concept has enabled managers to improve and adapt touch points along the purchasing journey to fulfil customers' desires (Havíř, 2019). The problem statement of this research is that the factors influencing CX at the East London FPM have not been determined. Based on this significant value in studying CX, this study aims to determine the CX at the East London FPM in South Africa.

3. Research Objectives

The main research objective of the study was to evaluate the CX of customers at the East London FPM. The sub-research objectives of this study were as follows:

- Conduct an EFA to validate the factors (Figure 1) identified by Klaus and Maklan (2011) for the East London FPM;
- Conduct an EFA to determine additional factors that specifically influence customer experience (CX) at the East London FPM; and
- Propose two models, based on the two analyses conducted above, to improve CX at the East London FPM.

4. Hypotheses

The following hypotheses (H₁ to H₃) were developed based on previous studies by Klaus and Maklan (2011) and illustrated in Figure 1:

H₁: Brand Experience positively influences CX

H₂: Service Experience positively influences CX

H₃: Post-purchase/Consumption Experience positively influences CX

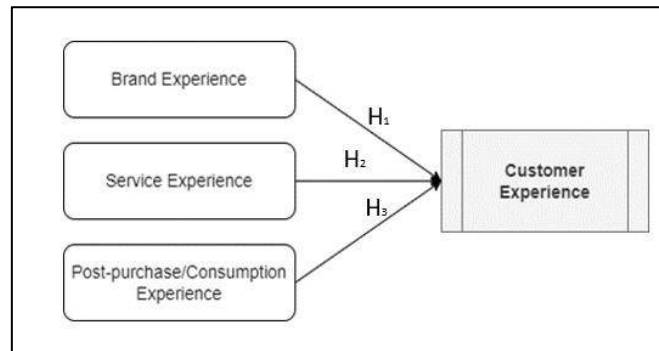


Figure 1: Hypothesised Model

5. Literature Review

CX is the measurement of interactions between service providers and a customer over a long period. The concept of CX was made popular by Holbrook and Hirschman (1982) and improved upon by Meyer and Schwager (2007). They refer to CX as the internal and subjective reaction of customers to direct or indirect interaction with an organisation. CX is about putting customer needs at the centre of what an organisation needs to do, ensuring that all touchpoints along the purchase journey are positive (Maechler et al., 2016). Touchpoints are where a customer interacts with the organisation's brand. This could be through employees, brand slogans and products and it occurs across multiple channels. Positive CX comes from providing excellence at every stage of the customer's journey (Bashir et al., 2015).

5.1. Fresh Produce Markets (FPMs)

The distribution of food in South Africa occurs through formal and informal channels (Chikazunga et al., 2008). Formal channels are dominated by a group of retailers and wholesalers, who use supermarkets for distribution, however the largest food distribution channel in South Africa remains the informal sector (NAMC, 2018). Owing to urbanisation, townships are highly populated and thereby create a high demand for food and the establishment of informal traders. The national FPMs were established with the objective of ensuring food security for local communities (Rathogwa et al., 2005). FPMs are owned and managed by local authorities, whilst regulated by national government. FPMs are an important determinant of food availability and access because markets are integrated price discovery platforms where price is determined by supply and demand (Baiyegunhi et al., 2018).

FPMs are faced with increasing competition by supermarkets and by retailers in the form of direct contracting suppliers in response to consumer demand for better quality (Louw et al., 2016). Supermarkets reduced the market share of markets and informal traders, as supermarkets are sourcing produce directly from farmers (Chikazunga et al., 2008). Supermarkets have established themselves in rural and township communities, taking business away from informal traders and markets. This may disturb government's objective of ensuring food security because unlike FPMs, retail prices tend to be fixed and not quickly moved by supply and demand (Richards & Patterson, 2003).

Wolf et al. (2005) stated that markets are a source of income for farmers. Farmers use markets as price setting mechanisms to determine the price of their produce (Louw et al., 2006). Prices at FPMs vary daily, based on quality and demand (Louw et al., 2006). Customers perceive the price variation to be an indication of which product is fresh, high quality and good value for money (Wolf et al., 2005). Supermarkets have certain conditions for farmers who supply them with fresh produce. These include quality, continuity of supply, packaging and storage, delivery and good production prices. They normally average pricing between the low and high prices (Cordes, nd). Proponents of supermarkets may argue price volatility is a disadvantage for farmers as it disturbs price forecasting.

Baiyegunhi et al. (2018) observed that price regulates the farmers' production and that price volatility benefits farmers, who can provide consistent supply throughout the year as prices even out over time (Rathogwa et al., 2005). Louw et al. (2006) noted that customers were unhappy with distances to get

to markets, shorter hours of operation and variation of food availability due to seasons. Markets must be accessible to buyers and sellers and barriers that prohibit participation of these stakeholders must be addressed (Rathogwa et al., 2005). One of the noted barriers is lack of information. Information on daily prices, demand and supply provides customers with better bargaining power.

Markets service a variety of customers, which include wholesalers, retailers, hawkers, processors, institutional buyers and consumers. Informal traders are regarded as an important category of customers because in South Africa, most consumers buy their goods from informal traders. According to Stats SA's latest Quarterly Labour Force Survey (Q4:2019 QLFS), approximately three million people, or 18% of employed people in South Africa, work in the informal sector. Of those, at least 14% appear to operate within the informal food trade sector (Melzer & Whitehead, 2020). Initially, informal traders were being displaced by the expansion of supermarkets (Chikazunga et al., 2008). This displacement could lead to a disruption in the fresh produce supply chain and would disadvantage low income communities and emerging farmers. FPMs remain the cheapest form of distribution for emerging farmers and informal traders.

The emergence of supermarkets in rural and township communities provides evidence that the existence of FPMs is threatened. FPMs need to reinvent themselves to ensure that they service their customers well to remain competitive. Therefore, it is important to study national FPMs because they are one of the largest distribution channels of fresh produce in South Africa and they play a big role in food security (Baiyegunhi et al., 2018). Studying and improving national FPMs will benefit government, emerging farmers, informal traders and local communities.

The focus on value-in-use, which arises from combining products and services results in CX blurring ordinary distinctions between products and services (Klaus & Maklan, 2011). CX comes from elements that service providers can control (e.g. service interface, atmosphere, assortment, price) and those outside their control (e.g. influence of other customers, smart phones that customers choose) (McColl-Kennedy et al., 2015). Favourable CX positively influences marketing outcomes such as customer loyalty, customer satisfaction and word-of-mouth behaviour (Kranzbuhler et al., 2018; Mascarenhas et al., 2006).

5.2. Customer Experience

The first recognition of CX was in 1982 when Holbrook and Hirschman introduced it in their discussion of consumption experience and hedonic consumption (Rather, 2018). Schmitt's (1999) seminal study proposed that experiences occur when customers encounter things, which provide relational, emotional, sensory, behavioural and cognitive values. Historically, organisations achieved differentiation through products, services and data collected on customers, but now CX is the new focus (Havíř, 2019). CX is founded on the notion that customers need satisfying experiences more than products. It is important to understand human behaviour by recognising the emotional aspects that are involved in purchase making decisions (Lemon & Verhoef, 2016).

Experience is different from goods and services, which means customer purchases include a series of memorable events. Klaus and Maklan (2013) highlight that understanding CX is important for market research because experience has replaced quality and become a new competitive battleground for marketing. Many managers have failed to define the scope, objectives and impact of CX for their business (Klaus, 2020). Becker and Jakkola (2020) advocate that CX research has focused on responses either to managerial stimuli or consumption processes.

Verhoef et al. (2009) trace the origins of CX as resulting from encounters involving a customer and the organisation or its product. Rather (2018) agrees that CX is a reaction that comes from encounters involving both the customer and the organisation. CX is influenced through perceptions from various direct and indirect interactions (Klaus, 2018). It is generated through a lengthy interactive process across multiple channels, generated through emotional and functional clues (Klaus & Maklan, 2013).

Verhoef et al. (2009) highlight CX as the customers' internal and subjective reaction towards the organisation. Interactions can be direct or indirect. Direct interactions occur when a customer purchases or uses a product or services. Indirect interactions occur through recommendations, reviews, criticisms, advertising and news reports. Other forms of interactions are customer care quality, brand packaging, advertising and service features, convenience of use and product reliability (Lemon & Verhoef, 2016).

Havíř (2019) introduces CX as encompassing the whole customer lifecycle of an organisation for an individual customer. It is one of the differentiation tools used by organisations to surpass competitors, secure a market position and create value. CX is the next evolutionary customer orientated approach following customer satisfaction and customer relationship management (Havíř, 2019). Rather (2018) compares CX to experiential marketing because it also requires customers to use their sensing, feeling and thinking abilities when relating to an organisation and its brands. Similarities between these processes are that they both involve cognitive evaluations and affective elements. Rather (2018) further adds that CX can be determined by price, promotions, assortment, social environment and atmosphere.

Understanding CX and the purchasing journey of each customer is important for organisations (Lemon & Verhoef, 2016). The interaction, through various touchpoints between customers and the organisation, makes CX social in nature. Organisations are now compelled to integrate many business functions and external stakeholders in creating and delivering a positive experience. Customer behaviour is complex and managers must prioritise the creation of a strong CX, to the extent of even appointing CX personnel.

Marketing theories identify three themes, the consumer buying behaviour, the process outcomes and customer centricity (Sharma, 2014). The first theme supports the discussion that CX is generated from the customer purchasing process. The second theme highlights the link between CX and behavioural outcomes. The third theme shows the management of CX with stakeholders inside and outside the organisation. According to Lemon and Verhoef (2016), CX stages can be conceptualised into prepurchase, purchase and post purchase. Prepurchase relates to customer interactions with the brand before purchasing, while purchase covers interactions with the brand during purchase and post purchase captures interactions after the purchase.

5.3. Measurement of Customer Experience

Paying attention to CX creates positive experiences and memories for customers and it improves customer satisfaction and loyalty. A loyal customer is defined as one who repurchases from the same service provider, recommends and keeps a positive attitude towards that service provider (Rather, 2018). Customer loyalty is closely linked to customer satisfaction and customer satisfaction has a ripple effect on future customer satisfaction and CX (Verhoef et al., 2009; Diebner et al., 2021). Measures of CX come from a combination of products and services and focus on providing value-in-use for customers (Klaus & Maklan, 2011). Lemon and Verhoef (2016) highlight that CX measurement plays an important role, making insights actionable for the organisations.

5.4. Brand Experience

Brakus et al. (2009) define brand experience as a multidimensional construct, triggered by consumer's exposures to brand related stimuli that can be traced back to their long-term memory. Ha and Perks (2005) explain that this exposure improves the customer's knowledge and familiarity with the brand and this experience has more impact than product features and benefits. Shamim and Butt (2013) describe brand experience as subjective, internal and behavioural responses evoked by brand related stimuli that are part of a brand's design, identity, packaging, communications and environments. Ong et al. (2018) explain that these internal responses are reflected through sensations, feelings and cognitions. These internal responses differentiate brand experience from brand evaluation, involvement, attachment, customer delight and brand personality (Brakus et al., 2009). Understanding the way consumers experience brands influences how organisations develop marketing strategies (Brakus et al., 2009).

Lemon and Verhoef (2016) refer to brand experience as the first touch point. It includes brand owned media like advertising, websites, loyalty programmes and any brand-controlled element of the marketing mix such as packaging, service and price. Klaus (2018) highlights that a positive brand experience increases the likelihood of repurchase and this could be as a result of its ability to generate brand credibility (Shamim & Butt, 2013).

Brand experience occurs whenever there is a direct or indirect interaction with the brand and can be expected or unexpected (Brakus et al., 2009). Klaus (2020) explains that CX is the cause and the brand is the effect, therefore, organisations must focus on managing CX more than brand perception. Brand developments that do not create value only increase customer expectations and can impact CX negatively or positively (Ciuchita et al., 2019).

5.5. Service Experience

Service experience occurs when a consumer interacts with an organisation's physical environment, its personnel and its policies or practices (Brakus et al., 2009). Service experience transcends service contact points and processes into customer relationships (Jüttner et al., 2013). Service experience is associated with service quality (Klaus, 2018) and it measures how atmospheric variables and personnel affect the experience delivered during a service (Brakus et al., 2009). Providing positive service experience brings economic value for organisations and managers must carefully manage customer touch points (Verhoef et al., 2009). The customer perception of CX is concerned with how the service is delivered instead of what service is delivered (Klaus, 2018). Klaus (2018) notes that a positive experience in this stage leads to customer loyalty.

5.6. Post-Purchase/Consumption Experience

Post-purchase experience starts after the purchase is done and ends with consumption, return or exchange of the product (Kumar & Anjaly, 2017). Post-purchase experience also referred to as consumption experience, is a multi-dimensional stage that includes hedonic dimensions such as feelings, fantasies and fun (Brakus et al., 2009). Post-purchase or consumption experience influences whether the customer will make the next purchase (Klaus, 2018; Kumar & Anjaly, 2017). Organisations can use post-purchase experience effectively through engaging customers in value creation by collecting customer feedback and recommendations and also participating in social networks (Haviř, 2019). Retailers are social environments and their social nature impacts CX (Verhoef et al., 2009).

Marketing outcomes and how organisations perform are determined by understanding the customer's view (Klaus, 2018). According to Klaus (2018), if post-purchase experience is positive, it leads to customer recommendations. Post-purchase experience significantly affects assurance about the product or brand (Kumar & Anjaly, 2017).

5.7. Academic Theory

Vargo and Lusch (2007) suggest that CX is influenced by Service Dominant Logic, which is organisation centric and managerially orientated. Wagas et al. (2021) propose that CX is based in Consumer Culture Theory where customer experiences are defined from the perspective of the consumers. In other words, how do they define and modify the meaning of their experiences. In the past, organisations created the meaning of experiences, which were passed onto consumers. The current focus of CX on customer centricity has moved to how consumers develop and interpret that experience. These theories emphasise the importance of evaluating CX.

6. Research Methodology

6.1. Research Design

The study followed a positivistic research paradigm, which is deductive in nature. A cross-sectional study using a quantitative survey was conducted using a questionnaire, which assessed the relationships between the three independent factors (IFs): Brand Experience (BX), Service Experience

(SE) and Post-purchase/Consumption Experience (PX) and the dependent factor (DF): Customer Experience (CX).

6.2. Sample and Data Collection

The target population of this study were all customers of the East London FPM in South Africa. At the time of the study, the East London FPM had over 9,000 customers on their database. A convenience sampling method was used. A standardised and validated questionnaire was obtained from Professor Philip Klaus from the International University of Monaco, a researcher and expert in CX (Klaus & Maklan, 2011; Klaus, 2018, 2020). The questionnaire was distributed online and by printed delivery-and-collection methods. The questionnaire was captured in the university survey tool, QuestionPro. The questionnaire consisted of a biographical section and closed-ended items to measure the DF and three IFs. The 6-point Likert scale was used, namely: “Strongly Disagree” (1), “Disagree” (2), “Neutral” (3), “Agree” (4), “Strongly Agree” (5) and “I Don’t Know” (6).

The questionnaire was sent via an email to the 9,000 customers registered on the East London FPM database through the Sales Manager’s Office and physically at markets, during trading hours. The questionnaire included a cover page explaining the purpose of the study, consent and anonymity. All data from the hard-copy questionnaires were captured on QuestionPro. Thereafter, data from QuestionPro were exported to Excel, which was followed by a process of coding. Incomplete records were discarded and a total of 210 customers fully completed the questionnaire. Thereafter, the statistical package, Statistica was used by the university statistician to conduct the statistical analysis. Full ethics clearance was obtained from the University Research Ethics Committee.

7. Results and Findings

7.1. Demographic profile of the sample

Table 1 provides the biographical information of the respondents (n=210). Most of the respondents (51%, n = 108) were households, followed by informal traders (27%, n = 57) and one respondent was a wholesaler. For data analysis purposes, the categories: informal trader, wholesaler, retailer, food outlet, NGO/Government and other were combined into ‘non-households’.

Table 1: Biographical information of participants (n=210)

Customer Category	Informal Trader	Wholesaler	Retailer	Household	Food Outlet	NGO/ Government	Other
	57 (27%)	1 (0.5%)	11 (5.5%)	108 (51%)	10 (5%)	4 (2%)	19 (9%)
Highest Qualification: Households	Less than Matric	Matric	Certificate/ Diploma	Degree/ Postgraduate Degree			
	27 (13%)	21 (10%)	30 (14%)	30 (14%)			
Highest Qualification: Non-Households	Less than Matric	Matric	Certificate/ Diploma	Degree/ Postgraduate Degree			
	22 (10%)	35 (17%)	24 (11%)	21 (10%)			
Gender by Age Category	18-29	30-39	40-49	50+			
Male	11 (5%)	23 (11%)	33 (16%)	18 (9%)			
Female	20 (10%)	42 (20%)	41 (19%)	22 (10%)			
Gender	Male	Female					
	85 (41%)	125 (59%)					

The results indicated that there was almost an even split between households and non-households. Households accounted for (51%, n = 108) of customers and non-households accounted for (49%, n = 102) of customers. This was in line with most South African communities because there are more households than businesses (Sinyolo et al., 2017). Half of the respondents (50%, n = 105) possessed a post-matric qualification and the least respondents (23%, n = 49) had less than matric. The results further showed that households had more post-matric qualifications (28%, n = 60) than non-households (21%, n = 45). Non-households had more matric qualifications (17%, n = 35) than

households (10%, n = 21). These results indicated that households were more qualified than non-households.

Furthermore, most customers were between the ages of 30 to 49 (66%, n = 139). The age of customers explained that mostly mature age groups shopped at the Fresh Produce Market. This could be because of the style of trading that is unique and different to supermarkets, which might not be familiar to younger age groups. In order to purchase at a FPM, you have to register as a buyer and apply for a quick coded buying card, which requires producing ID or a driver’s license (BCMM, 2022).

7.2. Exploratory Factor Analysis for Factors and Reliability

The Exploratory Factor Analysis (EFA) was conducted to analyse the item loadings of the factors. Initially, four factors were identified from literature and the questionnaire provided by Klaus and Maklan (2011), namely Brand Experience, Service Experience, Post-purchase/Consumption Experience and Customer Experience (Figure 1). A series of EFAs, one for each of the four factors in Figure 1 were conducted. The results of these analyses confirmed that the data fit the postulated model well. However, to explore the possibility that the observed data may reveal further factors related to customer experience, a series of EFAs were conducted for subsets of questionnaire items that appeared to be related to additional factors not included in the conceptual model (Figure 1). The results of this analysis revealed six factors instead of the four in the conceptual model. The four new factors were identified, namely Communication, Empathy, Facilities and Product Quality and Range. This resulted in a new revised model with six IF factors: Brand Experience, Customer Experience, Communication, Empathy, Facilities and Product Quality and Range (Figure 2).

The results reported in this section included EFA using the 4 original factors identified in previous studies by Klaus and Maklan (2011), and the additional IFs identified by the EFA in this study. Different items loaded onto the DF when the additional IFs were included in the EFA (Table 2). In Table 2, the items that loaded per factor after the EFA, together with the Eigenvalues and percentage of variance are explained. Factor loadings greater than or equal to 0.385 were deemed significant at the $\alpha = 0.05$ level for the sample size n = 210 in accordance with the recommendations by Hair et al. (2006). The Cronbach Alpha coefficient was used to measure the reliability of the measuring instrument, which were all above 0.7 ($\alpha \geq 0.7$). The factors in this study (Table 2) met the conditions of Zikmund et al. (2010), Collis and Hussey (2014) and Nunally (1978) for excellent reliability ($\alpha \geq 0.7$).

Table 2: Factors and items included after EFA

	Factors and Items	Factor loadings	Cronbach alpha	Eigenvalue	Variance (%)
Initial Factors	IF1: Brand Experience		0.90	4.425	63.2%
	My Fresh Produce Market’s offerings have the best quality.	0.875			
	The people who work at my Fresh Produce Market represent their brand well.	0.832			
	I am confident in my Fresh Produce Market’s expertise.	0.831			
	My Fresh Produce Market’s offerings are superior.	0.821			
	My Fresh Produce Market offers a variety of products that suit my needs	0.751			
	My Fresh Produce Market gives independent advice (on which product/service will best suit my needs).	0.738			
	The Fresh Produce Market has a good reputation.	0.702			
	IF2: Service Provider Experience		0.90	5.943	49.5%
	Dealing with my Fresh Produce Market is easy.	0.799			
	The people I am dealing with (at my Fresh Produce Market) have good people skills.	0.780			
	My Fresh Produce Market’s personnel relate to my wishes and concerns.	0.773			
	My Fresh Produce Market demonstrates flexibility in dealing with me.	0.763			

Additional Factors after the EFA	My Fresh Produce Market delivers a good customer service.	0.751			
	My Fresh Produce Market advises me throughout my shopping experience.	0.718			
	My Fresh Produce Market keeps me informed.	0.703			
	My Fresh Produce Market's online facilities are designed to be as efficient as possible (for me).	0.689			
	My Fresh Produce Market uses social media to keep me informed.	0.670			
	My Fresh Produce Market's facilities are better designed to fulfil my needs than their competitors	0.619			
	I have built a personal relationship with the people at my Fresh Produce Market.	0.586			
	My Fresh Produce Market's offline facilities are designed to be as efficient as possible (for me).	0.542			
	IF3: Post-purchase/Consumption Experience		0.89	4.303	61.5%
	My Fresh Produce Market knows exactly what I want.	0.850			
	My Fresh Produce Market keeps me up to date.	0.831			
	Being a client at/customer of my Fresh Produce Market gives me social approval.	0.825			
	I stay with my Fresh Produce Market because they know me.	0.784			
	My Fresh Produce Market will look after me for a long time.	0.783			
	My Fresh Produce Market deal(t) well with me when things go(went) wrong.	0.762			
	I am happy with my Fresh Produce Market as my service provider.	0.632			
	DF: Customer Experience		0.91	3.674	73.5%
	My Fresh Produce Market is the best	0.915			
	My Fresh Produce Market is a great brand.	0.908			
	My Fresh Produce Market provides a great customer experience.	0.865			
	There are other shops, but I would rather stay with mine; it makes it much easier.	0.835			
	I intend to shop here for a long time.	0.754			
	IF4: Brand Experience(s)		0.87	3.302	66%
	My Fresh Produce Market is a great brand.	0.878			
	The people who work at my Fresh Produce Market represent their brand well.	0.876			
	I am confident in my Fresh Produce Market's expertise.	0.812			
Being a client at/customer of my Fresh Produce Market gives me social approval.	0.771				
The Fresh Produce Market has a good reputation.	0.714				
IF5: Communication(s)		0.84	3.358	56%	
My Fresh Produce Market keeps me informed.	0.834				
My Fresh Produce Market keeps me up to date.	0.800				
My Fresh Produce Market advises me throughout my shopping experience.	0.729				
My Fresh Produce Market demonstrates flexibility in dealing with me.	0.728				
My Fresh Produce Market gives independent advice (on which product/service will best suit my needs).	0.710				
My Fresh Produce Market uses social media to keep me informed.	0.677				
DF: Customer Experience(s)		0.92	4.71	67.3%	
My Fresh Produce Market provides a great customer experience.	0.878				
My Fresh Produce Market is the best.	0.878				
There are other shops, but I would rather stay with mine; it makes it much easier.	0.829				

Dealing with my Fresh Produce Market is easy.	0.826			
My Fresh Produce Market delivers a good customer service.	0.799			
I am happy with my Fresh Produce Market as my service provider.	0.792			
I intend to shop here for a long time.	0.731			
IF7: Empathy(s)		0.86	3.893	55.6%
My Fresh Produce Market knows exactly what I want.	0.823			
I stay with my Fresh Produce Market because they know me.	0.785			
My Fresh Produce Market deal(t) well with me when things go(went) wrong.	0.772			
My Fresh Produce Market will look after me for a long time.	0.753			
I have built a personal relationship with the people at my Fresh Produce Market.	0.739			
My Fresh Produce Market's personnel relate to my wishes and concerns.	0.670			
The people I am dealing with (at my Fresh Produce Market) have good people skills.	0.665			
IF8: Facilities(s)		0.72	1.928	64.3%
My Fresh Produce Market's offline facilities are designed to be as efficient as possible (for me).	0.873			
My Fresh Produce Market's online facilities are designed to be as efficient as possible (for me).	0.831			
My Fresh Produce Market's facilities are better designed to fulfil my needs than their competitors	0.690			
Product Quality & Range(s)		0.85	2.303	76.8%
My Fresh Produce Market's offerings have the best quality.	0.922			
My Fresh Produce Market's offerings are superior.	0.901			
My Fresh Produce Market offers a variety of products that suit my needs	0.801			

7.3 Frequency Distribution of Factors

The measurement items have been grouped to indicate the measure of central tendency and the scores for the factors that were categorised in accordance with the 6-point Likert scale (Table 3). In this study, the Likert scales were combined for “Strongly Disagree” with “Disagree” to form “Negative”, “Agree” with “Strongly Agree” to form “Positive” as well as “Neutral” with “I Don’t Know” to form “Neutral”. Thus, after combining the scales, the categories were as follows: Negative (1.00 to 2.59), Neutral (2.60 to 3.40) and Positive (3.41 to 5.00). The mean, standard deviation and highest score per factor is indicated in red (Italics) in Table 3.

Table 3: Frequency Distributions of Factors (n = 210)

Factors		Mean	S.D.	Negative 1.00 to 2.59		Neutral 2.60 to 3.40		Positive 3.41 to 5.00	
Initial factors	IF: Brand Experience	3.95	0.66	13	6%	18	9%	179	85%
	IF2: Service Experience	3.48	0.67	18	9%	70	33%	122	58%
	IF3: Post Purchase/ Consumption Experience	3.61	0.72	24	12%	45	21%	141	67%
	DF: Customer Experience	3.93	0.72	9	4%	29	14%	172	82%
Factors after EFA	IF4: Brand Experience(s)	3.85	0.72	13	6%	30	14%	167	80%
	IF5: Communication (s)	3.40	0.74	28	13%	67	32%	115	55%
	IF6: Empathy(s)	3.64	0.69	23	11%	37	18%	150	71%
	IF7: Facilities(s)	3.18	0.83	30	14%	116	55%	64	31%
	IG8: Product Quality and Range(s)	4.02	0.71	7	3%	34	16%	169	81%
	DF: Customer Experience(s)	3.94	0.66	9	4%	24	12%	177	84%

The responses to the items within the Product Quality and Range(s) factor possessed the highest mean value $\mu = 4,02$ when compared to the responses for Facilities(s), which had a mean value $\mu = 3,18$ (S.D. =0.83). None of the factors obtained a negative mean score (Table 3). Communication(s) obtained a mean of 3.40, falling within the neutral range and thus revealing ambivalence between the respondents and a potential area of improvement. The standard deviation for the factors was relatively small, in the range of 0.66 and 0.85, implying that the responses did not vary greatly between the respondents.

As illustrated in Table 3, almost all the factors received the highest portion of positive responses. Five of the factors obtained very positive scores of at least 80%, namely: Brand Experience (85%, $n = 179$), Customer Experience (82%, $n = 172$), Brand Experience(s) (80%, $n = 167$), Product Quality and Range(s) (81%, $n = 169$) and Customer Experience(s) (84%, $n = 177$). Two factors received positive responses above 65%, namely: Empathy(s) (71%, $n = 150$) and Post Purchase/Consumption Experience (67%, $n = 141$). The factors, Service Experience and Communication(s) received moderate positive response at 58% ($n = 122$) and 55% ($n = 115$) respectively. Facilities(s) received a moderate neutral response of 55% ($n = 116$).

7.4. Inferential Statistics of the Factors

Inferential statistics were conducted to make (1) generalisations about the population, (2) for comparison, testing and prediction and (3) to make conclusions about the population.

7.4.1 Pearson Correlations

In order to determine the relationship between the set of factors, a Pearson's Product Moment Correlation analysis was performed (Table 4). The analysis shows that Customer Experience of East London Fresh Produce Market customers was positively correlated ($|r| > .300$) with all the IFs, which indicated statistical and practical significance. Table 4 indicates the correlations between the initial 4 factors (Figure 1) and the six new factors identified by the series of EFAs. Furthermore, all the independent factors had positive correlations with each other ranging from medium (+0.40 to +0.69) to high (+0.70 to +0.89) positive correlations.

CX is about putting customer needs at the centre of what an organisation needs to do, ensuring that all touchpoints along the purchase journey are positive (Maechler et al., 2016). The correlations suggest that the IFs are positively perceived by the customers of the East London FPM. However, to determine whether the IFs are related to the DFs, a chi-square test was performed followed by a Cramer's V to determine the strength of the association.

Table 4: Pearson product-moment correlations between the DF, Customer Experience and the IFs

Independent Factors (IF)	Correlation r with Customer Experience (DF) old factors	Correlation r with Customer Experience(s) (DF) new factors
IF1: Brand Experience	.805	
IF2: Service Provider Experience	.834	
IF3: Post Purchase/ Consumption Experience	.701	
IF4: Brand Experience		.867
IF5: Communication		.758
IF6: Empathy		.751
IF7: Facilities		.591
IF8: Product Quality & Range		.800
<i>IF = independent factor; DF = dependent factor</i>		

7.4.2 Chi² Tests - Customer Experience related to the other Factors

The university statistician performed a chi-square (χ^2) to establish independence, which compares two variables in a contingency table to see if they were related. Thus, determining whether no relationships exists between the IFs and the DFs at a statistical significance level of 0.05 (where $p < 0.05$). Furthermore, the Cramer's V was calculated, which measures the strength of association. Table 5 shows that most of the IFs have a strong (large) association with the DFs except for Facilities(s), which has a medium association.

Table 5: Results for the Chi² Tests - Customer Experience and Customer Experience(s) related to the IFs

Independent Factors		Customer Experience/ Customer Experience(s)		
		(χ^2) (d.f = 4; n = 210)	p-value	Cramer's V and practical significance
Initial IFs	IF1: Brand Experience	156.94	$p < .0005$	0.61 Large
	IF2: Service Provider Experience	171.92	$p < .0005$	0.64 Large
	IF3: Post Purchase/Consumption Experience	114.54	$p < .0005$	0.52 Large
Additional IFs factors after EFA	IF4: Brand Experience	193.79	$p < .0005$	0.68 Large
	IF5: Communication	82.24	$p < .0005$	0.44 Large
	IF6: Empathy	108.42	$p < .0005$	0.51 Large
	IF7: Facilities	46.56	$p < .0005$	0.33 Medium
	IF8: Product Quality & Range	145.49	$p < .0005$	0.59 Large

Source: Own compilation

7.5. Hypothesised Model

The statistical analysis demonstrated that the three initial independent factors of Brand Experience, Service Experience and Post-purchase/Consumption Experience each exhibit a significant positive effect on Customer Experience. In addition, the Pearson Moment correlations as illustrated in Table 4 indicated that these factors are all positively correlated ($r > .300$) to Customer Experience. The chi-square test (χ^2) indicated that the three initial IFs were related and the subsequent test for association strength (Cramer's V) indicated a large practical difference (Table 5).

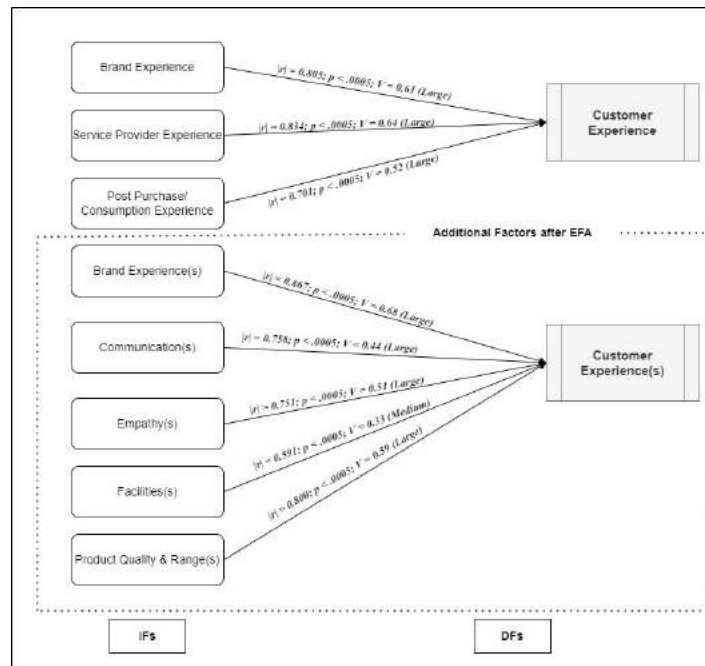


Figure 2: Final hypothesised model of independent factors influencing Customer Experience
Source: Own compilation

The statistical analysis further demonstrated that the five new independent factors of Brand Experience(s), Communication(s), Empathy(s), Facilities(s) and Product Quality and Range(s), each exhibit a significant positive effect on Customer Experience(s). Furthermore, the chi-square (χ^2) test showed statistically significant relationships and Cramers V indicated strong associations between the IFs and DFs. Figure 2 presents the final hypothesised model based on the results from the Pearson's Moment Correlations and chi-square (χ^2) Tests.

8. Managerial Implications

The purpose of these recommendations is to assist and improve managerial decision-making related to CX in the East London FPM. Satisfying customers and building loyalty is an important component for any marketing strategy. As such, generating positive CX and ensuring that all touchpoints are customer focused, is likely to enhance future business growth and increase profitability. According to Meyer and Schwager (2007), products or services alone are no longer sufficient to ensure customer loyalty and customer satisfaction.

According to Havř (2017), organisations find it difficult to assume the role of the customer when analysing CX. This failure results in limitations for organisations to fully understand and appreciate the emotional, social and cognitive responses that co-create meaningful customer experiences. Additionally, the introduction of the digital age and the multitude of touchpoints available, have resulted in increased interaction with customers (Cao & Li, 2015). This poses a challenge for CX management.

Efforts must be made to provide positive experiences for customers by managing all cues that individuals encounter in the purchasing process. Therefore, the East London FPM must look beyond products or services to improve its business. Below are the recommendations that can be used by decision-makers, managers and leaders within the East London FPM.

Brand Experience - The results of the study indicated that customers were positive about the brand experience provided by the East London FPM. Therefore, managers, leaders and decision makers operating within the East London FPM should develop strategies to maintain or improve the existing positive reputation. Strategies include the recruitment of best talent; staff development through

training programmes, mentorships and industry exposure and touchpoints through follow up calls and emails, customer service points and entrance/exit controls. Additionally, organisations should also maintain variety of products and quality offerings and this would require efforts to better understand future consumer requirements.

Service Experience - This study indicated that customers were satisfied with service experience provided by the East London FPM, which was supported by the statistical analysis. Verhoef et al. (2009) assert that service experience is a customer's subjective response to or interpretation of any direct or indirect encounter with a service. According to Jaakkola et al. (2015), service experience includes service provider representatives who experience the service and other people in the social experience network. Therefore, service experience occurs in a multi-stakeholder ecosystem.

Management should design and implement training sessions to develop personnel for improved service experiences. Individuals who deal directly with customers should understand the meaning of creating positive service experience. Building relationships with customers should be prioritised. This would result in a better understanding of customers and their expectations.

Post-purchase/Consumption Experience - The results in this study suggested that most customers are satisfied with the post-purchase experience provided by the East London FPM. However, there are opportunities for improvement to ensure customer retention as noticed by the frequency distributions of responses. Therefore, managers, leaders and decision makers should find ways to maintain and improve the existing positive perception of the post-purchase/consumption experience. Customers of the FPM are likely to return if the FPM ensures that the consumption experience includes the management of after-sales queries, complaints and feedback.

Communication - The results of the study indicated that most customers were positive about communication provided by the East London FPM. Strategies to improve the existing communication should be focused on as the frequency of responses showed ambivalent ($n = 67$; 32%) responses as well. For example, markets should consider marketing teams, which comprise of talented individual(s) to manage marketing activities. The team would communicate with customers, control the suggestion box, launch surveys and handle social media accounts; and develop communication channels to speed up communication.

Empathy - Empathy showcased strong positive correlation ($r = 0.751$) with CX. The Oxford dictionary defines empathy as *the ability to understand and share the feelings of another*. The results of the study indicated that customers were positive about empathy provided by the East London FPM. Thus, managers, leaders and decision makers operating within the East London FPM should develop strategies to improve customer empathy. Strategies can include helpdesks to handle queries and complaints and the training of frontline personnel to aid in client care to achieve retention.

Facilities - Facilities showcased medium positive correlation ($r = 0.591$) with Customer Experience. Notably, FPMs have a traditional style that is different to supermarkets or any other similar business. This may suit the current customers but to attract more customers, an upgrade of facilities may be required. The upgrade can be an improvement to accommodate current business processes or a complete change, which will improve the shopping environment of the FPM. Infrastructure backlogs on markets should be addressed and a detailed needs assessment undertaken. The suitability of the current location as well as the structure of FPMs should also be reviewed (NAMC, 2018).

Product Quality and Range - The results of the study indicated that customers were positive about product quality and range provided by the East London FPM. Therefore, it is advised that the FPM should regularly assess demand to establish products that are in demand to ensure that a wide variety is always provided to customers. The literature suggested that customers become frustrated with the variation in products due to seasons. Therefore, managers should source products throughout the year to maintain availability. Managers should further ensure that all products are of good quality. This can

be done through appointing a quality controller to provide grading and quality inspections as products should be classified according to quality and grade.

Against this background, the FPM should create and implement efforts to maintain and improve its CX, such as technology adoption to improve customer experience. The experience with the brand should remain pleasant and memorable as customers demand positive experiences rather than just a transactional relationship. To gain advantage against competitors, the FPM must deliver a delightful CX, centred on the needs of the customer.

9. Conclusions, Limitations and Future research

FPMs are one of the largest distribution channels of fresh produce in South Africa and they play an important role in food security (Baiyegunhi et al., 2018). FPMs are confronted with increasing competition from supermarkets and other retailing outlets, specifically when these competitors purchase directly from suppliers (Louw et al., 2016). Most consumers are loyal to their preferred organisations and managers should consider ways to improve the perception of reciprocated loyalty. In other words, customers should be certain that organisations consider their intentions and needs. Many channels are available through which organisations can interact with customers and it is most important that these channels are synergised to offer a seamless experience throughout the purchase journey. Carefully considering every stage of the purchasing journey and ensuring that every stage provides superior services, ensures that customers are enjoying a pleasurable CX (Lemon & Verhoef, 2016). Brand Experience, Service Experience and Post-purchase/Consumption Experience collectively contribute to ensuring a holistic approach to value creation.

This study has contributed to the research on CX by adding the additional factors of Brand Experience, Communication, Empathy, Facilities and Product Quality and Range, which were found to be statistically and practically significant with the dependent factor customer experience. The support of the factors to CX presents insights as to how experiences can influence consumer behaviour and loyalty while supporting the Consumer Culture Theory in that CX is interpreted by the consumer. Therefore, management must be cognisant of the expectations of customers in terms of the factors they deem important for their experience at the East London FPM.

The limitations of this cross-sectional study were that it was only conducted at the East London FPM and due to time and resource constraints, had limited responses from East London consumers. This means that the findings may not be representative of all FPMs in South Africa, thus it is advised to repeat the study in other FPMs in South Africa to validate the findings. It is also recommended that a similar study be conducted if the FPM decides to offer an online trading facility.

The final hypothesised model (Figure 2) requires additional research to establish its validity and usability as an effective means to establish and monitor CX both locally and internationally. Such a replication will overcome possible sampling bias and future research should repeat the survey with a larger sample size while controlling certain demographic variables to determine statistical and practical significant differences.

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The Influence Of Employer Branding and Social Media Presence On Employee Attraction Among Young Adults: A South African Retail Sector Perspective

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Keywords

Employer branding; retail sector; young adults

Abstract

Employer branding aims to create an appealing work environment for potential employees. The retail sector is the second largest employment sector in the South African economy. The sector continues to report large skills shortages, which need to be considered against the backdrop of South Africa's escalating unemployment rate, which was at 34.5 per cent in the first quarter of 2022. Uncertainty over the employer attributes that attract talent into the sector, and negative perceptions of the retail sector, contribute to the skills shortage and threaten its sustainability. This study aims to determine the influence of employer branding and social media presence on the employer's ability to attract and recruit young adults into the FMCG retail sector of South Africa. The study targeted a sample of 378 young adults mainly from Gauteng: using a seven-point Likert-scale, an online questionnaire required respondents to indicate their level of agreement or disagreement relating to the five attributes of corporate attraction (employer innovation, development, social environment, economic benefit, and application value) of retail organisations. The results suggest that social environment, innovativeness, and application value attract young adults to retail employers, and that employers should not focus only on social media to communicate with potential young adult employees.

1. Introduction

Attracting the best talent in the market is likely to position an organisation ahead of the competition and increase its ability to reach its goals and objectives (Santos *et al.*, 2019). Employer branding builds the perception of the organisation with the objective of creating an attractive work environment among the current and potential workforce with the intent to attract and retain talent (Rai, 2019). In today's highly connected world, the organisation's online and social media presence is a strategic part of creating and sharing organisational branding messages relating to the work environment (Tajvidi and Karami, 2017). An organisation can set itself apart from competitors by using skilled employees as their competitive advantage, thus bringing about the notion of employees being part of the competitive strategy, therefore, contributing to financial performance (Mouton and Bussin, 2019).

One-third of the South African population is between 18 and 34 years old (Stats SA, 2019). These young adults form the largest part of the current and the future workforce. This highlights the importance of employers understanding the preferences of this cohort to attract top talent. Individuals born in the same period share similar values and expectations and behave similarly (Cismaru and Iunius, 2019). Young adults demand greater personalisation in their job; therefore, for businesses to be able to attract and retain young workers, they must adopt a different mindset when approaching this generation. In attracting the younger generation, employers must adapt to the rapid evolution of

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the external environment; so, they need to create programmes that develop their younger employees to attract and retain employees (Deloitte, 2021). This generation wants to ensure that their time at work contributes equally to the employer's success and to their interests outside of work. Thus, they want a flexible schedule (Ryan, 2017).

South Africa continues to report high unemployment rates. Unemployment was at 34.5 per cent in the first quarter of 2022 (Stats SA, 2022) – an increase from 32.6 per cent in the last quarter of 2020 – with young adults accounting for 63.3 per cent of the unemployed (Stats SA, 2021a). These levels of unemployment are the highest since records began to be kept in 2008, while an increasing number of young adults are trying entering the labour market. High levels of unemployment are not only found among uneducated South Africans. Nonyana and Njuho (2018) report unemployment levels among young graduates to be as high as 40.3 per cent. In contrast, the retail sector of South Africa – the second-largest sector in terms of the provision of employment (Buthelezi, 2020) – continues to report high levels of skill' shortages. Thus, the sustainability of the retail sector is at risk due to the skills shortage, mainly because of technological developments, such as big data, artificial intelligence, and omnichannel retailing (Ferreira *et al.*, 2020; Mahmoud *et al.*, 2020; Frazer and Stiehler, 2014).

There are many misperceptions about the retail sector, one of which is that its workers do not require a lot of formal training and that it consists of basic jobs only (Malgas *et al.*, 2017). Further, according to Heidig *et al.* (2017), the negative factors that are most closely associated with the South African retail sector include long working hours, low skill levels, few opportunities for growth, and lower levels of remuneration. With all these factors being associated with the retail sector, attracting highly skilled employees becomes difficult; and this is where employer branding comes into play. For young adults, technology plays a vital role in the communication of corporate brands (Kirchmayer and Fratričová, 2020). In the South African setting, retail organisations need to adapt their employer branding and attractiveness to gain some level of interest from young adults if they wish to fill their skills shortage and remain effective and competitive.

Given the importance of employee branding and the need for skills in the South African retail sector, the main objective of this study is the following:

To determine the influence of employer branding and social media presence on the employer's ability to attract and recruit young adults into the retail sector of South Africa.

The contribution of the study is twofold. First, this paper is an empirical investigation in a South African context in which the influence of employer attributes on the intention of young adults to apply for employment - in the retail sector – with the moderating effect of the employer's social media presence – is explored. Second, the study adds uniquely to the academic and managerial understanding of the influence of corporate reputation and social media presence on young adult graduates' intention to apply for employment at a Fast Moving Consumer Goods (FMCG) retailer in the sector.

The organisation of this paper is as follows: the problem investigated in the study is described, followed by the research objectives. The literature review is then presented, which consists of a brief discussion of the need for employer branding in the retail sector, corporate reputation, social media presence, and young adults, and concludes with a discussion of the conceptual model that guides the hypothesis of this paper. In the research methodology section, the methodological choices of the study are described. Finally, the results and findings are presented, followed by the managerial implications and the conclusions.

2. Problem investigated

Research on the influence of employer branding and social media presence on young adults' intentions to apply for employment in the retail sector is limited (Bilińska-Reformat and Stańczyk, 2018; Santiago, 2019) and in particular is not focused on young adults in South Africa. Uncertainty remains about the influence of the corporate attributes and social media presence of an organisation

on the intentions of young adults to apply for employment at a FMCG retailer in the sector. A study by Hadi and Ahmed (2018) focused on the contribution of employer branding towards making an organisation more attractive to employees, but it was limited to educational institutions. This study aims to provide insights into the retail sector, as retailers need to appeal to the younger generation to attract talented graduates into the sector in order to combat the current skills shortages. Recent studies have not explored employer branding in depth to identify which areas of employer branding hold the most value for potential employees (Gilani and Cunningham, 2017). Gaining a better understanding of which attributes young adults consider important and of the role that a social media presence plays relating to the corporate reputation of potential retail employers, is important for the sector's sustainability. Retail organisations may thus be able to appeal more effectively to young adult graduates if they have a better understanding of the important attributes of corporate reputation and the role of social media presence in future employees' intention to apply for employment.

3. Research objectives

This study's main research objective is to determine the influence of employer branding and social media presence on the retail employer's ability to attract and recruit young adults into the retail sector of South Africa.

In order to achieve that aim, the study has the following sub objectives:

- To determine the influence of each of the retail employer branding attributes on the attractiveness of employers in the South African retail sector.
- To investigate whether the employer's social media presence moderates the relationship between young adults' perceptions of the employer's corporate reputation and young adults' intention to apply to work at a FMCG retail organisation within the South African retail sector.

4. Literature review

4.1. Need for employer branding in the South African retail sector

The retail sector consists of organisations in the economy that focus their business activities on the resale of new and used goods to individual consumers or households (Statistics South Africa, 2021b). The retail sector is one of the most important contributors to South Africa's GDP, employing more than 21 per cent of the total workforce (W&RSETA, 2021). The retail sector covers a broad range of organisations, which main business activities consist of the sale, and resale of goods to end consumers. Fast Moving Consumer Goods Retailers (FMCG) also classified as General dealers represent 42, 5 % of the South African retail sector sales (Stats SA, 2021^b). The top 5 retailers in South Africa according to Deloitte for 2022 are mainly FMCG retailers and include; Shoprite Holdings Ltd, Steinhoff International Holdings N.V., The SPAR Group Limited, Pick n Pay Stores Limited and Woolworths Holdings Limited (Deloitte, 2022). Furthermore, the previous study that guided this research also indicated that soon-to-be graduates as future employers (Frazer et al., 2021) preferred several FMCG retailers.

Given that, in the South African context, the retail sector is viewed as undesirable (Heidig, *et al.*, 2018), employee perceptions must be improved. Overcoming the belief that there are no growth opportunities in the South African retail sector calls for effective employer branding, because these perceptions need to be changed if the sector is to attract the highly skilled employees it needs (Malgas *et al.*, 2017). Employer branding also contributes to the strategic success of an organisation by increasing its competitiveness in the employment market. Organisations can enhance their sustainable competitive advantage with the accurate management of human capital, thus making them more sustainable.

4.2. Resource-based Theory

Resource-based theory suggests organisations with rare, valuable resources will have a better competitive advantage and better long-term sustainability, these resources may include physical assets, intellectual property and employees (Gibson *et al.*, 2021). Therefore, attracting better employees supports the resource-based theory (Backhaus and Tikoo, 2004) that sustainable competitive advantage is obtained when resources are rare, valuable and inimitable. Overcoming the challenges faced by retail organisations in attracting and retaining highly qualified and motivated employees around the world, but particularly in South Africa is a key part of ensuring the future sustainability of

the sector. As a result, knowledgeable employees – a critical source of competitive advantage in the retail sector – are scarce (Arenkov *et al.*, 2019). The premise is that organisations should aim to attract the best possible employees so that the human capital adds value and enables the organisation to use its resources better (Dabirian *et al.*, 2019).

Employer branding is described as a method used by employers to attract potential employees by communicating the benefits of a workplace and the unique features of the work environment to them (Ghosh and Kulshrestha, 2016). Therefore, employer branding aims to make the organisation more desirable to work for, by highlighting the unique offerings of the organisation through employment and growth opportunities (Eger *et al.*, 2019). Employer branding includes both internal and external branding efforts and aligns the external brand image with internal employee convictions. Thus, external employer branding extends beyond marketing the organisation's value proposition and corporate brands in order to attract potential employees.

4.3. Corporate reputation

Corporate reputation can be described as stakeholders' overall perception of an organisation and is largely based on its past actions as well as the expectations that people have for its future actions (Pires and Trez, 2018). Corporate reputation is important, as it contributes directly to the credibility of the organisation and to the level of trust that stakeholders have in it (Studiowide, 2016). A good corporate reputation will enhance the ability of the organisation not only to retain its current employees but also to attract the best possible employees because it will have values that align with those of the best prospective candidates (Gözükara and Hatipoğlu, 2016; Schaer, 2020).

As this study focused on corporate reputation in the context of attracting talent, the dimensions that build a corporate reputation among potential employees need to be considered. The dimensions of employer attractiveness, as measured using the EmpAt scale, are employer innovation, development, social environment, economic benefit and application value (Berthon *et al.*, 2005). 'Employer innovation' relates to the interest value of the product and service that the organisation produce or sells. The 'development' attribute considers the perceived opportunity to build skills and grow in the organisation. The working environment and corporate culture constitute the social environment and the economic and potential compensation benefits the organisation offers. The last attribute concerns employees' ability to apply their skills and to transfer them to others in the organisation. However, the retail sector as an employer is perceived negatively because the work environment is characterised by store-based activities that require little education and long hours, which offer low pay, include repetitive and boring tasks, and offer little opportunity for advancement (Heidig *et al.*, 2017).

The most notable attributes that build a corporate reputation are high levels of performance and effective communication (Cutting Edge PR Insights, 2020). Good corporate reputation, therefore, is a product of both external and internal branding communication; internal branding is aimed at current employees, and emphasises organisational values and goals to strengthen corporate reputation internally (Barros-Arrieta and García-Cali, 2021). Job seekers frequently consider current employees' views when they are planning to apply for employment, and they might also consider those employees' views of the company's corporate reputation and working conditions (Ahmad Azmy, 2018). As the popularity of social media has grown, many organisations have been using social media to engage and enhance their corporate reputation (Becker and Lee, 2019).

4.4. Social media presence

Organisations' use of social media expands beyond its customers to include current and potential employees and includes a wide range of goals and objectives. Social media have been effective in creating a positive brand image among both external and internal stakeholders (Szwajca, 2017). Social networks are therefore an effective tool for organisations to engage with current and prospective employees (Rana and Kapoor, 2016). The term 'social media' covers a range of software-based digital technologies that will allow users to send and receive digital content or information through some kind of online social network. The most common social media applications are Facebook, Instagram, LinkedIn, Twitter, Pinterest, WhatsApp and YouTube, they are powered by user-generated content

and are important in contexts of marketing and corporate brand perceptions (Kapoor *et al.*, 2018). By their very nature, social media have the ability to spread information quickly (Szwajca, 2017). In 2020, more than 50 million organisations had a Facebook business account (Olanrewaju *et al.*, 2020).

Furthermore, many organisations use their accounts on social media to advertise employment opportunities and many report a positive influence on their reputation (Grzesiuk and Wawer, 2018). Social media, therefore, have evolved to be a strong career-hunting platform. Facebook is at the forefront, with 67 per cent of people looking for work on social media using it (Jobvite, 2018). The social media presence of an employer may be key to attracting the younger generation of the retail workforce. Over the past decade, social media have grown in popularity and come to serve as a significant source of information. Their use in the recruiting process appears to have grown tremendously (Koch *et al.*, 2018). The younger generation has embraced social media: in South Africa, 57.4 per cent of social media users are aged from 18 to 34 years (Statista, 2021).

4.4. Young adults

Young adults (18- to 34-year-olds) are the fastest-growing population group in Africa (Maskaeva and Msafiri, 2021), and fall mainly into two generational cohorts: millennials and Generation Z (Gen Z). Generational theory groups individuals together into age cohorts on the premise that they have shared histories and similar experiences that shape their behaviour and world view (Jauregui *et al.*, 2020). The millennial generation was born between 1980 and the late 1990s, and is notable for characteristics such as being adaptive, especially in the use of technology and not being averse to change (Indeed Editorial Team, 2021). Gen Z individuals were born between the years 1996 and 2012, and are described as independent and are regarding hard work to attain what they would like to achieve (Schwieger and Ladwig, 2018). A significant and important characteristic of the Gen Z age group is its digital footprint. Gen Z people use digital avenues to educate themselves on a range of topics (Vițelar, 2019). Given both millennials' and Gen Z's reliance on digital information, employer brands should be present on social media such as YouTube, Instagram, Facebook, Snapchat, Twitter, and LinkedIn, as these are the applications that young adults use the most (Beall, 2016).

The retail sector in South Africa traditionally absorbs many of the population's young adults, as the sector offer opportunities that require minimal experience and education (W&RSETA, 2021; Lannoy *et al.*, 2018). However, the sustainability of the retail sector is at risk because it continues to report a large skills shortage, mainly driven by technological changes such as big data, artificial intelligence and omnichannel retailing (Ferreira *et al.*, 2020; Mahmoud *et al.*, 2020; Frazer and Stiehler, 2014). To address the challenge, Goh and Lee (2018) proposed sourcing the needed skills among future entrants from the next generational cohorts.

5. Conceptual model

The proposed conceptual module is grounded in a previous research study on the use of social media and employer attractiveness in the context of employer branding (Sivertzen *et al.*, 2013). The study used the EmpAt scale, developed by Berthon *et al.* (2005) to measure employer attractiveness. The conceptual model hypothesises that corporate reputation is influenced by five attributes – employer innovations, development, economic benefit, application value, and social environment – that will influence potential employees' perceptions of the organisation's corporate reputation, while its social media presence moderates the relationship between corporate reputation and potential employees' intention to apply for employment.

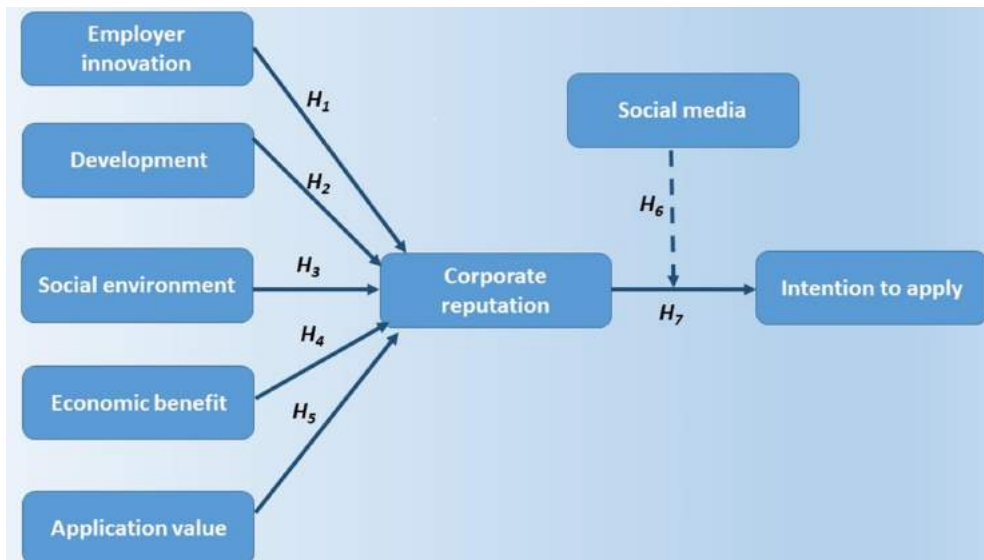


Figure 1: Hypothesised model

6. Hypotheses formulation

The following hypotheses were formulated for the study:

6.1 Employer innovation

Corporate reputation is essential to organisations, as it contributes positively to hiring and retaining employees, thus leading them to be productive and allowing workplace innovation to take place (Jeffrey *et al.*, 2019). A positive corporate reputation actively increases an organisation's internal capital in order to generate value and indirectly increases its innovative capability, which in turn influences its results (Ou and Hsu, 2013). Innovative work behaviour (IWB), which is important for capitalising on corporate innovation, is promoted and valued in high-performing organisations and as a result, innovation in human resource management (HRM) and organisational conduct has also become a focal point (Černe *et al.*, 2017). As a result, the following hypothesis is proposed:

H1: Employer innovation significantly and positively influences corporate reputation.

6.2 Development

Employers investing in their employees' development to increase their skills will attract prospective employees to the organisation. A business that is perceived as having a supportive work culture and that provides opportunities for growth and development will attract potential employees (Naz *et al.*, 2020). Both employees and employers benefit from development programmes, as greater employee efficiency is achieved by developing staff (Jehanzeb, 2020). Given this information, this study proposes the following hypothesis:

H2: Employee development significantly and positively influences corporate reputation.

6.3 Social environment

The social environment of the workplace is seen as one of the important components affecting the corporate reputation of the organisation. In turn, it has been linked to enhancing the attractiveness of the organisation (Styvén *et al.*, 2022). The social environment also encompasses structures in the organisation that might or might not exist, and the relevant organisational culture, which will be used by potential employees to gain an understanding of the working conditions that they might expect (Glassdoor Blog, 2021). By having good relations with its employees, an organisation can increase its attractiveness: current employees will serve as its ambassadors because their needs and wants are always taken into consideration (Wepener, 2015). Given this information, this study proposes the following hypothesis:

H3: The social environment of the organisation significantly and positive influences corporate reputation.

6.4 Economic benefits

The employee compensation and benefits provided by the organisation have a significant influence on the number of job seekers who apply for positions. (Puri, 2018). When applying for a job, job seekers search for an appealing overall compensation package, an above-average salary, and job security in the organisation. Talent is therefore drawn to employers who are perceived to offer better benefits, compensation and conditions. Ahmad *et al.* (2020) confirmed that organisations with better corporate brand perceptions benefitted from improved employer attractiveness, and attracted better talent. As a result, it is hypothesised that:

H4: Economic benefits significantly and positive influence corporate reputation.

6.5 Application value

Application value is concerned with job seekers' perception of whether the prospective employer provides the opportunity to apply what they have learned and to teach others their skills as a favourable attribute when searching for an employer (Ronda *et al.*, 2018). Therefore, application value also covers the relevance of the work in relation to the applicants' skills and knowledge (Kumari *et al.*, 2020), which would typically be acquired through education and previous work experience. Therefore, job seekers hold a more positive view of employers who offer opportunities to apply their skills. It is thus hypothesised that:

H5: Application value significantly and positively influences corporate reputation.

6.6 Social media

Organisations have been using social media for more than a decade to engage with customers and stakeholders about their corporate reputation and brand (Szwajca, 2017). Social media are perceived to be effective tools for organisations to engage with current and prospective employees (Rana and Kapoor, 2016) and many organisations use their accounts on social media to advertise employment opportunities (Grzesiuk and Wawer, 2018). It is expected that social media will play a mediating role between the corporate reputation and the intention of prospective employees to apply for employment. Thus, the following hypothesis is proposed:

H6: The social media presence of the retail organisation will moderate the relationship between its corporate reputation and potential employees' intention to apply for employment.

6.7 Corporate reputation

Corporate reputation influences the attractiveness of an employer and the intention of applicants to apply; therefore, a positive reputation benefits an organisation in both real and intangible ways (Santiago, 2019; Ahmad Azmy, 2018). A good corporate reputation also fosters favourable attitudes and increased loyalty and support from stakeholders, and it helps to recruit employees, because people value affiliations with highly reputable organisations (Gözükara and Hatipoğlu, 2016; Roberts and Dowling, 2002). According to Verčič and Čorić (2018), job seekers are more likely to accept employment from an organisation that has a good corporate reputation. Considering the role of corporate reputation among potential employees, the study proposes the following hypothesis:

H7: Corporate reputation significantly and positively influences the intention to apply for a job with the FMCG retail employer.

7. Research methodology

The study used a quantitative design and an online survey (an internet-based questionnaire) was used to collect data from the target population (Saunders *et al.*, 2019).

7.1 Population and sampling

The target population was millennials and Gen Z young adults with some post-school education in retail, marketing, or related fields, mainly in Gauteng, as this is the main economic hub in South Africa. To achieve accurate and reliable results, the study acquired a sample size of 378 responses. Convenience sampling method (non-probability) was used because the study was focused on individuals from a specific generational cohort who had some post-school education and were accessible to the research team (Etikan, 2016; Taherdoost, 2016).

7.2 Data collection and analysis

The data were collected among respondents who consented to participate, by providing them with a link to the questionnaire through email or social media platforms such as LinkedIn, Instagram, and WhatsApp. Respondents needed to indicate whether they intended to look for employment after completing their current qualifications. Once the respondents had completed the demographic information, the next part of the questionnaire asked them to respond to 25 items that measured employer attractiveness using the EmpAt scale developed by Berthon *et al.* (2005). Using a seven-point Likert scale, respondents indicated their level of agreement or disagreement with the five attributes of corporate attraction (employer innovation, development, social environment, economic benefit, and application value). The final section gathered information about the respondents' intention to apply for employment with selected FMCG retailers and about the retailers' social media presence. For this section, FMCG retailers were used as the majority of retailers in South Africa are from this sub-classification and results from the previous study, (Frazer, *et al.* 2021) indicated that potential graduates prefer the FMCG retailers as their most desirable potential employers. The respondents had to select a retailer from a drop-down list of top FMCG retailers and indicate their intentions to apply for employment and their perception of the retailer's social media presence. A total of 378 responses were included in the final analysis, which used the Statistical Package for Social Sciences (SPSS) version 27.

7.3 Ethical considerations

To ensure that the study complied with ethical guidelines, the questionnaire included a cover page explaining the objectives of the research, that participation was voluntary and that anonymity and confidentiality would be ensured, and asking respondents to give their informed consent to being part of the study. Before implementing the study, the researchers applied for ethical clearance from the University of Johannesburg's College of Business and Economics Ethics Committee. The committee granted ethical clearance for this research study under the ethical clearance code 2021SCiS026.

8. Results

8.1 Descriptive analysis

Table 1 describes the demographic characteristics of the sample. The majority of the respondents were female (63.5%) and aged between 18 and 33 years (94.7%) at the time of the survey. In addition, a large number of the respondents were either undergraduate (59%) or graduate students (34.7%) specialising in marketing (37.3%) or retail (24.1%).

Table 1: Descriptives (n = 378)

Demographic characteristic	Frequency	Percentage
Gender		
Female	240	63.5
Male	135	35.7
Prefer not to say	3	0.8
Age group		
18-33	358	94.7
34 and older	20	5.3
Educational status		

Student	223	59.0
Graduate	131	34.7
Dropout (discontinued/ incomplete studies)	24	6.3
Level of education		
Higher Certificate	17	4.5
National Diploma	95	25.1
Bachelor's degree	139	36.8
Honours degree	90	23.8
Other	37	9.8
Field of study		
Marketing	141	37.3
Retail	91	24.1
Other	146	38.6

8.2 Reliability, mean scores, and validity

The reliability of the scale items used in the analysis of the hypotheses was determined by calculating the internal consistency reliability scores, or Cronbach's alphas. Table 2 below shows the scores obtained and the mean and standard deviation for each of the items.

Table 2: Reliability, mean scores and validity

Construct	Items	Coefficient alpha	Mean	Standard deviation
Employer innovation	The organisation produces innovative products and services	0.859	0.69	1.361
	Innovative employer – novel work practices/ forward thinking.		5.75	1.351
	The organisation produces high-quality products and services		5.88	1.298
Development	Feeling more self-confident as a result of working for an organisation	0.861	5.95	1.357
	Feeling good about yourself as a result of working for an organisation		5.10	1.498
	Gaining career-enhancing experience		5.57	1.457
	A springboard for future employment		5.13	1.490
Social environment	Good relationship with colleagues	0.877	5.13	1.535
	Supportive and encouraging colleagues		5.17	1.552
	The employees have a good relationship with their superiors		4.82	1.521
	Happy work environment			
Economic benefits	An attractive overall compensation package	0.880	5.63	1.342
	An above-average salary		4.40	1.769
	Job security within the organisation		4.23	1.784
Application value	Good promotion opportunities within the organisation	0.905	5.00	1.485
	Hands-on inter-departmental experience		5.13	1.434
	Opportunity to teach others what you have learnt		5.18	1.423

Construct	Items	Coefficient alpha	Mean	Standard deviation
	Opportunity to apply what was learned at a tertiary institution			
	The organisation both values and makes use of your creativity.			
Corporate reputation	Company with a good reputation (Hearing good things about the firm)	0.873	5.97	1.275
	I prefer a well-known employer		5.39	1.589
	The organisation is seen as valuing the customer		5.99	1.287
	My employer should be highly recommended by others		5.73	1.335
	My employer should be highly regarded in the retail industry		5.61	1.495
Intention to apply	I would accept a job from this FMCG retailer	0.920	1.67	1.104
	This retailer would be my first choice of employer		1.76	1.176
	I would attend if I were to be invited for an interview with this company		1.59	1.029
	I would put in a substantial amount of effort if I worked for this retailer		1.70	1.084
	If a friend were looking for employment, I would recommend this retailer		1.60	0.999
Social media presence	I have seen the most social media activity in terms of posts that relate to jobs available at this retailer	0.712	2.36	1.07
	The posts that have been made by this retailer provided the most information about the job		2.55	1.223
	This retailer's social media page grabbed my attention		1.95	1.205

Saunders *et al.* (2019) recommend a Cronbach's alpha coefficient above 0.7; all of the reported scale items were above the threshold, thus confirming their internal consistency and reliability.

8.3 Regression analysis

Regression analyses were used to investigate the relationship between the dependent variable (corporate reputation) and the independent variables (the attributes of employer attractiveness). A level of 95 per cent confidence was used, in that a p-value greater than 0.05 would not validate the hypothesis, thus leading to the alternative hypothesis being accepted (Wiid and Diggins, 2015). The results of the regression analyses and hypothesis testing are summarised in Table 3.

The results of the first regression analysis show that there was a statistically significant and positive relationship between the independent variables employer innovation, social environment, and application value and the dependent variable corporate reputation ($p < 0.05$). This provided statistical support for hypotheses 1, 3, and 5. The results of the regression analysis further show that social environment, with a standardised beta coefficient of 0.170, had the highest influence on corporate reputation. The R^2 (Reasonable R Square) indicates that 55.5 per cent of the variability in corporate

reputation could be explained by employer innovation, social environment, and application value. This is within the range of 0.67 and 0.75 for social sciences model fit.

The second regression analysis focused on the relationship between corporate reputation (the independent variable) and intention to apply for employment (a dependent variable). However, with a p-value of 0.173, the hypothesis was rejected.

Table 3: Regression and hypothesis testing

	Construct	Standardised coefficients beta (β)	T	Sig.	Decision
H₁-H₅	Employer innovation	0.127	2.491	0.013	Accept
	Development	0.109	1.905	0.058	Reject
	Social environment	0.170	3.196	0.002	Accept
	Economic	0.047	.881	0.379	Reject
	Application	0.393	6.272	0.000	Accept
H₇	Corporate reputation	-0.009	-0.173	0.863	Reject

8.4 Moderation analysis

The Hayes process Marco (Hayes, 2018) was used to test H₆, the moderating role of social media on the relationship between corporate reputation and intention to apply for employment. Interaction effect beta values and significance values (p-values) were used to verify the significance of the hypotheses at the five per cent level. Table 4 clearly shows that social media did not influence corporate reputation and the intention to apply and so the hypothesis was rejected.

Table 4: Moderation analysis of social media presence

	Construct	Standardised coefficients beta (β)	T	Sig.	Decision
H₆	Corporate reputation x Social media (interaction effect)	0.0121	0.6585	0.5106	Reject

9. Discussion

The study investigated the influence of employer branding attributes and social media presence on young adults' intention to apply for employment with selected South African FMCG retailers. Most of the respondents were female and were either students or graduates specialising in retail or marketing. The results revealed that employer innovation, social environment, and application value had a significantly positive influence on corporate reputation among young adults. The findings for employer innovation are supported by other studies (Jeffrey *et al.*, 2019; Ou and Hsu, 2013), suggesting that organisations that were perceived to be innovative employers would enjoy better perceptions of corporate reputation among potential employees. The finding shows that perceptions about the social environment of an organisation had the strongest relationship with corporate reputation, and thus were in line with Styvén *et al.* (2022) and Berthon *et al.* (2005). Therefore, the retail employer's workplace environment (its social environment) had a positive influence on corporate reputation perceptions among young adults. In addition, the study found that the ability of young adults to apply what was learned in their prior studies (application value) significantly and positively affected their perceptions of prospective employers' corporate reputation.

The analysis of the results relating to the remaining two attributes of employer attractiveness, employee development and economic benefits, showed no positive relationship. This finding differs from that of other studies that found that employee development programmes and economic benefits would increase corporate reputation, and in turn attract better talent (Jehanzeb, 2020). The outcome of this study might differ because of the retail sector's existing reputation of providing lower economic benefits, requiring lower levels of skills, and not offering great levels of career development.

A study by Grzesuik and Wawer (2018) found that, when social media platforms are used to communicate job opportunities, the organisation's reputation benefits. The finding of the present study was that, in the South African retail sector, social media presence did not moderate the relationship between the corporate reputation of retailers and the intention of young adults to apply for employment at selected FMCG retailers. Furthermore, corporate reputation did not influence the respondents' intentions to apply to a specific retailer, contrary to research by Santiago (2019) and Ahmad Azmy (2018) that had indicated that corporate reputation played a key role in job seekers' choice of employer.

10. Managerial implications

The aim of this study was to determine the influence of employer branding and social media presence on an employer's ability to attract and recruit young adults into the retail sector of South Africa. The continued skills shortage in the retail sector and its inability to attract skilled labour among young adults initiated this enquiry. The attractiveness of employers in the sector contributes to its overall attractiveness and its popularity among job seekers, and it is vital for the sector's sustainability that it attract the right talent. Gaining a better understanding of the attributes that attract young adults to employers is the starting point to overturning negative perceptions of the retail sector and of retail employers. The assumption that young adults are interested in skills development and economic benefits was supported by the findings of this study. Retail employers should thus focus on creating positive communication about the work environment, with a specific focus on their organisations' innovativeness and opportunities for the application of the skills and knowledge that young adults have learned in their post-school education.

Social media, even though popular among young adults, should not be the sole communication channel of the benefits offered by employers in the retail sector. A variety of communication media should be used to improve perceptions about employment in the retail sector. Personal experiences will have the most significant influence on perceptions; young adults hearing from employees in the retail sector would contribute to creating a better understanding of its opportunities and working environment. Furthermore, as the retail sector is one of the few that open their doors daily to customers and thus to potential employees, its stores (the sector's frontline) become a key branding tool for corporate reputation. The in-store experience needs to extend beyond the customer and reach potential employees; an innovative in-store experience, for example, would build positive perceptions of employer innovativeness. When it comes to the social environment, whether retail employees enjoy the work environment and feel connected with their fellow employees is easy to detect by observing their in-store interactions with other retail staff. No social media campaign can replace positive experiences with retailers and with those currently employed in the sector. The results of this study have indicated that social environment has the strongest relationship with the intention to apply for employment with a retailer; and yet retailers often fail to create a warm and welcoming in-store environment, leading to negative perceptions among potential employees.

Finally, connecting the skills learned by young adults in their post-school education with the skills requirements of retail job opportunities would enhance perceptions of application value. Young adults need to be able to see clearly that those working in the retail sector need the skills they have learned, and how those skills will contribute to the success of a retailer and of the sector as a whole. The perception about the low level of skills needed in the sector can be improved by upskilling current retail employees and specific areas such as technology, customer service, and information literacy. In addition, young adults should be exposed, while they are completing their post-school education, to

the different levels and functions of retailers – not only theoretically, but also practically through work-integrated learning and internships. Understanding the bigger picture of retailing and the retail sector would provide young adults with a better view of the potential career opportunities and of the skills needed in the retail sector.

11. Conclusion

Employer branding aims to create an attractive perception of the retail employer and, in turn, of the broader sector among potential employees. The South African retail sector continues to report skills shortages in key areas in an economy in which the number of unemployed young adults is growing. Closing this gap is fundamentally important for the sustainability of the retail sector and of the broader economy, as this sector is the second-largest employer in South Africa. Effective corporate branding in the retail sector will increase the attractiveness of retail employers among young adults and this study has provided retail employers with insights into the attributes of employer branding that young adults perceive as attractive. From a resource theory perspective, attracting and retaining skilled, committed employees will give retail organisations a sustainable competitive advantage. It has also considered the influence of retail employers' social media presence on young adults' intention to apply for employment, and has found that the relationship was lacking. The study has found, further, that young adult employees are not attracted by skills development opportunities or economic benefits; instead, a positive work environment carries the most weight among potential employees. Therefore, the study recommends that retail employers increase their attractiveness by communicating via different channels and focus on employer innovations, their social environment, and their application value. In addition, positive in-store experiences with skilled employees and innovative technology would benefit the overall retail sector's attractiveness among job seekers.

Future research could explore and measure the effectiveness of specific interventions by employers and educational institutions to improve the attractiveness of the retail sector and so better prepare young adults for employment in that sector. Also, as more Gen Z individuals reach adulthood, the target population could be divided into two separate generational cohorts – Gen Z and millennials – to compare the differences between them in their preferences for the attributes of employer attractiveness and the use of social media. In future, the attractiveness of sub-categories of retail organisations of the sector could be compared – for example, of FMCG retailer employers compared with fashion retailer employers. Last, the study could be duplicated in different countries to compare the differences between South African retail sector employer attractiveness and that in other countries. It is also suggested that comparative studies be done in different countries or in different industries in South Africa.

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How Do The Best Online Shopping Websites Develop Trust And Customer Loyalty? A Review Of Obstacles In The Modern E-Commerce Retail World

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Keywords

Internet security;
Privacy concerns;
Trust; E-commerce;
Online shopping

Abstract

E-retailers use the latest technologies in the modern e-commerce retail world. They need to resolve the major obstacles of security and privacy to become the best online shopping websites. This article analyses the relations between trust and these obstacles as main antecedents, namely perceived security and privacy. The study also measures trust as a determinant of customer loyalty in online shopping. An online survey collected data from 285 online shoppers that were processed in AMOS version 28. The results of structural equation modeling reveal a positive impact of perceived privacy on perceived security. The results show a strong positive impact of perceived security and privacy on online trust, which, in turn, impacts on consumers' loyalty to online shopping websites. This study contributes to the existing body of literature by validating the antecedents of trust in the modern e-commerce retail world. Online shopping websites that can resolve these obstacles will generate trust and, in turn, build customer loyalty. Theoretical and management implications for establishing trust in the modern e-commerce retail world are validated in this study.

1. Introduction

Technology developments in modern e-commerce retail make online shopping a common method of shopping for consumers. The transformed shopping methods are attributed to the acceptance, transmission, and penetration of information and communications technology (ICT) in both emerged and emerging economies (Tandon et al., 2021). However, customers often fear purchasing products on websites due to cybercrime. The extensive media coverage and frequently publicised reports about major Internet disruptions, fraud, scams, and related news reports increase the public's concern and sensitivity toward the privacy and security of e-commerce (McKnight et al., 2002). Today, the Internet is viewed by many consumers as an unsafe medium on which to disclose their private information, such as credit card or debit card numbers, etc. due to the chances of inappropriate use of this information by unauthorised sales merchants or others (Daroch et al., 2021; Padmavathy et al., 2019). It is widely accepted that while the number of online shoppers has been increasing, consumers' concerns about their security and privacy when using a debit or credit card for online payment remain unresolved (Tandon et al., 2021). Today, security and privacy continue to persist as key obstacles to the growth of business-to-consumer (B2C) e-commerce and the acceptance of online shopping (Faraoni et al., 2018).

In South Africa, online retail reached 66% total growth in 2020, which accounts for R30.2 billion of the total growth of online retail (Goldstuck, 2021). To advance this growth, e-retailers need to understand the key problems that continue to exist as obstacles to B2C e-commerce growth and acceptance of online shopping, such as security and privacy. This study sought to measure the influence of these factors on online customer trust as a determinant of their loyalty to e-retailers in modern e-commerce retail in South Africa. If Internet users feel it is unsafe to enter private information on their technology devices, it hinders e-commerce growth (Shaw & Sergueeva, 2019). A

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lack of seller-consumer communication and the possible risk of violation of privacy are huge sales obstacles, as they can delay the decision of a consumer to complete an online shopping transaction (Faraoni et al., 2018).

Research indicates perceived security as a core reason why numerous potential consumers avoid online shopping due to the risks of sharing private information (e.g., debit and credit card numbers) on websites (Belanger et al., 2002; Padmavathy et al., 2019). This shows the strong influence of security as a powerful obstacle that inhibits the growing potential of online shopping (Fortes & Rita, 2016). Other scholars (Hossain, 2019; Tandon et al., 2021) show that shoppers in emerging markets prefer to make cash payments instead of using credit or debit cards. This study examined whether trust could be established from consumers' perceptions of security and privacy when using credit or debit cards in modern e-commerce retail in South Africa as an evolving market.

As security and privacy concerns are leading obstacles for customers to use the Internet, they avoid sharing personal information, including debit or credit card information with e-retailers they do not trust (Belanger et al., 2002). It is essential for e-retailers to establish trust in the mind of customers first, which requires improvements in security and privacy strategies (Daroch et al., 2021). Recently, many academics have paid much attention to security and privacy issues, especially in online retailing (Bobalca et al., 2021; Faraoni et al., 2018; Rita et al., 2019).

Studies on the considerations of security and privacy, and their consequential impact on online customer trust and loyalty in e-retailers, have been conducted mainly in developed countries by Aldweeri et al. (2019), Flavián and Guinalú (2006), and Xiao et al. (2016). This paper adopted the Stimulus-Organism-Response (S-O-R) theory proposed by Mehrabian and Russell (1974) to examine whether consumer-perceived privacy and security have a strong impact on trust shown to websites, and if online trust influences customer loyalty. Firstly, this paper contributes a description of the key antecedents of trust, namely perceived security and privacy, as obstacles that hinder the success of modern e-commerce retail. It validates the direct impact of the distinctive nature and roles of security and privacy, as opposed to their dualistic view, and confirms their interactions. Secondly, the study validates the direct impact of trust on customer loyalty in the modern e-commerce retail world. A robust analysis of the research instrument properties was validated (the scale items in Appendix 1), and hypotheses were tested using AMOS version 28. Theoretical contributions, managerial implications, and future research directions conclude the discussion in this paper.

2. Problem investigated

With the proliferation of technology in retail, it is challenging for customers to determine whether a website is secure, and if it is not, their private data (including credit and debit card numbers) could be exposed to maximum risks. The lack of trust in online shopping makes it hard for e-retailers in the modern e-commerce retail world to develop customer loyalty and generate profit. Over the past century, data security breaches have acquired an extraordinary likelihood to negatively influence the customers' confidence, business reputation and profits, and overall economic development (Dlamini et al., 2009). To date, the growing number of data security breaches continue to affect consumers' trust and hinder e-commerce growth. If trust involves a consumer's expectations regarding the seller's integrity and reliability, safety, competence, and benevolence (McKnight et al., 2002), it raises questions about the seller's competence in managing data security breaches by third parties' and/or fourth parties' interactions in online relations (Bandara et al., 2020). Ferrell (2017, p. 162) asks the question: "How can customers generate trust when the problem is often external and uncontrollable?" He insists on e-commerce transactions' third parties' and fourth parties' impact on security and privacy as important areas for new research opportunities.

This study acknowledges and assesses the above-mentioned questions. This will help e-retailers to improve the perceived security and privacy of online shopping, which establishes trust, and in turn increases loyal customers in the modern e-commerce retail world. Understanding the strategy to build trust and overcome obstacles of perceived security and privacy will help e-retailers (e.g., Amazon) to meet their customers' expectations in terms of security and support (Brusch et al., 2019).

3. Research objectives

This paper applies the S-O-R (stimulus-organism-response) framework (Mehrabian & Russell, 1974), with the aim to examine the impact of stimuli from the key obstacles of e-commerce growth (e.g., perceived security and privacy) on organismic factors of online trust, which determine the response of customer loyalty in the modern e-commerce retail world in South Africa.

4. Hypotheses

Numerous scholars have examined the antecedents of online trust. Bandara et al. (2020) report that trust relationships are the second most widely studied subject in the scope of e-commerce. In South Africa, e-commerce might still be small, but it is a huge budget industry valued at \$2.3 billion annually, with an estimated 17.1 million people (or 31% of the entire country's population) purchasing products and services online, and each shopper spends an estimated amount of \$136 (R1 800) per year (Digital Statistics in South Africa, 2017). For that reason, the total of online retail growth in South Africa was 50% higher in 2020 compared to the R20 billion total forecast made three years ago (Goldstuck, 2021). Despite this growth, many customers interacting with e-retailers' websites lack trust in the protection of the confidentiality of their private data (Oliveira et al., 2017). Trust in online shopping is a key element for e-retailers to develop true customer relationships, especially by protecting the confidentiality of users' information, and a commitment to offering the best service and product consistently (Al-dweeri et al., 2019).

Customers' intentions to use the services of online retailers could be influenced by perceived credibility concerning privacy and security (Kassim & Abdullah, 2008). The literature shows that the trust relationship in the online setting between the consumer and online service provider is generated by perceived security and privacy safety (Faraoni et al., 2018; Torlak et al., 2020). Vos et al. (2014) suggest that a basic strategy of electronic marketers to build the trust of consumers in online exchanges is to improve the security and privacy policies displayed on their websites. As an important component of online exchange and the development of lasting online relationships, trust is a key success factor for e-commerce (Bandara et al., 2020). A lack of trust in the technical and institutional environment, such as disclosing private information to online shopping websites and completing purchases, disrupts e-commerce adoption (McKnight et al., 2002). The growing concerns of consumers about these factors oblige e-retailers to search for and implement privacy safety procedures to increase the perception of the trustworthiness of their websites and to inspire customers to complete online transactions (Kim et al., 2008). Belanger et al. (2002) show that consumer decision making to share personal information depends on a perceived level of trust in the e-retailer irrespective of whether the e-tailer is an online store or blends an offline store with an online store. Baruh et al. (2017) indicate that higher privacy concerns generate weaker intentions of users to disclose private information and higher intentions of adopting privacy safety measures. For behavioural action, customers with stronger privacy concerns use online services less. It shows that customers with greater privacy concerns are unlikely to disclose private data in online shopping and require strong privacy-protection measures (Schomakers et al., 2020).

Due to the nature of trust in e-commerce customer relationships (McKnight & Chervany, 2002), this paper proposes that improving perceived security and privacy could contribute positively to generating trust and developing long-term customer loyalty in the modern e-commerce retail world. To test whether this association will prevail, the study tested the following hypotheses:

- H₁: Perceived security on the Internet positively affects customer trust in e-commerce.
- H₂: Perceived privacy on the Internet positively affects customer perceived security in e-commerce.
- H₃: Perceived privacy on the Internet positively affects customer trust in e-commerce.
- H₄: Trust on the Internet positively affects customer loyalty to e-commerce.

5. Theoretical development of conceptual model

5.1 Stimulus-organism-response (S-O-R) theory

The S-O-R theory proposed by Mehrabian and Russell (1974) posits that the different environments present stimuli (S) in formations that could alter the personality of an individual or organismic (O) conditions, which could, in turn, result in a behavioural response (R). This model has been broadly adopted in consumer behaviour studies. For online shopping websites, a group of factors such as interface, security, privacy, etc. are important stimuli of a beneficial shopping environment that could increase the psychological processes that stimulate the purchase. As such, these stimuli arouse logical explanations of information related to the purchase (Sreeram et al., 2018). In a recent study that employed the S-O-R theory, Gong et al. (2022) investigated how perceived Internet risk, self-efficacy, privacy stress, and trust affected consumers' continuous purchase intention in China. Brand trust significantly influenced continuous purchase intention, but privacy stress did not. Moreover, brand trust was found to be a significant mediator, but privacy stress was not. The S-O-R theory has been applied in studies on online shopping behaviour (Peng & Kim, 2014; Sreeram et al., 2018). Furthermore, the S-O-R theory was applied in a study that explored how to achieve sustainable development of mobile payment through customer satisfaction, which indicated that utilitarian value, hedonic value, and salesperson selling behaviours positively affect customers' satisfaction, which in turn positively affects mobile payment usage intention (Chen et al., 2019). Despite the literature that illustrates many studies that extend the S-O-R theory in the field of marketing, its application in establishing trust in online shopping in the modern e-commerce retail world setting is not validated.

This study attempts to apply the S-O-R theory in the context of online shopping in the modern e-commerce retail world. The S-O-R theory assumes that the external environment (stimuli) probably affects a person's internal states (organism), such as cognition and emotion (Ye et al., 2021). This study thus considers perceived security and privacy as external stimuli (S), trust as an internal organism (O), and customer loyalty as a response (R). In a study that extends Mehrabian and Russell's (1974) S-O-R theory, Kim and Lennon (2013) examined the four dimensions of website quality, namely website design, security/privacy, fulfilment/reliability, and customer service. Security/privacy significantly and positively influenced emotion and significantly and negatively affected perceived risk. In the literature, the customer's trust in the website is conceptualised as the organism's cognitive and affective conditions (Sohaib & Kang, 2014). Li et al. (2022) tested the effect that perceived privacy breach by pharmaceutical e-retailers has on customer boycott intention – mainly the mediating role of emotional violation, including the influence of customer cumulative trust. Wu and Li (2018) developed an integrated model to explore the influence that six marketing mix elements (stimuli) have on consumer loyalty (response). Customer loyalty is the response to the website's stimuli and organism in an online shopping environment (see Figure 1).

6. Literature review

6.1 Analysis of the concept of trust

When management's efforts promote extensive communications about security and privacy through interactive marketing channels and personalised messages based on comprehensive customer insights, this could increase trust, which contributes to the development of a highly faithful market in the long term. For B2C online shopping to elevate its momentum, e-retailers need to understand the factors that improve growth, and the concept of trust is at the heart of this (Belanger et al., 2002). Relationship marketing theorists Morgan and Hunt (1994) explain that trust is the confidence in the reliability and integrity of relational exchange partners. Trust represents a belief between exchange partners who will not exhibit opportunistic behaviour in the long term (Torlak et al., 2020). Many scholars have dedicated a greater focus on the significant role of trust in online shopping (Bilgihan, 2016; Faraoni et al., 2018; Bhat et al., 2021). It is known that trust positively relates to customers' attitudes and purchasing intentions (Fortes & Rita, 2016), as trust extends the focus from its current exchange to predict future situations and customers' willingness to continue the relationship (Doney & Cannon, 1997). Trust may therefore be defined as “the perception of credibility and benevolence of a target of trust” (Doney & Cannon, 1997, p. 36).

Although trust may develop in many ways, strategies and tactics of establishing trust encompass cultural faceted expressions (e.g., societal values, norms, standards, etc.) that guide a person's beliefs and behaviours (Teo & Liu, 2005). Trust beliefs exist when the trustor perceives the trustee to hold features of benefit to the trustor. Four of these beliefs are integrity (honesty and keeping promises), benevolence (care and motives to fulfil the trustor's interests), competence (capability to meet the trustor's needs), and predictability (consistent behaviour) of a particular e-service vendor (McKnight & Chervany, 2002; McKnight et al., 2002). Customers are reluctant to stay with an online service provider if they lack confidence in its competence and honesty (Gummerus et al., 2004). More than ever, confidence in an online context influences consumers' willingness to be vulnerable to the e-retailer, in the belief that it will deliver on its promises and not abuse that vulnerability to its advantage, but will act honourably (Al-dweeri et al., 2019; Anaya-Sánchez et al., 2020).

In the electronic market, trust involves the customers' faith and confidence that the online experience will meet their expectations (Ahmad et al., 2017). It shows that trust helps people to establish "faith" in an interaction because online trust represents security regarding the entity of trust; for example, a customer can proceed with an online transaction regardless of the uncertainties and risks involved in the situation (McKnight et al., 2002). Roca et al. (2009) state that as online consumers feel vulnerable, trust is a main factor in online services transactions. More specifically, among people, trust in the online environment is a key factor in the customer-brand relationship (Anaya-Sánchez et al., 2020). The marketing literature views trust as an essential factor in successful business transactions and the growth of lasting business relationships (Moorman et al., 1993).

As different types of trust exist (e.g., disposition to trust, institution-based trust, trusting beliefs, and trusting intentions) (McKnight & Chervany, 2002; McKnight et al., 2002), this study measured trust not only in the e-commerce retailer, but also in the website where the online transaction is made. Xiao et al. (2016) found significant relationships between the three different dimensions of trust (interpersonal, institution, and disposition trust) and their significant impact on customer loyalty. Trust is vital to e-commerce success and its role has been visible across market structures, business processes, and relationships over the past decades (Ribadu & Ab. Rahman, 2019). However, this important role battles to convert into higher sales records through online shopping as many consumers are reluctant to complete transactions because of a lack of trust (Bilgihan, 2016; Fortes & Rita, 2016). For example, disclosing credit or debit card numbers to an electronic channel with no physical store increases customers' risk perception (Anderson & Srinivasan, 2003). Generating trust is thus cited frequently as the main strategy to encourage consumers to purchase from online shops (Lee & Turban, 2001).

6.2 The impact of perceived security and privacy on online consumers' trust

This research examined a theoretical framework using the S-O-R theory that connects perceived security and privacy, trust, and customer loyalty to online shopping in the modern e-commerce retail world. With this in mind, the study sought to propose and validate security and privacy as two important stimuli most related to the organism of online trust, which leads to responses of customer loyalty. It analysed the strength of their relations and their resultant impact on customer trust as a key determinant of online customer loyalty.

Studies across the literature describe the measures of the impact of security, privacy, and trust in an e-commerce setting. To date, some researchers have assessed customers' privacy concerns in the e-commerce context (Anic et al., 2019; Bandara et al., 2020; Fortes & Rita, 2016), while others have assessed customers' perception of the security of e-commerce transactions (Brusch et al., 2019; Xiao et al., 2016). Perceived security and privacy have since dominated debates in the literature, as measured in various contexts such as online healthcare services (Gummerus et al., 2004), public sector management, private companies' websites (Flavián & Guinalíu, 2006), online trading systems (Roca et al., 2009), open-access academic repositories (Formanek & Zaborsky, 2017), grocery retailers (Faraoni et al., 2018), mobile banking services (Shareef et al., 2018), social media (Gogus & Saygin, 2019), and now the Internet of Things (IoT) (Bayer et al., 2021).

Great debates over the privacy of personal information often include the topic of security, often referred to as information security (Gogus & Saygin, 2019). Overlapping dimensions such as anonymity, secrecy, confidentiality, and ethics often become part of this discussion (Smith et al., 2011). While it appears fair given the particularities of privacy and security as the two factors that must be understood as separate attributes, Flavián and Guinaliú (2006, p. 605) argue that it has nevertheless become apparent that consumers, companies, and policymakers perceive a close relationship between the two concepts, in which, together, these factors are named “perceived security in the handling of private data (SHPD)”, which shows the perception of consumers of the practices involving personal data-protection measures facilitated by the website and the safety of the Internet system where these practices are facilitated.

Due to the similarities, studies often report on and use privacy and security interchangeably (e.g., Faraoni et al., 2018; Rita et al., 2019; Schlosser et al., 2006; Torlak et al., 2020). Wolfenbarger and Gilly (2003) proposed and tested the eTailQ scale founded on validated service quality scales, for example, SERVQUAL and e-SERVQUAL, including SITEQUAL and WebQualTM. The results indicate privacy/security as a key factor in website interface measurement. Studies in e-commerce measure and report on the impact of security/privacy on trust in e-commerce (Faraoni et al., 2018; Kim & Lennon, 2013; Torlak et al., 2020), as well as the influence of privacy/security on key trusting beliefs (i.e., benevolence and integrity beliefs) (Schlosser et al., 2006). When merging a lack of integrity, security, and privacy into a single factor, Oliveira et al. (2017) report this factor to be statistically significant in explaining competence and integrity but not benevolence toward an e-retailer. Table 1 lists studies that have assessed the distinct versus dualistic views of security and privacy on online trust and customer loyalty.

Table 1: The distinct and dualistic measures of security and privacy of business-to-consumer (B2C) trust and customer loyalty

Authors	Purpose of study	Methodology	Results	Approach
Torlak et al. (2020)	Conduct benchmarking by applying IseKriterijumska Optimizacija I Kompromisno Resenje (VIKOR)-structural equation modelling (SEM) on the Internet industry.	444 Internet users. SEM.	Customer trust is significantly positively influenced by network and information quality and security/privacy.	Dualistic
Schlosser et al. (2006)	Develop a theoretical model to understand the effects that marketing signals have on consumers' trust in the context of e-commerce.	79 undergraduate students. Analysis of variance (ANOVA).	Benevolence beliefs and integrity beliefs were significantly influenced by privacy/security. Ability beliefs were not.	Dualistic
Belanger et al. (2002)	Test the comparative importance of four mutual trust facets (e.g., third-party privacy seals, privacy statements, third-party security seals, and security features) that customers perceive when buying from a website.	140 students. Cohen's Kappa (<i>k</i>).	Security attributes are considered significantly higher than the other trust antecedents.	Distinct
Roca et al. (2009)	Evaluate e-traders' perceived trust, security, and privacy, integrated with dimensions of the Technology Acceptance Model.	180 students. SmartPLS.	Perceived security has positive relationships with trust; the perceived privacy effect on trust was thus not significant.	Distinct
Ganguly et al. (2009)	Propose and test a model to gain empirical evidence on how website features impact trust in online shopping in India.	290 students. SEM.	Trust in online stores is significantly predicted by privacy and security.	Distinct
Shin (2010)	Adopt reliable measures with scales testing the perceived security, customer trust, and privacy concerns related to social	323 students. SEM.	Security and privacy and trust had little difference between the two cohorts of users.	Distinct

	networking websites.			
Oliveira et al. (2017)	An empirical test of a specified model to help Internet retailers with appropriate solutions to increase trust.	365 Portuguese residents. SEM.	The competence of the e-retailer is affected by a lack of integrity, privacy, and security, and their link is significant.	Dualistic
Rita et al. (2019)	Develop an understanding of the key essential factors of e-service quality that influence customer satisfaction, trust, and customer behaviour in online shopping.	355 Indonesian online consumers. SEM.	Website design, security/privacy, and fulfilment affect overall online service quality.	Dualistic
Faraoni et al. (2018)	Analyse the micro-linkages that enhance the loyalty of consumers to grocery retailers in a B2C e-commerce setting.	155 students. SEM.	E-trust is strongly influenced by security and privacy.	Dualistic

Source: Own compilation

This study aimed to investigate perceived security and privacy as the distinct obstacles to the growth of online shopping in the modern e-commerce retail world. While a standard procedure for measuring both security and privacy as a single construct has been adopted in e-commerce research studies (see Table 1), such dualistic methods are criticised by Belanger et al. (2002), who examined security and privacy as distinct predictors of e-commerce trust. They show that security measures are valued more by consumers than privacy statements presented on the website. Ganguly et al. (2009) found website security as the most contributing factor in the formation of online trust, followed by privacy, information design, and website communication. Roca et al. (2009) found a positive influence of perceived security on online trust in the online trading context, while the impact of privacy concerns on customer trust is not supported. It shows that the security of a website for conducting financial transactions is a major concern for customers who want to perform e-commerce transactions (Chang & Chen, 2009; Hartono et al., 2014). Perceived security is one of the biggest concerns for online customers worldwide (Maditinos & Theodoridis, 2010), and it is a key dimension of gaining potential online customers and retaining current customers (Park & Kim 2003). The security of e-commerce payments continues to dominate the debates in the literature, showing perceived security as a significant element that influences online purchase behaviour (Daroch et al., 2021), mobile banking adoption (Shareef et al., 2018), consumer attitudes to social networks (Shin, 2010), trust in e-commerce (Belanger et al., 2002), online purchase intentions (Schlosser et al., 2006), and e-commerce switching costs (Chang & Chen, 2009).

6.2.1 Security

Perceived security refers to the perception that technical guarantees involving legal requirements and good practices related to privacy will be met (Casalo et al., 2007). Security implies the protection of the entire online transaction process and information exchanged when customers purchase from an online shop (Padmavathy et al., 2019). Online retailers must assure their customers of their security (Tandon et al., 2021). Shin (2010) explored social network services behaviour and found that the perception of security has the strongest impact on customer attitude, followed by privacy. The results confirm the reciprocal interactions between perceived security and privacy. The impact of privacy concerns on the perception of security was thus much higher than the opposite impact, which indicates that privacy is a distinct factor of security. A significant impact of customers' perception of security on trust in the adoption of mobile banking is shown by Shareef et al. (2018). Empirical evidence shows that online security does not positively impact customer satisfaction (Bobalca et al., 2021; Bruschi et al., 2019); instead, it shows a direct positive significant impact of security on customer trust (Belanger et al., 2002; Roca et al., 2009; Xiao et al., 2016). It shows that when security-related mechanisms offer protective measures for preserving personal information, the website reinforces consumers' confidence that it can be trusted (Bart et al., 2005).

6.2.2 Privacy

Perceived privacy refers to the perception that legal requirements and good practices exist to manage personal data (Casalo et al., 2007). Given that privacy involves customers' willingness to share personal information on a website to allow the completion of a purchase transaction (Faraoni et al., 2018; Shaw & Sergueeva, 2019), the importance of this issue is shown by Barrera and Carrión (2014), who found that online privacy is an issue of great concern for Internet users who wish to make online purchases. Perceived Privacy Protection (PPP) as "a consumer's perception of the likelihood that the Internet vendor will try to protect consumer's confidential information collected during electronic transactions from unauthorized use or disclosure" (Kim et al., 2008, p. 550). In this study perceived privacy denotes a consumer's perception regarding the protection of personally identifiable information on the Internet. Ensuring privacy in disclosing personal information when shopping on a website therefore enhances online trust (Bart et al., 2005). While evidence exists in the context of online retailing that shows a positive impact of privacy on online satisfaction (Ahmad et al., 2017), previous studies show that consumer's perceived privacy protection positively affects their trust in e-commerce (Kim et al., 2008; Shin, 2010), which shows that customers' perceived privacy is a key antecedent of trust in the online vendor (Al-dweeri et al., 2019).

6.3 The relationship between perceived security and privacy and online trust and consumer loyalty

Despite living during the so-called Information Age, when "information security and privacy are very important issues" (Formanek & Zaborsky, 2017, p. 46), to a large extent it seems that online shoppers act on instinct without evaluating potential risks related to privacy and security interruptions, or they realise these concerns but are constrained in their actions by many external factors, including low transparency, user-unfriendly interface design, or consumer hostility to privacy policies, together with vulnerability to use a website (Barth & De Jong, 2017). To date, customers' fears that online service providers could disclose their private data to others and the perception of poor security remain distinct obstacles to the growth of online shopping in the modern e-commerce retail world. The perceived fear of poor security has been measured by many studies (Hartono et al., 2014; Kassim & Abdullah, 2008; Roca et al., 2009) as a key factor that influences the use of online shopping websites, whereby this fear of a potential data leak may cause consumers to discontinue the completion of purchase transactions on a B2C e-commerce channel.

Together with prior experience in information systems, trust can "significantly influence consumer's intention to share private information" (Ebberts et al., 2021, p. 413). Recent studies continue to measure security and privacy concerns as the main obstacles to online trust (Bandara et al., 2020; Schomakers et al., 2020). The e-commerce research scope has centred on online security and privacy issues, including equivalent solutions for improved authentication and encryption, including code signature and on-device security to improve trust in e-commerce. These measures of security and privacy have a positive impact on trust in online shopping, as they reduce the perception of risk in sharing private information (Brusch et al., 2019). Security and privacy are therefore viewed in this paper as antecedents of trust, which determines customer loyalty, thereby contributing to online shopping growth in the modern e-commerce retail world. To increase South Africa's total growth of online retail from 66% or R30.2 billion gained in 2020 (Goldstuck, 2021), e-retailers need to understand the key issues that continue to exist as obstacles to B2C e-commerce development and acceptance of online shopping, such as security, privacy, and trust. The objective of this research is to propose and assess a theoretical framework that measures the impact of these variables on trust, which in turn develops customer loyalty in the online shopping context of the modern e-commerce retail world. Based on the S-O-R theory, Figure 1 shows a theoretical framework of perceived security, privacy concerns, trust, and customer loyalty toward e-commerce websites in South Africa.

The difficulties of the above-mentioned factors have received greater emphasis in recent e-commerce research (Al-dweeri et al., 2019; Xiao et al., 2016). Scholars who recently measured the interactions between online trust and customer loyalty found a significant and positive influence of online trust on customers' loyalty (Bhat et al., 2021; Faraoni et al., 2018; Zhang et al., 2020). Because customers are strongly dependent on the website for information search and purchases, and can develop loyalty,

trust is highly essential in the online setting. It becomes important to examine this view in emerging economies such as South Africa. In the marketing literature, Oliver (1999, p. 34) defines loyalty as “a deeply held commitment to repeat purchase or patronise preferred product or service consistently in the future, thereby leading to a repetitive same-brand or same brand-set purchasing, despite situational impacts and marketing efforts having the potential to cause switching behavior”. Oliver (1999) measured loyalty as separated into two facets, namely attitudinal and behavioural loyalty. Marketing literature refers to a consumer’s deeply held commitment to a brand as attitudinal loyalty (Chaudhuri & Holbrook, 2001), whereas loyalty that accounts for repeat purchase behaviour is the outcome of repeat customer satisfaction, which, in turn, manifests in a lower commitment level since consumers repeat buying the same brand, not based on a strong attitude or a deep commitment, but because the time and effort to search for an alternative are not worth it (Donio’ et al., 2006). The power of the relationship between consumers’ attitude and repeat patronage behaviour is referred to as loyalty (Dick & Basu, 1994). Al-dweeri et al. (2019) show that trust significantly positively impacts both behavioural loyalty and attitudinal loyalty in an e-commerce context; loyalty occurs when a favourable attitude a consumer has towards a website manifests in repeat purchase behaviour on that website (Anderson & Srinivasan, 2003).

7. Research methodology

7.1 Sampling

The sample used for this study included South African consumers who purchase products and services from online shopping websites. The choice of sample selection matches the literature (e.g., Rita et al., 2019; Tandon et al., 2021; Torlak et al., 2020). The sample represents the population of e-commerce study for two-fold aims: firstly, these online customers hold good knowledge of online services and are familiar with website applications in the modern e-commerce retail world; and secondly, many online customers feel comfortable using ICT, as well as e-commerce transactions. A structured web-based questionnaire was developed, guided by the study’s background evaluation and problem audit, and the literature review. Two scholarly experts in the field of Information Systems research evaluated the questionnaire. Thereafter, the revised questionnaire was distributed to 50 customers for survey pilot testing and exploring the most recent online shopping experience. The final version of the questionnaire measured the respondents’ demographic variables in Section A, while Section B contained 16 scale items to be tested in the measurement model. All the scale items were validated in the literature. Four items of security (Corbitt et al., 2003), three items of privacy (Barrera & Carrión, 2014), five items of trust (Doney & Cannon, 1997), and four items of loyalty (Kassim & Abdullah, 2008) were revised to achieve the objectives of this study. A five-point Likert scale, which varied from 1 = strongly disagree to 5 = strongly agree, captured responses to validated statements in the questionnaire. The standard estimates and t-values of the scale items are shown in Appendix 1.

7.2 Data collection

A total of 300 structured questionnaires were administered to customers in an online survey. The survey link was shared on social media platforms targeting online shoppers, and e-mails were sent to potential respondents. The participants were not reimbursed for taking part in this survey. A total of 285 questionnaires were completed and the data were tabulated in the Statistical Package for the Social Sciences (SPSS) version 28 for descriptive statistical analysis, and later, AMOS version 28. The response rate was 95.5%.

8. Results and findings

Table 2 lists a summary of the sample’s demographic variables. Table 2 also shows that the survey included more female (61.4%) than male (38.6%) respondents. Of the respondents, 28.8% had more than three years’ online shopping experience, and 37.9% purchased from Takealot.com, and 29.1% indicated monthly spending ranging from R5 000 to R6 000. Interestingly, 46% of the respondents frequently purchased clothing. These results show that customers have average experience in online shopping and hence were eligible participants in this survey.

Table 2: Sample table

Variable	Category	Frequency	Percentage (%)
Gender	Male	110	38.6
	Female	175	61.4
Age	18-24 years	181	63.5
	25-29 years	57	20.0
	30-34 years	21	7.4
	35-49 years	20	7.0
	50-54 years	6	2.1
Monthly spending	Less than R1 000	49	17.2
	R1 000 to R2 000	77	27.0
	R2 000 to R3 000	43	15.1
	R3 000 to R4 000	15	5.3
	R4 000 to R5 000	18	6.3
	R5 000 to R6 000	83	29.1
E-store	Takealot.com	108	37.9
	Others	60	21.1
	Spree.com	46	16.1
	Amazon.com	37	13.0
	Zando.co.za	22	7.7
	Bidorbuy.com	12	4.2
Experience	Six months to one year	86	30.2
	One to three years	82	28.8
	Three to five years	29	10.2
	Five to 10 years	10	3.5
	Over 10 years	2	0.7
Products	Apparel	131	46.0
	Technology gadgets	96	33.7
	Food	15	5.3
	Tickets	15	5.3
	Others	28	9.8

Source: Own compilation

8.1 Testing the measurement model

A confirmatory factor analysis (CFA) of the scale items in the questionnaire was entered into AMOS version 28 using maximum likelihood estimates to diagnose the factor reliability and the convergent and discriminant validity of the measurement properties. Most standardised factor loadings were above 0.7 (Hair et al., 1998), which indicated construct validity. Appendix 1 shows factor loadings below 0.7 on PRIV2 (0.59), TRS 2 (0.60), and LOY 4 (0.64). However, these factor loadings were retained, as the coefficient value of 0.6 is occasionally accepted (Hair et al., 1998), which shows construct validity.

All the constructs had a Cronbach's alpha above 0.7, which indicated the internal consistency reliability of the factors (Hair et al., 1998), as shown in Appendix 1. Table 3 shows that the measurement model had factors with values of composite reliability (CR) above 0.7, which confirmed each factor's adequate convergence consistency (Fornell & Larcker, 1981). In addition, the average variance extracted (AVE) values of these factors were 0.5 or higher (Fornell & Larcker, 1981). The square root of the AVE (the average variance shared among the variable and its items) matched with the values of inter-construct correlation (the variance shared among the variable and other variables) to evaluate if the latent construct describes its variables well higher than it explains other measured constructs. The square root of AVEs was higher than the factor correlations, and as a rule of thumb, this confirms discriminant validity. This diagnosis shows the values of the CR, AVEs, and the square root of AVEs that meet the model assessment criteria, which signifies internal consistency reliability and discriminant validity of the data in the measurement model.

Table 3: Composite reliability (CR) and discriminant validity

Constructs	CR	AVE	SEC	TRS	LOY	PRIV
SEC	0.893	0.677	0.823			
TRS	0.884	0.607	0.531	0.779		
LOY	0.848	0.585	0.427	0.750	0.765	
PRIV	0.752	0.506	0.421	0.358	0.360	0.712

Note 1: CR, AVE, and bold values indicate the square root of AVE ($\sqrt{\text{AVE}}$)

The results of the goodness-of-fit indices of the CFA, whereby the factors intercorrelate freely without restrictions, show adequate fit indices (Bentler, 1990). The measurement model had data with a good fit ($\chi^2(98) = 173.648$ $p < 0.01$; $\chi^2/df = 1.77$; GFI = 0.93; CFI = 0.96; RMSEA = 0.05; RMSR = 0.03; TLI (NNFI) = 0.96). The next step was to analyse the structural model using AMOS version 28.

8.2 Testing the structural model: Direct effects

The hypothesised relationships were tested using AMOS version 28. The results of the structural model are reported in Figure 1 and Table 4. The findings of the structural model show goodness of fit and significant data ($\chi^2(100) = 176.779$; $p < 0.01$; $\chi^2/df = 1.768$; GFI = 0.93; CFI = 0.96; RMSEA¹ = 0.05; RMSR = 0.03; TLI (NNFI) = 0.96). The overall model explains 18% variance in security, 31% in trust, and 57% in consumer loyalty in online shopping websites. Hypotheses 1, 2, 3, and 4 were therefore supported.

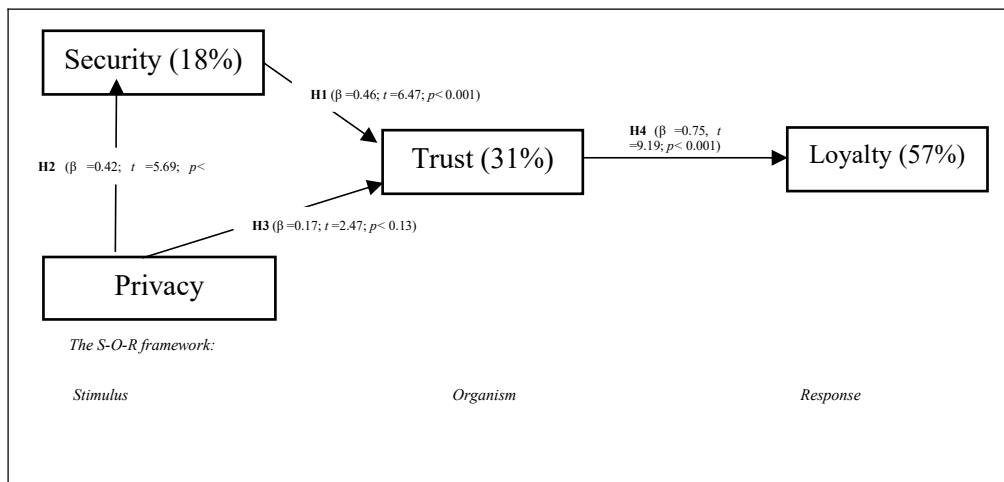


Figure 1: Sample figure

The results in Table 4 confirm the strong positive influence of perceived security ($\beta = 0.46$, t-value = 6.47) on consumer trust. The results show the positive impact of perceived privacy ($\beta = 0.42$, t-value = 5.69) on perceived security, followed by the positive impact on trust ($\beta = 0.17$, t-value = 2.47). Lastly, the results strongly support the significant positive effect of trust on customer loyalty ($\beta = 0.75$, t-value = 9.190).

Table 4: The results of the hypothesised relationships

Hypothesis	Dep.	Ind.	Std. estimate	t-value	p-value	Result
H ₁	TRS	SEC	0.460	6.477	0.001	Accepted
H ₂	SEC	PRIV	0.421	5.652	0.001	Accepted
H ₃	TRS	PRIV	0.176	2.475	0.013	Accepted
H ₄	LOY	TRS	0.754	9.190	0.001	Accepted

Note 2: $p < 0.001$ ***; $p < 0.01$ **; $p < 0.05$ *

9. Discussion of results

The study investigated and quantified measures of perceived security and privacy as the main obstacles to trust and the development of customer loyalty in online shopping in the modern e-commerce retail world in South Africa. Of 61.4% female and 38.6% male respondents, 28.8% had

more than three years' experience in online shopping. Of the respondents, 46% frequently purchased clothing, 37.9% purchased from Takealot.com, and 27.0% spent R1 000 to R2 000 monthly on online shopping. These results support the view by Goldstuck (2021) that the apparel sector is South Africa's fastest-growing e-commerce market with the highest revenue of businesses in 2019. To answer the research questions this study examine, firstly, empirical evidence from this study supports the hypothesis showing the strong direct positive impact of security on online consumer trust. This result supports other studies in the literature (Belanger et al., 2002; Ganguly et al., 2009; Xiao et al., 2016) that improving perceived online security influences customers' trust in their decision to purchase from websites, which contributes to the growth of B2C e-commerce. It confirms that when security-related mechanisms offer protection measures that safeguard the individual's information, the website will enhance consumers' confidence that it can be trusted (Bart et al., 2005). It can be mentioned that the statistical findings lean towards perceived security as a positive strong predictor of customer trust in online shopping in the modern e-commerce retail market.

Secondly, the results show a direct positive impact of perceived privacy on perceived security in modern e-commerce retail in South Africa. This remark is consistent with research on social networking by Shin (2010), who reports that the effect of privacy on security is supported, which implies that privacy has a mediating effect on the relationship between security and trust in online social networks. This confirms that privacy is separate from security. These results contradict evidence of a negative relationship between online privacy concerns and consumers' attitudes to online shopping (Anic et al., 2019). Due to their awareness and experience in online shopping, customers perhaps perceive the websites as safe to protect the privacy of their confidential information, which contributes positively to their perception of the security of the website for online shopping; thus inspiring them to share their private data and finalise online shopping transactions.

Thirdly, the results show a direct positive influence of perceived privacy on online customer trust. This result supports the view that if privacy is assured in sharing personal information on a website, online trust is enhanced (Bart et al., 2005). This sentiment is shared in the e-commerce literature which shows that a positive effect of customers' perceived privacy is a key antecedent of trust in the online vendor (Al-dweeri et al., 2019; Kim et al., 2008; Shin, 2010). It confirms that customers have a perception of privacy and the protection of their private information, which contribute positively to their levels of trust in the website for online shopping. They tend to share their private data and finalise online shopping transactions due to high levels of trust in e-retailers in the modern e-commerce retail world. A well-known website can potentially have a more positive reputation based on word of mouth and ratings from offline and online communities (Casalo et al., 2007).

Lastly, the estimate of the interaction between trust and customer loyalty shows a significant positive impact that trust has on customer loyalty in online shopping. This outcome supports recent studies that indicate a positive effect of trust on customers' loyalty in online shopping (Bhat et al., 2021; Faraoni et al., 2018; Zhang et al., 2020). With this result, it can be concluded that e-retailers with the capabilities to establish trust in online shopping will develop strong long-term customer loyalty in the modern e-commerce retail world. In general, management's efforts to extensively improve perceived security and privacy through interactive communication, marketing channels, and personalised messages based on comprehensive customer insights could build trust, which will contribute to the development of a highly faithful market in the long term. These results present contributions to the literature and managerial plans for e-commerce.

10. Theoretical contributions

To date, existing e-commerce literature has shown the essential role of customer trust in contributing to B2C e-commerce success (Bhat et al., 2021; Tandon et al., 2021; Zhang et al., 2020). E-commerce trust is more strongly influenced by perceived security than perceived privacy. This observation contributes to the meta-analysis by Kim and Peterson (2017), which showed that trust in online markets is highly related to various antecedents that exist when customers interact with the e-retailer's website (e.g., security perception, system quality evaluation, etc.). This study contributes to related literature that continues to show the strong association between perceived security and privacy as

critical factors in establishing customer trust in online services (Faraoni et al., 2018; Rita et al., 2019; Xiao et al., 2016). This study contributes an important view to the S-O-R theory that a complete guarantee of security and private data safety are stimulus that enhances consumers' organism of confidence to enter personal information into an e-retailer's website in the modern e-commerce retail world.

This study extends literature that shows a relationship between privacy and security in an online shopping setting, similar to Shin (2010), who revealed this observation in the context of social network services. This study's findings contribute to the view that security is a strong direct positive element of consumer trust relative to perceived privacy. This supports the work by Belanger et al. (2002) which showed that online security mechanisms are regarded as more crucial than privacy. This view contributes knowledge on the impact of perceived security on online trust as stronger than the influence of privacy on trust. This paper contributes to the consideration of the traditional e-commerce view that online security strongly influences customer trust in online shopping in an emerging market. On this note, Belanger et al. (2002) emphasise that the concept of security is understood better by users in general compared to privacy since security is a pure, solid concept. These authors reveal security measures as highly relevant compared to websites that display privacy statements. Pavlou and Chellappa (2001) report the effect of privacy as weaker than the strong impact of perceived security on online customer trust. It shows that privacy concerns follow the strong impact of perceived security on trust, as opposed to electronic trading systems, whereby Roca et al. (2009) report that perceived privacy is not a significant determinant factor of users' trust in a system. It can therefore be concluded that security is a major factor that influences customer trust in the modern e-commerce retail world. A possible reason is that online shoppers may be knowledgeable about the security protocols and technology features that protect privacy, such as cryptography, encryption, and socket layer keys introduced in online shopping in the modern e-commerce retail world, unlike those features that cannot be easily recognised in an online trading system. Due to the complete guarantee, these security features instil total privacy, and these users have low privacy concerns. This paper contributes to previous research regarding the important role that trust plays in the development and success of B2C e-commerce (Pavlou & Chellappa, 2001; Shankar et al., 2002). This study validates recent e-commerce literature that indicates a higher level of trust as a relevant factor for lasting customer loyalty, mainly in online shopping settings (Al-dweeri et al., 2019; Bhat et al., 2021; Faraoni et al., 2018). This contributes to the S-O-R theory on how overcoming key obstacles of stimulus of security and privacy can generate organism of trust, which results in responses of customer loyalty to online shopping websites in modern e-commerce retail in South Africa. In addition, the results that security perception strongly affects trust in B2C e-commerce have practical implications for website marketing activities as well.

11. Managerial contributions

Trust advances the capabilities to improve consumer intention. For example, by increasing consumer trust, e-retailers could enhance prospective customers' willingness to purchase on the Internet (Corbitt et al., 2003). It shows the vital role of e-commerce trust, as suggested by Teo and Liu (2005), that knowing its antecedents and consequences has been a prime consideration of online marketers for various reasons. Firstly, since managers need to know the absolute prominence of dimensions that affect trust, the antecedents of trust in B2C e-commerce are helpful. Understanding multiple factors could help in redirecting necessary resources and measures to establish online trust. Secondly, by knowing the maximum consequences of trust, managers will realise the important role of trust and its resultant influence on online shopping behaviour. This outlines the explanatory power of S-O-R theory in e-commerce market setting.

In e-commerce, online marketers display security and privacy seals on their websites as a key strategy to increase trust in online exchanges (Vos et al., 2014). Customers can trust any website depending on its privacy policy; retailers can therefore provide customers with a transparent security policy, privacy policy, and a secure transaction server so that customers will not feel anxious to make online payments (Daroch et al., 2021). Among the cognitive-based trust antecedents, Kim et al. (2008) report that privacy and security are two forces that strongly affect customer trust and perception of risk.

Since this study shows a strong positive significant impact of perceived security followed by perceived privacy on customer trust, it confirms security as a key factor to consider in modern e-commerce retail. Cybersecurity and new technologies (e.g., digital signatures, cryptography, encryption, and certificates) used to protect users' private data from the potential risk of fraudsters, hackers, or "phishing", positively impact customers' purchase intention, as previous research confirms (e.g., Kim et al., 2008; Roca et al., 2009; Vos et al., 2014). According to Formanek and Zaborsky (2017, p. 46), "effective security requires layers of security built into devices and the infrastructure that manages them, including authentication, code signing, and on-device security... Analytics, auditing, and alerting are also key to understanding the nature of threats emerging in this area. Finally, strong SSL/TLS encryption technology plays a crucial role in authentication and data protection". These tools will boost the success of online shopping in the modern e-commerce retail world.

A significant effect of perceived privacy on perceived security offers a unique contribution to the successful management of online shopping in the modern e-commerce retail world relative to social network services, as shown in a study by Shin (2010). It is important to appreciate that online retailers can succeed in securing the storage of personal data but could also make incorrect decisions regarding its subsequent use, which increases information privacy concerns. This suggests that "security is a means for privacy, but not a means to an end in safeguarding against incorrect subsequent use, minimise[s] perceived risk of sharing, and reassuring Internet users" (Smith et al., 2011, p. 996).

Nowadays, preserving privacy is important to avoid the leakage of customers' private information and identity theft (Dlamini et al., 2009). This study can help policymakers on online shopping to take the necessary steps to improve critical infrastructure and cyber resilience to preserve the customer's privacy and establish a regulatory body with the cyber-skills needed to guard personal information. Consumers hesitate to share personal information with online companies due to feeling that it could be used incorrectly or shared with unauthorised organisations (Roca et al., 2009). Firms can build trust and resolve privacy fears by strengthening security and regulation, detecting cybercrime, and explicitly communicating a clear privacy policy, as efforts related to cyber risk governance. Furthermore, the best online shopping websites facilitate different roles of online security such as application security, data loss prevention, forensics, security architecture, threat intelligence, vulnerability management, and incident response. These efforts provide advantages as most online shopping websites display a privacy policy and assure customers about transaction security but often fail to describe in detail how online transactions and private data will be secured (Park & Kim, 2003). As customers can trust a website based on its privacy policy, e-retailers can improve policies that guarantee security, privacy, and supply chain of security transactions or server to minimise customers' fears of conducting online payments in the modern e-commerce retail world (Daroch et al., 2021). Consumers primarily look for visible privacy and security statements that describe in clear terms how the website collects data, its data-sharing policies, and its security features, such as encryption and protected passwords (Belanger et al., 2002). The best companies release past performance outcomes, offer references from previous and current users, issue third-party certificates, and enable users to easily locate, read, and comply with the privacy and security policies, which strongly improve online trust (Shankar et al., 2002). Proper security, the trustworthiness of information, and privacy should be emphasised in all advertisements and websites. Shaw and Sergueeva (2019) report that companies could target early adopter segments as these individuals are more innovative, which could be the next wave of adopters, whom others will see as ambassadors upon being satisfied with the security and privacy safety offered.

12. Conclusions

This study provided an online marketing profile of customers who purchase products and services from online shops in South Africa. Online shopping participation is higher among females than males, especially in the segment aged between 18 and 24 years old. These consumers spend an estimated R1 000 to R2 000 monthly on online shopping and mostly prefer to purchase apparel from the Takealot.com website. Most participants had experienced online shopping for less than one year on their favourite websites.

Despite previous studies showing that customer trust in B2C e-commerce is affected by perceived security and privacy, this paper adhered to the necessary requirement to pay them greater attention in e-commerce research than ever before due to their impact on modern e-commerce retail developments. As times change, threats also change. Researchers mostly view security and privacy as two obstacles to B2C e-commerce achieving success. The study emphasises a key strategy of building customer trust in online shopping by enhancing security and privacy perceptions. This paper adopted the S-O-R theory and contributes a validated framework of online shopping, which explains how perceived security followed by perceived privacy significantly and positively impact online customer trust. The paper presents a formal procedure to increase trust as a determining factor of customer loyalty in the modern e-commerce retail world. This study argues that website marketers must strive to build e-commerce trust as a prerequisite for developing customer loyalty in online shopping. This paper contributes a method for website marketers to grow competencies by effectively and efficiently improving customers' perceptions of the security and privacy of their website to position their online stores as safe in securing and facilitating online transactions. This procedure is intended to develop customer loyalty through establishing and nurturing online customer trust.

This paper offers insights into the direct effects of perceived privacy on perceived security. This relationship is hardly examined in the literature, and their effects on trust as a predictor of customer loyalty have not yet received great emphasis in previous studies in the South African context. Also, examining the relationships between customer trust and e-loyalty in the emerging African market contributes to understanding the literature adopting the S-O-R theory on B2C e-commerce within an academic scope. Trusted websites are important for branding since consumers shop on and remain loyal to a few websites they can trust (Bilgihan, 2016). Despite previous studies exploring brand trust (Chaudhuri & Holbrook, 2001; Delgado-Ballester & Manuera-Aleman, 2001), the role of trust in the online shopping context of an emerging market such as South Africa has received little attention. Khan and Rahman (2016) and Frasquet et al. (2017) found that e-brand trust significantly and positively influences e-brand loyalty. This paper offers empirical evidence that substantiates the importance of building customer loyalty through establishing trust. It highlights the importance of a website to improve security that can protect customers' private information. Trust will nurture customer perception that the information provided to a website will not be stolen and used by unauthorised parties, which embraces marketing efforts in ensuring that customers develop trust in a website that secures their private information and prevents information from leaking to unauthorised third parties.

Website designers who improve the security and privacy perceptions of the website as a point of contact will build customer trust. This paper validates the conceptualisation of online transaction security and privacy as separate measures that impact customers' trust when shopping online (Belanger et al., 2002). The study validates trust as a generator of positive consumer behaviour in e-shopping. Offering customer service in an online environment accompanied by trust is a necessity to increase customer loyalty (Ahmad et al., 2017).

13. Limitations of the study and direction for future research

To provide meaningful implications for both the emerging African and South African markets and the global market regarding e-services, the study confirmed trust and its predictors, namely perceived security and privacy, as significant features in enhancing the development of B2C e-commerce, thereby contributing insights to the S-O-R theory. Customers' perceptions regarding these factors contribute positively to establishing trust, which increases customer loyalty and thus enhancing the growth of modern e-commerce retail. However, the study had some limitations. With the increasing number of online shoppers, the sample size of this study can be increased. As marketers continue to collect personal information, it remains the main source of Internet users' privacy concerns (Malhotra et al., 2004), which equally requires continuous research. Recently, research has turned to examine trust in online shopping advancements related to the IoT; e.g., enabled actuators and sensor devices, devices assimilating natural interaction through gesture or voice, and artificial intelligence algorithms that automate customer processes. Experimental research that reveals how machine learning models

recognise consumers' purchase intentions early can be conducted in emerging markets. Lastly, control variables such as respondents' online experience and e-shopping spending could be included in research for solid future solid into the modern e-commerce retail world.

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Appendix 1: CFA of factor loadings and t-statistics values for each measurement item

Codes	Items	Std. estimate	t-value	α score
SEC ₁	No one can get access to the data without permission.	0.786	14.560	0.889
SEC ₂	E-commerce technologies are effective in checking out whether a particular user is authorised to take a certain action (for example, log on) or not.	0.813	Fixed	
SEC ₃	Original content of messages will remain unchanged during or after the online transaction.	0.851	16.112	
SEC ₄	Once an order is placed, the buyer/seller cannot deny placing such an order.	0.839	15.825	
PRV ₁	On the website appear symbols and messages that signal that the site is secure.	0.744	Fixed	0.747
PRV ₂	The website assures me that personal information is protected.	0.591	8.376	
PRV ₃	The website assures me that personal information will not be shared with other parties.	0.785	9.386	
TRS ₁	This e-commerce vendor is trustworthy.	0.782	Fixed	0.878
TRS ₂	This e-commerce vendor provides reliable information.	0.604	10.375	
TRS ₃	This e-commerce vendor keeps promises and commitments.	0.839	15.334	
TRS ₄	This e-commerce vendor keeps my best interests in mind.	0.888	16.403	
TRS ₅	This e-commerce vendor's behaviour meets my expectations.	0.753	13.435	
LOY ₁	I will continuously purchase from the online retailer's website in the near future.	0.820	11.083	0.842
LOY ₂	I recommend that others use the online retailer's website services.	0.806	10.954	
LOY ₃	My preference for the online retailer's website would not willingly change.	0.778	10.695	
LOY ₄	Changing my preference from the online retailer's website requires major rethinking.	0.641	Fixed	

Note: t-values are from unstandardised solution. All the items are significant at 0.01 significance level. Some t-values are unavailable (e.g., ×) because the loadings are fixed at 1.00 for scaling purposes.

Customer loyalty in a highly competitive market: An investigation of the mobile prepaid sector

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Keywords

Customer loyalty;
Mobile market; Pre-paid market

Abstract

Rooted in customer relationship marketing theory, this study investigates customer loyalty in the highly competitive prepaid mobile market in South Africa. Specifically, several antecedents of customer loyalty – perceived value, perceived trust, perceived corporate image, perceived customer expectations, and perceived customer care service – were identified from the literature, and the influence of each on customer loyalty was tested. Data was collected from 411 mobile prepaid users using self-administered questionnaires, and analysed using SPSS and AMOS. The findings indicated that perceived service trust, perceived value, and perceived corporate image expectations significantly and positively influenced customer loyalty, while perceived customer care service was the only non-significant antecedent, and perceived value had a negative relationship with customer loyalty. The results could aid marketers working in the prepaid mobile sector with insight into the most important loyalty antecedents on which they should focus and which they should manage in order to secure loyalty in this very competitive market. Mobile service providers need to place a stronger focus on their customer care strategies to strengthen loyalty through the development of a client-focused service approach that is characterised by customer-centric engagement, the professional management of service failure, and a speedy reactive approach to customer queries. Also, through continuous training and development, employees could be enabled to deliver on the customer care expectations of mobile customers more successfully.

1. Introduction

Customer loyalty is a concept that has been widely studied in the telecommunications industry by many researchers, and has become a key consideration for network operators (Tariq & Mat, 2018; Yang & Liu, 2018; Izogo, 2015). Loyalty is defined as “a deeply held commitment to rebuy or patronise a preferred service or product consistently in future” (Izogo, 2015). Service providers across different service industries have realised the importance of customer loyalty as a key determinant of their long-term success and of securing a competitive advantage (Yang & Lui, 2018), given that the challenge of recruiting new customers has proved to be more difficult and expensive than retaining existing customers (Nasir & Mushtaq, 2014). However, limited research is available on customer loyalty in the South African mobile prepaid sector.

The South African mobile industry is characterised by an oligopolistic structure, which implies that the market is dominated by several large-scale operators, each offering products that do not differ much from those of the others. The industry also presents a significant barrier to entry, thus limiting the easy entrance of new competitors (Maisyarah, 2018). This structure in turn creates a highly competitive market in which to operate. The four dominant mobile network operators are Vodacom,

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MTN, Cell C, and Telkom; they are followed by a number of virtual operators that have also entered the market (BMI Research, 2018).

These four operators typically offer two services – prepaid (contract-free services) and postpaid (contract services). The prepaid model currently dominates the mobile market in South Africa, with prepaid subscribers accounting for about 87 per cent of the total mobile base of about 97.1 million mobile subscribers, and the remainder being postpaid customers (McKane, 2021). Prepaid customers significantly drive the volume of mobile usage (Mati & Shambare, 2016). The nature of the market structure means that the prepaid services offered by the dominant operators are similar, with little distinction between what these operators offer (Coakley *et al.*, 2017; Mati & Shambare, 2016). Consumers therefore find themselves switching between operators with ease, or even using multiple providers at the same time (Deloitte, 2017; Morgan & Govender, 2017). Operators are therefore faced with the challenge of exploring different ways to secure customer loyalty, of which building relationships with their customers has been identified as a vital solution in the services sector (Khan *et al.*, 2022; Tariq & Mat, 2018).

A review of the literature suggests that, in particular, trust, perceived value, corporate image, perceived service quality, customer expectations, and customer care service have been found to be the most common determinants of customer loyalty in the mobile industry (Diaz, 2017; Morgan & Govender, 2017; Pumim *et al.*, 2017; Adebisi *et al.*, 2016; Ismail & Yunan, 2016). Responding to this identified gap in the research specifically into the mobile *prepaid* segment, this paper investigates these identified antecedents of customer loyalty in the prepaid market in particular.

This paper begins with the problem being investigated, followed by the research objectives and hypotheses, and then a literature review. This is followed by a discussion of the methodology and the presentation of the key results. The paper concludes with managerial implications that flow from the results, and identifies areas for future research.

2. Problem investigated

The market structure of the mobile industry in South Africa is that of an oligopoly, making this market highly competitive. This competitive landscape is further characterised by a large customer base specifically of prepaid customers. Interestingly, while this is the largest of the consumer bases in this industry, it is a market segment that has enjoyed limited research attention. The nature of the mobile market structure in South Africa means that mobile operators struggle to differentiate their businesses, and specifically their product offerings. A possible solution therefore lies an emphasis on building customer relationships, rather than purely a product focus in a competitive industry such as the mobile industry in South Africa. The theory of relationship marketing argues that building strong relationships with customers can secure and enhance long-term customer loyalty (Khan *et al.*, 2022). This study, therefore, is grounded in relationship marketing theory; it identifies the antecedents of customer loyalty, and tests each of these antecedents and their influence on customer loyalty, specifically in the prepaid consumer market. The specific objectives of the study are outlined in the next section.

3. Research objectives

The primary objective of this study was to investigate the influence of the identified antecedents of customer loyalty on customer loyalty among a prepaid consumer segment.

The secondary objectives were:

- To determine whether a significant and positive relationship exists between perceived trust and customer loyalty
- To determine whether a significant and positive relationship exists between perceived service quality and customer loyalty
- To determine whether a significant and positive relationship exists between perceived value and customer loyalty

- To determine whether a significant and positive relationship exists between corporate image and customer loyalty
- To determine whether a significant and positive relationship exists between customer expectations and customer loyalty
- To determine whether a significant and positive relationship exists between customer care service and customer loyalty

4. Literature review

The literature review provides the background and context of the South African mobile market, followed by the theory grounding the study, and concluding with a discussion of the specific identified antecedents of customer loyalty in the mobile market.

4.1 Understanding the South African mobile market

The number of mobile subscribers in South Africa has been climbing steadily in the past 20 years. In 2000 there were around 8.3 million subscribers, while this number stood at 95.96 million at the end of 2020 (O’Dea, 2021). The market is dominated by four cellular service providers. Vodacom has 42 per cent of the market share, followed by MTN, which has 31 per cent market share, Telkom with 15 per cent, and Cell C with 12 per cent (Msomi, 2022). Prepaid subscribers are by far the most numerous, in particular for cellular voice services; by the end of 2021 they made up 84 per cent of total mobile cellular voice subscriptions (Statista, 2022). Vodacom had 31.8 million prepaid subscribers, MTN had 25.3 million, Telkom had 12.3 million, and Cell C had 8.35 million (McKane, 2021).

Prepaid customers are known for being disloyal. This behaviour is driven by numerous trends, such as operators offering products that show very limited differentiation (Altan, 2019), and the low financial and procedural switching costs associated with moving between providers (Kalebaila *et al.*, 2017). A number of prepaid customers even own multiple SIM cards and switch between operators, depending on the different costs at different times of the day or specials that are running (Deloitte, 2017). The fact that the market is dominated by only a few players, together with the points just made, means that this market is highly competitive. The number of these subscribers suggests, however, that there is good potential revenue to be made. The problem, therefore, is to identify ways in which to secure customer loyalty among this prepaid segment. A customer relationship marketing approach has been found to be effective in building strong relationships with customers; and this can in turn secure customer commitment and loyalty (Khan *et al.*, 2022). Thus this study is therefore rooted in the theory of customer relationship marketing.

4.2 The importance of securing loyalty in building long-term relationships with customers

In the marketing literature, loyalty has been extensively validated as an important requirement for building long-term relationships in a business-to-consumer (B2C) environment (Tabish, 2018) – especially since the establishment and professional management of loyalty can enable businesses to strengthen their existing market share and to secure a competitive edge in a highly cutthroat business environment (Khundyz, 2018). Amin *et al.* (2017) concur, stating that building long-term relationships with existing customers has proven to be more cost-effective than recruiting new customers. Tabish (2018) states that the overall profitability of a business can be increased through the successful management of customer loyalty, since customers will purchase products and services more regularly and will become less sensitive to price in the long term. Scholars such as Kaur and Soch (2018) agree, and state that the current customers of a business contribute positively to the share of visits and of wallet for the business, thereby directly contributing to the overall long-term profitability of the business. Furthermore, customers who are loyal to a brand have a positive attitude and a strong psychological commitment to it. Such customers are in a better position to withstand offers from competitors, and have a lower propensity to switch (Cui *et al.*, 2021; Le, 2021). Interestingly, scholars such as Putit and Abdullah (2019) established in a study conducted in the mobile industry in Malaysia that a customer can be cultivated from being purely a prospect, to becoming a partner through the application of a relationship marketing strategy that secures long-term rewards to customers for their ongoing loyalty to the business.

4.3 A perspective on relationship marketing theory as a grounding for the study

Roberts-Lombard *et al.* (2017) argue that the focus of relationship marketing (RM) is on the creation of value, and should be sustained through improved relationships. Improved relationships, in turn, can only be secured if benefits are established for both parties (the organisation and the customer), and all parties are then satisfied. Gummesson (2017) supports this argument, explaining that RM is rooted in creating professional win-win relationships in which value is created and exchanged. Other benefits and outcomes associated with RM include the dimensions of trust and commitment; and it is argued that these two dimensions are key to maintaining customer relations (Morgan & Hunt, 1994). Trust is further argued to create confidence benefits in the relationship, which can reduce customer anxiety and enhance the organisation's knowledge of customers' service expectations (Yen *et al.*, 2015). According to Salem (2021), RM has recently become crucial in securing the success of companies, and can help companies to sustain themselves in the long term. Importantly, RM is also argued to help establish a connection with customers, as well as sound long-term relationships; and these strong relationships can lead to customer retention and loyalty (Khan, Salamzadeh, Iqbal & Yang, 2022; Salem, 2021). Building retention and loyalty, in turn, helps an organisation to build its purchasing power, as high levels of loyalty are associated with repeat patronage (Khan *et al.*, 2022). Thus it is argued that it is important to understand the concept of loyalty and its respective antecedents better.

4.4 The proposed theoretical model reflecting on the relationships between customer loyalty and its antecedents

4.4.1 Trust

Trust is described as a feeling that exists when a party to a relationship has confidence in another party's integrity and reliability (Wang *et al.*, 2015). Trust is also argued to be a key factor in building long-term relationships (Morgan & Hunt, 1994). Increased trust between the customer and the service provider is imperative to secure relationship success: where trust exists, the relationship is likely to be highly valued, and both parties (customer and organisation) will want to commit themselves to the relationship in the long term (Ngoma & Ntale, 2019). Trust is therefore an important element for fostering long-term relationships, and plays a role in determining the success of businesses – in particular, in the service industry, as it is characterised by uncertainty, high degrees of risk, and vulnerability (Pumim *et al.*, 2017). These characteristics are especially relevant to the mobile sector. Trust, therefore, is argued to influence the future loyalty intention of customers; and so the following is hypothesised:

H1: Perceived trust has a positive and significant influence on customer loyalty in the mobile prepaid segment.

4.4.2 Service quality

Service quality is defined as “a form of attitude which can be measured by assessing consumers' quality perceptions of service firms' efforts in fulfilling the service quality gaps” (Quoquab *et al.*, 2016). Service quality is also a differentiator that can help operators in the mobile industry to gain a competitive edge and to maintain loyal customers (Quoquab *et al.*, 2016). It is further argued that customers who are delighted with the quality of the service received, might become truly loyal, resulting in increased profitability (Dey *et al.*, 2017). Service quality is suggested, therefore, to influence the future loyalty intention of customers; thus the following is hypothesised:

H2: Perceived service quality has a positive and significant influence on customer loyalty in the mobile prepaid market.

4.4.3 Perceived value

Perceived value is defined as “the assessment of the difference in perception between actual service performed and customers' expectations” (Zeithaml, 1988). The willingness of a customer to keep their existing relationship with a service provider is arguably greatly influenced by the service provider's ability to provide greater value to the customer (Morgan & Govender, 2017). Perceived value is also argued to be one of the key reasons that consumers choose and remain with a service provider in the

mobile prepaid market (Pumim *et al.*, 2017). Arguably, when superior value is provided, the customer's willingness to engage in repeat purchases is increased and the intention to switch decreased (Hernandez-Ortega *et al.*, 2017). Perceived value is therefore argued to have an influence on the future loyalty intention of customers. Thus the following hypothesis is proposed:

H3: Perceived value has a positive and significant influence on customer loyalty in the mobile prepaid market.

4.4.4 Perceived corporate image

Perceived corporate image is defined as “the perceptions on an organization that reflect the associations of consumers’ memory” (Keller, 1993). Customers who form a favourable attitude to a service provider’s reputation might become resistant to competitive offers, and so remain loyal to a specific service provider (Giovanis *et al.*, 2016). Positive service experiences also enhance customers’ perception of corporate image, and this might increase their repurchase intentions, and ultimately lead to loyalty (Pumim *et al.*, 2017). Kaur and Soch (2018) also suggest that a service provider retains and gains more satisfied customers from a good reputation and, in the long run, loyalty is enhanced and profitability is increased. Perceived corporate image is therefore argued to influence the future loyalty intention of customers, and so the following is hypothesised:

H4: Perceived corporate image has a positive and significant influence on customer satisfaction in the mobile prepaid market.

4.4.5 Customer expectations

Customer expectations are defined as “beliefs about service delivery that serve as standards against which the quality of a service is judged” (Zeithaml *et al.*, 2009). Building customer loyalty entails offering services that satisfy customers’ demands or expectations, with the intention of establishing permanent relationships and delivering additional value (Ramlall, 2018). When the needs and expectations of customers are fulfilled, organisations can benefit from increased market share and profitability because of customer loyalty (Yee *et al.*, 2015). Perceived customer expectations are therefore argued to have an influence on the future loyalty intention of customers, and so the following hypothesis is proposed:

H5: Perceived customer expectations have a positive and significant influence on customer satisfaction in the mobile prepaid market.

4.4.6 Customer care service

Customer care service is a process that takes place between a customer and an organisation that encompasses a range of activities, such as customer support systems that guide a customer through the entire service delivery value chain before, during, and after a purchase (Adebiyi *et al.*, 2016). Customer care is argued to be an important ingredient in retaining customers, as it affects both attitudinal and behavioural loyalty (Srivastava & Kaul, 2016). Service quality in return is perceived in instances where interactions take place between customers and service providers, and this can lead to customer loyalty (Karami *et al.*, 2016). Therefore, perceived customer care service is argued to influence the future loyalty intention of customers, and so the following hypothesis is proposed:

H6: Perceived customer care service has a positive and significant influence on customer loyalty in the mobile prepaid market.

Figure 1 outlines the proposed model for the study, indicating the antecedents of customer loyalty identified above.

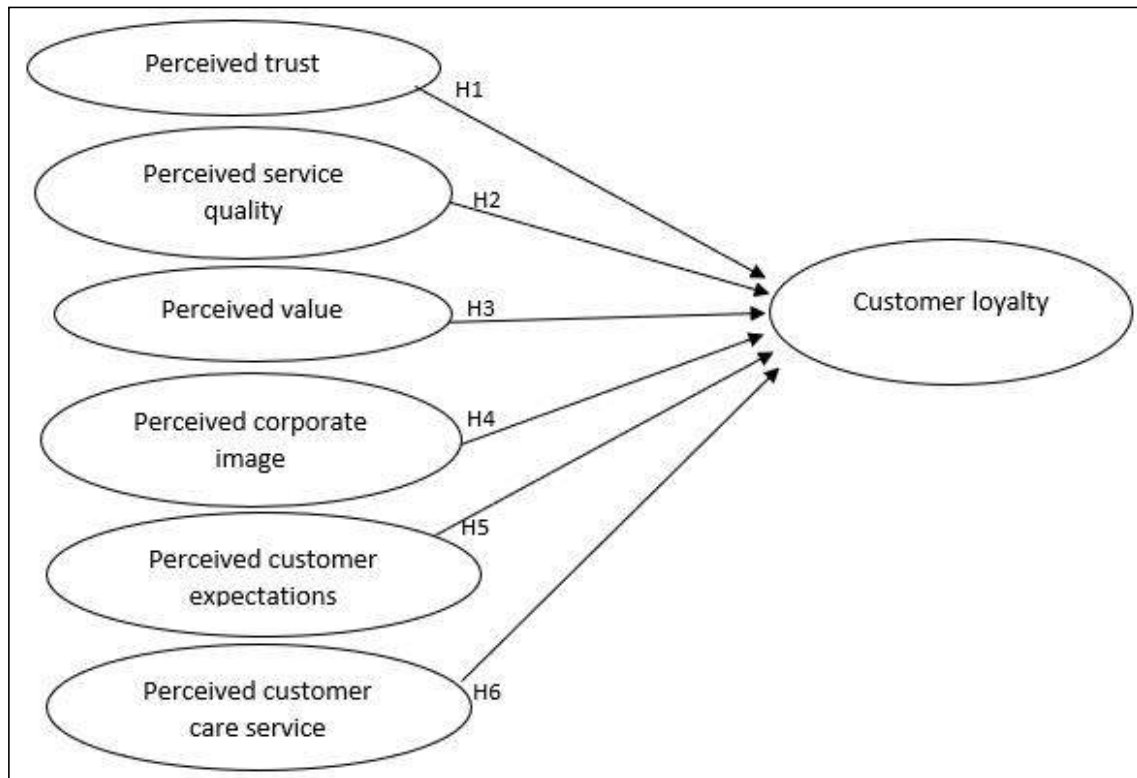


Figure 1: Antecedents of customer loyalty

Source: Authors' own construct

5. Research methodology

5.1 The research context and the sampling process applied

The study was quantitative and descriptive-interpretive (Elliott & Timulak, 2021) in nature. The sample consisted of South African mobile prepaid service users aged 18 to 35 who lived in Gauteng, and who used Vodacom, MTN, or Cell C as their network operator. Telkom was excluded as a network operator, as their market share was below 10% at the time of questionnaire development - end of 2019 (Asokoinsight, 2021). The targeted age group constitutes about 66 per cent percent of mobile internet users in South Africa (ICASA, 2021; Statista, 2021), and is one of the largest markets to which service providers sell their products (Deloitte, 2017). A sample size of 400 respondents was targeted, but a total of 411 useable responses was received. The final sample comprised 220 male respondents (53.5%) and 189 female respondents (46%). The respondents were mostly educated, having at least a school-leaving certificate (51.1%); the majority were Black (60.1%) and spoke English (41%).

5.2 Data collection

The data was collected over a six-week period using a self-administered survey. Fieldworkers from a research company were trained and tasked to distribute the hard copy survey to qualifying respondents within the specified quotas across Gauteng; Google Forms was also used to distribute the survey via email to friends, connections and colleagues that fit the quotas required. A non-probability quota sampling technique was therefore applied, as the researchers could not obtain a list of network users.

5.3 Measures and items

The measurement scales were adapted from previous studies, but were modified to fit the context of the mobile prepaid market. To increase the reliability of the measurement scales, a combination of items from different scales, based on the literature review, was used to measure the same construct. A five-point Likert scale was applied across all of the variables, where 5 was 'strongly agree' and 1 was 'strongly disagree'. The items measuring the key constructs in this study, and the previous studies

from which they were obtained, are shown in Table 1.

Table 1: Measurement of constructs

Construct	Scale items	Source
Perceived trust (PT)	It is my opinion that my cell phone network service provider is always honest with me	Van Vuuren, Roberts-Lombard & Van Tonder (2011)
	I believe that my cell phone network service provider treats me with the necessary respect	
	I feel that my cell phone network service provider understands my needs	
Perceived service quality (PSQ)	My cell phone network service provider delivers its services at the time it promises to do so	Nyadzayo & Khajehzadeh (2016)
	My cell phone network service provider keeps me informed about when and how services will be performed	
	My cell phone network service provider focuses on solving customer complaints	
	The employees of my cell phone network service provider understand my specific needs.	
	The employees of my cell phone network service provider are well dressed and always appear neat	
Perceived value (PV)	My cell phone network service provider offers me value for money	Calvo-Porrall & Levy-Mangin (2015)
	I consider the rates of my cell phone network service provider as reasonable	
	Doing business with my cell phone network service provider is a right decision when price and other costs are considered	Nyadzayo & Khajehzadeh (2016)
	Doing business with my cell phone network service provider is a right decision when the overall quality of service delivery is considered	
	Compared to the quality of cellular service reception that I get, I pay a reasonable price	
Perceived corporate image (PCI)	My cell phone network service provider is a reliable company	Giovanis <i>et al.</i> (2016)
	My cell phone network service provider offers excellent services to customers	
	My cell phone network service provider is truthful to its customers	
Perceived customer expectations (PCE)	My cellular service provider meets my requirements on overall service expectations	Dutta (2017)
	Overall, I am satisfied with the services of my cellular service provider	
	My cellular service provider exceeds my service requirements	
Perceived customer care service (PCS)	The employees of my cellular service provider are always willing to help	Tang & Shen (2018)
	My cellular service provider responds to requests promptly	
	The employees of my cellular service provider are polite	
	When I have problems, my cellular service provider is sympathetic	
	I feel safe in my interactions with the Service Provider.	
Perceived customer loyalty (PCL)	I will continue to use my cellular service provider	Chuah <i>et al.</i> (2017)
	I will recommend my cellular service provider to others	
	Even if my friends recommended another service provider, my preference for my cellular service provider would not change	
	My cellular service provider is my first choice	Nyadzayo & Khajehzadeh (2016)
	I consider myself to be highly loyal to my cellular service provider	

5.4 Data analysis strategy

The data was analysed using the latest version of Statistical Package for Social Scientists (SPSS 28) and AMOS. The research validity analysis was carried out by determining the Cronbach's α coefficient, and a correlation analysis measured the relationship among the suggested variables. To assess model fit, the commonly used model fit indices in CFA were used: the chi-square degrees of freedom ratio (CMIN/df), the goodness-of-fit index (GFI), the Tucker-Lewis index (TLI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA) (Hair, Black, Babin & Anderson, 2019).

6. Results and Findings

6.1 Assessment of normality

The assessment of normality was done, and the results were confirmed by using the Kolmogorov-Smirnov and Shapiro-Wilks tests, as the data for the sample did not achieve normality ($p < 0.05$). However, normal distribution was inferred using the central limit theorem because of the large sample size.

6.2 Confirmatory factor analysis (CFA)

The six-factor measurement model revealed that the model fitted the data, but a number of factors had extremely high correlations, as shown in Table 2. An exploratory factor analysis (EFA) was used to investigate the factor loadings, resulting in the model merging some factors, with a new measurement model being formed. A four-factor model was evident with new identified factors, and included perceived service trust (perceived service quality and perceived trust – PST), perceived value (PV), perceived corporate image expectations (perceived corporate image and perceived customer expectations – PCIE), and perceived customer care service (PCCS).

Table 2: Correlation matrix

	PSQ	PV	PCI	PCE	PCCS	CL
PT	0,998	0,776	0,848	0,853	0,797	0,803
PSQ		0,824	0,926	0,900	0,904	0,843
PV			0,742	0,789	0,719	0,668
PCI				0,942	0,925	0,886
PCE					0,873	0,873
PCCS						0,852

A confirmatory factor analysis was then performed to assess the new model with only four variables, using AMOS. First the model fit of the measurement model was assessed, with a normed chi-square (χ^2/df) of 1.782, a normed fit index (NFI) of 0.935, a Tucker-Lewis index (TLI) of 0.963, a comparative fit index (CFI) of 0.97 and a root mean square error of approximation (RMSEA) of 0.044. The model fit statistics are presented in Table 3.

Table 3: Measurement model – goodness-of-fit assessment

Category of model of goodness-of-fit	Selected indices	Acceptable fit	Model fit outcomes
Absolute fit index	Chi-square (χ^2)/ CMIN	A value of $\chi^2 < 3.0$ indicates good fit (Hair <i>et al.</i> , 2019:636; Awang, 2015)	1.782
	Df		84
	p-value		0.000
	RMSEA		0.044
		RMSEA < 0.06 good (Cangur & Ercan, 2015:157)	

	CFI	Value of ≥ 0.90 indicates good fit (Hair <i>et al.</i> , 2019:640)	0,97
Incremental fit index	NFI	Value of > 0.80 (Forza & Filippini, 1998:14) or ≥ 0.90 indicates good fit (Hair <i>et al.</i> , 2019:640; Hooper <i>et al.</i> , 2008:55)	0.935
	NNFI (TLI)	Value of ≥ 0.90 indicates good fit (Cangur & Ercan, 2015:158)	0,963

Table 4 provides insight into the factor loadings, and the variance is explained of the items used to measure the *four newly formulated constructs* of the study (see earlier in this section). The factor loadings and AVEs for all of the constructs measured had a value of greater than 0.50, indicating that the criterion for convergent validity for the research instrument was met. Regarding reliability, the composite reliability and Cronbach's α values for the constructs exceeded the recommended value of 0.70; thus the scales used were reliable and had internal consistency (Wiid & Diggins, 2015).

Table 4: Convergent validity and reliability scores

Construct and items		Factor loadings	Cronbach's α value	CR value	AVE
PST	PT1	0.756	0.829	0.896	0.664
	PT2	0.773			
	PT3	0.779			
	PSQ1	0.867			
	PSQ2	0.842			
	PSQ3	0.753			
	PSQ4	0.845			
PV	PV1	0.762	0.874	0.832	0.501
	PV2	0.686			
	PV3	0.719			
	PV4	0.725			
	PV5	0.640			
PCIE	PCI1	0.849	0.879	0.902	0.695
	PCI2	0.883			
	PCI3	0.793			
	PCE1	0.888			
	PCE2	0.773			
	PCE3	0.810			
PCCS	PCCS1	0.758	0.848	0.809	0.570
	PCCS2	0.789			
	PCCS3	0.787			
	PCCS4	0.738			
	PCCS5	0.699			
PCL	CL1	0.730	0.901	0.901	0.503
		0.719			
	CL2	0.694			
	CL3	0.714			
	CL4	0.748			

Table 5 outlines the results that show that discriminant validity was achieved for the four newly formulated constructs and for perceived customer loyalty (PCL). The constructs met the discriminant validity criterion, as most of the square roots of the AVEs were greater than the inter-construct correlations (Fornell & Larcker, 1981). In addition, the measurement model did not display any scale items that cross-loaded significantly with other constructs, indicating discriminant validity. It could thus be concluded that the model demonstrated sufficient reliability and construct validity. Considering these results, the researchers could continue to assess the structural model.

Table 5: Discriminant (divergent) validity scores (SQRT values in bold)

Research constructs	PST	PV	PCIE	PCCS	CS	CL
Perceived service trust (PST)	0.815					
Perceived value (PV)	0.729	0.727				
Perceived corporate image expectations (PCIE)	0.810	0.699	0.833			
Perceived customer care service (PCCS)	0.719	0.612	0.783	0.754		
Perceived Customer loyalty (PCL)	0.748	0.614	0.809	0.736	0.782	0.721

6.3 Assessment of the structural model

The goodness-of-fit measures were first assessed for the structural model, and the model fit indices revealed that it fitted the data sufficiently. It was found that the normed chi-square (χ^2/df) was 1.997, the normed fit index (NFI) was 0.914, the Tucker-Lewis index (TLI) was 0.948, the comparative fit index (CFI) was 0.957 and the root mean square error of approximation (RMSEA) was 0.048, as presented in Table 6. Subsequently, the structural paths for the study were inspected.

Table 6: Structural model: goodness-of-fit assessment

Category of model of goodness-of-fit	Selected indices	Acceptable fit	Model fit outcomes
Absolute fit index	Chi-square (χ^2)/CMIN	A value of $\chi^2 < 3.0$ indicates good fit (Awang, 2015:57)	1,997
	Df		160
	p-value		0.000
	RMSEA	RMSEA < 0.06 good fit (Cangur & Ercan, 2015:157)	0.048
Incremental fit index	CFI	Value of ≥ 0.90 indicates good fit (Cangur & Ercan, 2015:159)	0,957
	NFI	Value of > 0.80 (Forza & Filippini, 1998:14) or ≥ 0.90 indicates good fit (Hair <i>et al.</i> , 2019:640; Hooper <i>et al.</i> , 2008:55)	0.914
	NNFI (TLI)	Value of ≥ 0.90 indicates good fit (Hair <i>et al.</i> , 2019:640)	0,948

Table 7 provides insight into the hypotheses that were formulated for the study. The results in Table 7 display only four hypotheses, as opposed to the original six, owing to the formulation of the new variables as a result of the EFA and CFA analysis (see section 6.2). The results indicated that perceived service trust, perceived value, and perceived corporate image expectations significantly and positively influenced customer loyalty, with perceived corporate image expectations having the highest significance for customer loyalty. Customer care service did not have a significant impact on

customer loyalty, while perceived value (even though significant) showed a negative relationship with customer loyalty.

Table 7: Structural model estimates for the proposed model

Structural paths	Hypothesis	Parameter estimate (β)	T-statistic (t)	P-value	Rejected / supported
Perceived service trust ---> Customer loyalty (CL)	H ₁	.213	2.082	.037	Supported
Perceived value (PV) ---> Customer loyalty (CL)	H ₂	-.287	-3.055	.002	Supported
Perceived corporate image expectations (PCIE) ---> Customer loyalty (CL)	H ₃	.614	2.340	.019	Supported
Perceived customer care service (PCCS) ---> Customer loyalty (CL)	H ₄	.050	.377	.706	Rejected

Discussion of findings

The high incidence of multi-collinearity between the variables of service quality and trust (merged into perceived service trust) and between corporate expectations and corporate image (merged into perceived corporate image expectations) resulted in the development of two new variables. Perceived service trust, perceived value, and perceived corporate image expectations significantly and positively influenced customer loyalty, with perceived corporate image expectations having the greatest impact on customer loyalty (its path coefficient value was 0.614), whereas the coefficient of perceived service trust was 0.213 and that for perceived value was -0.287. These findings are supported by previous findings in the literature (Adebiyi *et al.*, 2016; Nyadzayo & Khajehzadeh, 2016; Firend & Masoumeh, 2014). The high significance of perceived corporate image expectations could be a result of the identified samples' age group, often known as the millennial segment. Millennials are said to be focused on brands that provide more to them than merely a functional offer (GfK, 2017), and prefer brands that are authentic and allow for emotional bonds to be created (Rodrigues & Rodrigues, 2019; GfK, 2017). This might imply the high relevance of perceived corporate image expectations.

Interestingly, perceived value showed a negative coefficient, indicating that the perceived value of prepaid mobile cellular network providers and customer loyalty are inversely related. This contradicts previous findings (Pumim *et al.*, 2017; Chuah *et al.*, 2014; Firend & Masoumeh, 2014). The inverse relationship with perceived value was an interesting one. Two factors might underlie this relationship: the market is characterised as offering little product differentiation, owing to its oligopolistic structure (Maisyarah, 2018); and it has been suggested that the market is characterised by low switching costs, and that consumers often own SIM cards from multiple service providers (Deloitte, 2017). These findings highlight the challenge of creating perceived value and, arguably, the need to improve this aspect, because previous findings suggest its clear potential for contributing to loyalty (Pumim *et al.*, 2017; Chuah *et al.*, 2014; Firend & Masoumeh, 2014) – even though these arguments do not shed more light on why this is an inverse relationship. The relationship between perceived value and loyalty was however a significant one, suggesting that this variable did have an influence, and should therefore be explored in greater depth to understand its role and contribution in this specific market context and market segment.

Also contrary to previous findings, perceived customer care service did not significantly and positively influence the loyalty of mobile users in this context (Amoako *et al.*, 2016; Srivastava & Kaul, 2016; Kim *et al.*, 2015; Wang, 2015). A major social media sentiment study by BrandsEye and Deloitte in 2020 that analysed two million social media posts found that the highest negative sentiment towards mobile service providers was service delivery levels (BusinessTech, 2021). This suggests that the overall market perception of service quality in this industry is very low, and that this variable has little significance for consumers in this industry. This might explain why this variable did not play a significant role in promoting loyalty.

7. Theoretical implications and managerial recommendations

7.1 Theoretical implications

The theoretical contribution of this paper is threefold. First, the study makes a contextual contribution by testing the antecedents of customer loyalty in an under-researched market segment – that of prepaid mobile customers. Second, rooted in relationship marketing theory, the study contributes a newly established and statistically verified model that has been developed to measure customer loyalty, while also strengthening the argument for the importance of relational aspects in securing loyalty. Third, the study reports those factors that were significant in driving customer loyalty in this market segment, but also reveals one non-significant and one significant relationship, as well as an inverse relationship that should be further researched.

7.2 Managerial recommendations

The managerial recommendations include a strong focus on perceived corporate image, as this variable proved to be the most significant in determining customer loyalty. Especially in light of the chosen sample for the study (millennials), this represents an important current and future market segment for this industry. Previous findings have proposed that millennials need a deeper connection with brands, and are not necessarily strongly focused on the functional component. This might be why this variable played such a significant role in influencing loyalty, and so managers are encouraged to apply a greater focus on this aspect. Using social media platforms (which are popular in this market segment) and posting content that relates to the brand's purpose, meaning, corporate initiatives, and societal contribution might help to achieve this objective. Similarly, a greater focus should be placed on managers' commitment to enhance perceived service trust. This could be achieved mainly through consistency in customer service offerings and by applying a relationship-building orientation. To achieve this, managers should roll out a renewed customer service training approach with a strong emphasis on fostering trust.

Considering that perceived customer care service did not make a significant contribution, even though previous studies found it to be important, it is suggested that managers once again invest in their staffs' customer service approach and training. This should not only remind service employees of the importance of fostering trust (as mentioned earlier), but also focus on equipping employees with the skills to show customer understanding, empathy, and genuine customer care. Tone of voice, active listening and listening with care, the use of words – these are all components that could be applied to establish customer rapport.

Perceived value expectations should also be a key focus; even though this showed an inverse relationship, it was still a significant contributor to loyalty. The industry is characterised by providing minimal product differentiation. A renewed focus on developing value-for-money offerings and differentiated products and service levels is therefore imperative. To achieve this, managers are encouraged to invest aggressively in market research and to consider establishing innovation units. Not only could this develop greater differentiated offers, but it would also help to promote this important technological sector.

8. Conclusion and limitations

The study successfully explored customer loyalty in the highly competitive prepaid mobile market in South Africa. It established the important role played by perceived service trust, perceived value, and perceived corporate image expectations in securing the loyalty of customers. It also determined the need to develop strategies that would successfully address the future customer care service expectations of mobile pre-paid customers in South Africa. However, this study is not without its limitations. The lack of a list of mobile customer clients led the researchers to opt for a non-probability sampling method. The results of the study should therefore be interpreted against this background, appreciating that these results do not represent the entire South African population, and should be reported and communicated as such. The sector also has smaller network service providers that were deliberately excluded in favour of a focus on the three dominant market players (as per their

2019 market share percentages). The age range of the sample – although a substantial and important segment in this industry – represents only the millennial cohort.

Future studies should explore the instance of multi-collinearity experienced for the variables of service quality and service trust, as well as for corporate image and customer expectations. The researchers encourage future studies that use these same variables to determine whether similar results would be obtained, and to report on their insights. Researchers might also want to test and explore the two newly formed variables developed as a result of multi-collinearity in order to verify, through repeat research, whether these could be added to the literature. The inverse relationship between perceived value and loyalty should also be explored through repeat research, to determine if similar results are obtained. In addition, the limited product differentiation that is experienced in this market suggests that perceived value should be further explored and unpacked specifically in the prepaid market context. The proposed methods to enhance customer care service should also be explored, as this is identified as a weakness in this industry that needs to be improved. Finally, future research is also encouraged to explore the importance of corporate image expectation and of millennials' expectations of corporate brands.

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Challenges Faced by Small, Medium and Micro Retailers in South Africa in Developing an E-Commerce Route to Market

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Keywords

E-commerce, Online retailing, SMMEs, SMMRs.

Abstract

E-commerce, and specifically online retailing, is a rapidly growing industry globally, showing double digit growth annually. Whilst South Africa is following the global growth trajectory, only a small percentage of retailing takes place online when compared to the total retail spend. The COVID-19 pandemic provided a catalyst to the growth of e-commerce, with e-commerce being a big reason that many companies survived the worst of the pandemic related restrictions. Despite the international trends and unexpected catalysts, many Small, Medium and Micro Retailers (SMMRs) have not adopted e-commerce. This aim of this study was to determine the challenges that SMMRs face in adopting e-commerce.

An exploratory qualitative approach was adopted to determine the key issues. Research data was collected via semi-structured interviews with a purposive sample of seventeen SMMRs. The data was content analysed to determine the key challenges.

The study revealed several areas of alignment between prior research and this study, including the typical challenges of marketing, management support, strategic intent, and technology issues. Additional challenges identified included the cost of e-commerce, product and service type complexities, pricing and margin structure challenges, and the role of social media in e-commerce.

The findings were used to make recommendations to SMMRs on their e-commerce route to market development and strategy. The report includes a high-level model to help SMMRs with their e-commerce optimisation.

1. Introduction

E-commerce may be simply defined as the buying and selling of commodities and services using the internet. It incorporates all technologies and activities related to trading online such as internet marketing, payment processing, supply chain management and data collect and analysis (Shahriari et al., 2015). E-commerce is an established, rapidly growing, and important route to market for retailers in South Africa. Despite its importance, many South African Small, Medium and Micro Enterprises (SMMEs) have not embraced or adopted this market channel and are not trading online. Online sales

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make up only 2.8% of the total retail spend in South Africa (Daniel, 2021) and e-commerce was a R30 billion industry in 2020 (USITA, 2021).

Many Small, Medium and Micro Enterprises (SMMRs) operate under the traditional retail model which is reliant on having merchandise displayed in a retail store and on walk-in customers to purchase these goods. Their reach is limited to the community in which they are located and to the customers that enter their stores. While they may appear in online searches through owned or paid media, the lack of an e-store reduces their chances of trading with customers outside of their community. This in turn reduces their chances of growing their market share despite the existence of the technology for them to do so.

The importance and implementation of e-commerce has been highlighted and catalysed by the COVID-19 pandemic with many companies being forced to fast track their development into this space (Goldstuck, 2021). Larger and more agile companies have been able to move quickly to incorporate e-commerce into their service offerings, with Takealot, the largest online retailer in South Africa, boasting a 41% revenue growth in 2020 (Daniel, 2021). SMMRs may not have been able to respond as quickly and have thus been put at a disadvantage, with potential severe knock-on effects on the competitiveness and sustainability of these businesses (Dua et al., 2020).

1.1. Problem Statement

E-commerce and thus, omnichannel adoption, is essential for retailers and manufacturers. Modern consumers insist on convenience and the ability to shop and interact with retailers irrespective of the time of day, type of device, or channel (Plytix, 2020). From Plytix's (2020) data, omnichannel shoppers, when compared to single channel shoppers, spend 35% more in store and 10% more online. However, the online retail market tends to be dominated by large organisations. Takealot, combined with Superbalist, is substantially larger than other e-commerce online platforms (Businesstech, 2021). Takealot, the largest online retailer in South Africa posted a turnover exceeding R3.3 billion in 2020 (Daniel, 2021). Takealot and UberEats, together with a few other online retailers are currently subjects of a market inquiry by the South African Competition Commission (Businesstech, 2021). If this trend of market domination by larger companies with dominant e-commerce capability continues and if SMMRs do not try to compete or innovate, it may lead to constantly reducing revenues or to the end of many of these businesses. However, little is known of the challenges facing SMMRs in implementing e-commerce initiatives.

1.2. Research Objectives

Consequently, the aim of this study is to determine the challenges Small, Medium and Micro Retailers (SMMRs) in South Africa face in implementing e-commerce market channels, and investigating how these businesses may be assisted in competing in the online marketplace. The objectives were:

- to identify the perceived benefits of e-commerce,
- to determine the inhibitors to developing e-commerce routes to market, and
- to determine the potential enablers of e-commerce.

F-Literature Review

Global retail e-commerce sales are predicted to continue increasing to beyond \$6.5 trillion by 2023 (Plytix, 2020) and to \$16.2 trillion by 2027 at a projected compounded annual growth rate of 22.9% from 2020 to 2027 (Meticulous, 2021). The number of online shoppers has increased from 1.3 billion in 2014 to approximately 2.1 billion in 2021 (Coppola, 2021). The rise in internet and smartphones users, easy marketing through social media, evolving omni-channel business models, and new payment methods, together with e-commerce automation drive the growth of e-commerce, whilst online fraud and cybersecurity breaches have had an opposing effect (Meticulous, 2021). The Fulfilment Lab (2021) projects that the United States in-store sales are expected to be exceeded by eCommerce sales by 2024.

The South African retail industry was worth approximately R1 trillion in 2020 which is less than it was in 2019 (Tighe, 2021). South African online sales exceeded R30 billion (\$1.8 million) in 2020, which is a 66% increase from 2019 (USITA, 2021) and more than twice the R14 billion reached in 2018 (Goldstuck, 2021). Expansion in pre-COVID times was organic and followed a natural evolution pattern driven by consumer habits and the strategies of retailers, but the pandemic precipitated an e-commerce demand explosion (Goldstuck, 2021). Mastercard's 2021 data found that 68% of their survey respondents have increased their online shopping since the start of the pandemic. 71% of those respondents planned to continue shopping online post-pandemic (Morel, 2021).

2.1 Perceived benefits of E-commerce

In-person shopping and online shopping are no longer separate or competing models but are rather merging into one omni-channel offering (McAdams, 2021). With growing technology, consumers expect seamless convenient and connected retail experiences that blend into their everyday lives (Clack, 2020). Entrepreneurs thus need to develop their e-commerce capability to survive market competition (Ishtiaq, 2020). The following are the benefits to businesses:

- **Operating hours:** Unlike a physical store, online stores are accessible to consumers at any time of the day or night. They are available without the cost of onsite staff at overtime rates and without any of the other challenges associated with twenty-four-hour operations (Joseph, 2019).
- **Cost effective:** Setting up a e-store is cheaper than setting up a physical shop or a second branch. Besides avoiding property rental and other costs associated with a physical building, cost savings come from cheaper marketing and lower permanent staff requirements due to automation and outsourced skills (Ishtiaq, 2020).
- **Global reach:** Whilst a company may not necessarily strive to have a global reach, global reach is enabled by e-commerce and companies may reach and interact with consumers in any part of the world if they choose to do so (Joseph, 2019).
- **Scalable:** E-commerce is easily scalable through expanding serviced geographies, an updated and optimized site, or new features and services to match market trends and customer demand (Ishtiaq, 2020).
- **Faster response to market demands:** Amazon (2021) believes that every interaction is faster on E-commerce marketplaces and that customer demands are easier to respond to. Market trends are easy to react to and sellers can launch promotions and make deals available efficiently and quickly.
- **Marketing:** An e-commerce site with the right strategies can generate sales by effective target marketing and converting visitors to leads. These leads ultimately become paying Customers, especially with more customers turning to the internet for information (Membrillo, 2021).
- **Enterprise extension and technology integration:** The Internet is a relatively low cost means to extend a company's enterprise beyond its own organization. Enterprise resource planning (ERP), supply chain management (SCM) and customer relationship management (CRM) are tools that can easily be deployed and integrated efficiently over the Internet, enabling efficiency across multiple disciplines (Joseph, 2019).
- **Disintermediation:** E-commerce is effective in reducing the number of levels between customers and suppliers, thereby improving efficiency whilst reducing costs (Joseph, 2019) along the supply chain and ultimately to the customer.
- **Improved customer service:** E-commerce facilitates easy to use feedback mechanisms on products and service via ratings, comments and returns. This data is a key input to improving both service and product quality (Urjalab, 2020).
- **Technology-based customer interface:** The e-commerce technology suit allows for 'screen-to-face' customer interaction via electronic devices. This increases the options that customers have available to interact with a business. Such options include email, contact forms, rating systems and chat bots. In many cases these electronic options are more cost effective over time and can reduce the customer issue resolution time and hence increase sales through better customer satisfaction (Joseph 2019).
- **Customer-controlled interaction:** The customer controls the interaction with the retailer and is free to make use of self-service functionality and decide when to shop or log a query. Conversely, a

physical shopping experience puts some control back in the hands of the retailer, especially where the quality and influence of staff may impact the overall shopping experience positively or negatively (Membrillo, 2021).

- Customised shopping experience: Virtual stores have functionality and data that may be used to customise a shopper's online experience. Data such as previous purchases, product ratings, past search behaviour, location and many other elements, form part of a data set that is, once analysed, used to decide how, when and what to present to a specific customer (Membrillo, 2021).
- Knowledge of customer behaviour: E-commerce facilitates, with other technology partners, the collection of an unprecedented amount of high-quality data on a customer. Such data includes customer behaviours on websites visited like, length of stay, page views, wish lists and shopping carts, purchases, value of purchases, repeat purchases and visit-to-purchase percentages (Membrillo, 2021).
- Localisation: The process of preparing content that is technically and contextually appropriate to a specific regions' language, currency, units of measure and other unique factors including slang and culture. Cross-border retailers that are not considering localisation are potentially missing out on a growing market (Plytix, 2020). Localised e-commerce may be considered a benefit and competitive advantage for local retailers in their home country.

Many of these benefits would be available to SMMRs who adopt e-commerce route to market to build their businesses.

2.2 Inhibitors to developing E-commerce routes to market

Wymer and Regan (2005) classified factors that influence e-commerce adoption decisions into four factor groups. These factor groups of Environmental, Knowledge, Organisational and Technology were used as a framework to classify the inhibiting factors identified in this study.

- Environmental inhibiting factors:
 - Regulatory challenges: AL-TIT (2020) concluded that legal barriers were an inhibiting factor for the adoption of e-commerce. Local laws and regulations for international e-commerce is a challenging factor for the overall e-commerce market (Meticulous, 2021).
 - Competitive pressure: Competitive Pressure is an external force that triggers organisational change to keep up with competitors (Spacey, 2020). However, many companies have still not adopted the e-commerce route to market, despite the external pressure to do so (Marotta, 2021).
 - Market viability: Whilst the e-commerce sector is growing rapidly, not all market sectors shop online. Despite the efforts of government to grow e-commerce during the COVID-19 pandemic, persistent digital and economic divides prevented full participation (OECD, 2020).
 - Availability of partners and vendors: Van Huy et al (2012) identified two inhibitors of e-commerce adoption: the complexity of innovative solutions and the perceived risks of e-commerce. The choice of methods by which a company can adopt an e-commerce solution in 2021 has grown substantially with a variety of service providers using different commercial models (DeMatas, 2021). However, the readiness of suppliers to integrate with new technology solutions is still a critical inhibiting factor (Karrer, 2017).
- Knowledge inhibiting factors:
 - Experience: A lack of prior experience with new technology implementations and the lack of understanding of available e-commerce solutions is a significant inhibitor of e-commerce adoption (Wymer and Regan, 2005). Online retailing requires a different skill set from a traditional retail store (Bick and Leigh, 2014).
 - Innovativeness: AL-TIT (2020) concluded that both Innovativeness and Perceived Ease of Use were important barriers to e-commerce if senior leadership did not have the willingness to change or felt that e-commerce adoption was difficult. However, necessity triggered by COVID-19 may have overridden the influence of Innovativeness and PEOU in recent times (Dludla, 2020).

- Organisational inhibiting factors:
 - Senior management support: Apart from financial support, non-financial support from senior management is critical to the adoption of digital transformation, and active participation in projects (Karimi and Zhiping, 2015). Digital projects without support from executive management is a common reason for project failure (Andriole, 2021; Imran et al., 2021).
 - Logistics efficiency: Logistics capability is the backbone of e-commerce (Bhattacharjya et al., 2016). Delivery infrastructure problems and concern for reliability of delivery after the purchase of high value goods was identified by Bick and Leigh (2014) as an e-commerce inhibitor.
- Technology inhibiting factors:
 - Technology costs: AL-TIT (2020) identified connectivity cost and technology costs as an inhibiting factor of e-commerce. The high costs of successfully integrating business processes are an underlying reason for low e-commerce adoption, which remains below 2% of retailers in Africa (Mkansi, 2021).
 - Trust in technology: Trust and confidence in web and internet technologies, including payment security is an adoption inhibitor, if companies are not able to meet these technical requirements (Wymer and Regan, 2005).
 - Product information management: Product Information Management (PIM) is a growing and necessary discipline to assist organizations in managing and distributing their product data efficiently and effectively. Those who are unable to execute PIM effectively are at a disadvantage in adopting e-commerce (Plytix, 2020).

The above inhibiting factors may represent significant challenges to SMMRs, who are typically stretched to meet current operational challenges without introducing an e-commerce route to market.

2.3 Potential enablers of developing an E-commerce route to market

To address the challenges of developing an e-commerce route to market, the following non-technological and technological enablers are proposed:

- Non-technological enablers:
 - E-commerce strategy: Ndayizigamiye et al (2019) concluded that having an e-commerce strategy is a significant enabler to e-commerce adoption by South African SMMEs. Conversely, the lack of an E-commerce strategy is identified as a barrier to implementation by other researchers (Wymer and Regan, 2005) and (Karimi and Zhiping, 2015).
 - Compatibility: Any contemplated IT project must be aligned to the needs, goals, and cultural values of the organization. Compatible projects are well accepted by all concerned and the chances of success are increased (Meirmanova, 2020; Altameem and Almakki, 2017).
- Technological enablers:
 - Basic technology: Retailers must have the basics in place before embarking on any e-commerce strategy, including internet access, e-mail and a website. Computerised databases of customers, suppliers and an inventory of products and services were also defined as essential precursors (Ndayizigamiye et al., 2019).
 - Enterprise integration: The establishment of organisational processes by linking software, hardware, data, and other resources, using technology (Hughes, 2021). Enterprise integration in e-commerce facilitates the management of huge volumes of data from different applications and systems, which would be almost impossible to manage, let alone analyse, manually (Altameem and Almakki, 2017).
 - Security: For an e-commerce market channel to survive, all transactions must be private and secure (Alqahtani et al., 2012). IT Security refers to all mechanisms used to defend digital assets from disruption, theft and exploitation by unauthorized individuals commonly known as threat actors. Threats can be malicious or accidental from external or internal parties (Bacon, 2021).

- Innovation adoption and IT agility: According to Odhiambo (2013), the adoption of e-commerce is majorly influenced by customer pressure and their perception of innovation. Companies therefore have the additional pressure of sifting through technology that is inward facing and those that are customer facing. At the same time companies need to be able to decipher fads from value adding innovation (Bones et al., 2018).
- Service providers and associated software: Besides the one-stop shop service provide described by Luo (2018), SAAS (Software as a Service) is a growing trend where companies provide enabling technology and support it for a service fee that is either payable monthly or based on customer usage and transactions (Supriyono, 2019). Other enabling companies sell the rights to their enabling software that is easy to implement and operate (Howe-Patterson and Schuiling, 2020).

There are a number of internal and external enablers of developing an e-commerce route to market which SMMRs could follow, particularly to turn the challenges into opportunities.

3. Research Methodology

With reference to the relatively sparse prior research in the field of SMMR e-commerce initiatives and challenges, this study employed an exploratory, qualitative approach, with both deductive and inductive analysis in a cross-sectional design. The available literature informed the construction of the interview guide which also included open-ended questions, and the transcripts were analysed both deductively and inductively, seeking pre-identified and new concepts. The analytical process described by Saldana (2021) was utilised for the analysis, whereby the transcripts were coded individually, then codes were aggregated into logical clusters called categories. The categories were then consolidated into themes which constituted the findings of the study. The computer software NVivo was utilised to follow the process just described.

The population for this study included all those that belong to the retail community, particularly store owners of SMMRs; the non-probability sample was initially selected purposively from the researcher's network and by snowballing thereafter. The sample size was 17 respondents, who were retailers that represented various industries including Clothing and Apparel, Health and Beauty, Food and Beverage, Industrial and General Hardware, Pet Care, and General Merchandise.

Guba and Lincoln (1994) proposed trustworthiness as a primary criterion for evaluating the rigour of a qualitative study. Trustworthiness consists of four aspects as follows: transferability is equivalent to external validity, credibility to internal validity, dependability to reliability and confirmability to objectivity. Transferability was addressed through detailed transcript analysis to provide rich descriptive narratives; credibility was applied through peer debriefing among the authors and through member-checking with the participants; dependability and confirmability took into account the systematic design and operationalisation of the study and the collecting of auditable recordings and transcripts, The interpretation of the feedback from participants was discussed with respondents at the end of each interview to check for accurate translation of feedback and minimise researcher bias (Bell, Bryman and Harley, 2019).

The limitations of the research include the small, non-random and non-representative sample size, implying that the results cannot be generalised to the population. However, a quantitative assessment of the various barriers to enumerate their relative importance can be conducted at a later stage.

4. Results and Discussion

The seventeen participants were retailers representing various industries, mainly micro enterprises with a turnover less than R10m, and eleven already had a general website that informed customers about their business, with ten already having developed some sort of e-commerce presence. All respondents believed that they needed to retail their products online in addition to their current physical stores.

The analytical process begins with codes from interview transcripts which are grouped into categories, then themes. For reasons of brevity, the results are presented with the themes as the main subheadings, and each theme is backed up with direct quotes from the transcripts and the categories are not specifically named.

The results are presented in response to the three Research Objectives:

4.1 Perceived benefits of E-commerce

The benefits of e-commerce as perceived by the participants related mainly to Marketing, Sales, Business Continuity and Omnichannel Benefits:

Marketing:

“Online is where anyone can see my products, even in America!” was the first reaction one participant had when asked about the benefits of e-commerce. Another said, *“Marketing – e-commerce makes us look more professional.”*

Most participants felt that the marketing benefits were significant when adopting e-commerce. They believed that being online was a necessity to stay abreast with current business practices, market demands and competitors’ actions. As one participant enthusiastically put it, *“Today e-commerce is almost like compulsory.”* Participants felt that E-commerce enabled them to improve their brand exposure and facilitated appearances on search engines. *“People get to know who we are and how special our products are.”* The marketing benefits correlate directly with Membrillo (2021) and Ishtiaq’s (2020) findings.

Sales

Whilst increased sales were listed as a key benefit, unexpectedly, an increase in sales was not cited as the primary reason for most of the respondents to adopt e-commerce. Many commented that it was more important to ensure that they were seen, by customers, to be keeping up with the trend and that they could compete for sales in the e-commerce channel. *“E-commerce allowed us to create stickiness with our customers by interacting with them online, and that improved sales.”* commented one participant. Expansion of sales territory locally and, for some, internationally was an important factor raised by many participants.

Business continuity

“COVID has shown everybody that you don’t need to meet anyone in person – that is the oldest way to do business.” Traditional retailers saw rapid stagnation of sales during the COVID-19 pandemic (Daniel, 2021). Many respondents cited e-commerce as a major factor when it came to its business continuity benefits. *“We had no choice!”*. Those that had already implemented some form of e-commerce were grateful that they had, whilst those that had not, felt that it would have made the peak lockdown levels easier to deal with.

Omnichannel benefits

Participants saw the additional exposure via e-commerce as means to attract new customers to their walk-in stores whilst at the same time, adding the element of convenience to their established customer base. Several participants also suggested that the ability to list thousands of unique items on an e-commerce platform improved their ability to market, and sell, a full range of products to customers. One participant translated the impact into terms of margins by noting that, *“Faster selling lines typically attract lower gross margins whilst the more specialised items typically carry healthier gross margins.”*

4.2 Inhibitors of E-commerce adoption

Lack of strategic intent

While the benefits of e-commerce were recognised by participants, most participants did not see it as part of their primary strategy. Customer convenience, keeping up with modern trends and COVID-19 seemed to be the main reasons for businesses investing in e-commerce. One owner was adamant, *“Our customers like to browse. We are very much a face-to-face business with long standing*

customers. *We went online only to support our customers when they couldn't come in. They are back now.*"

Many felt that they had survived thus far on what they have been doing and had the pandemic not happened, they would have continued along their path. They felt that optimising existing channels and the exploration of other channels, like increasing bulk through subsidiaries, were more important. *"I would rather sell 50 units once, than 1 unit 50 times. That's why I focus on growing my B2B channel instead."* explained one interviewee. Innovativeness is described as a company's willingness to adopt new technology (Wymer and Regan, 2005). In the opinion of most participants, the adoption or acceleration of adoption was a forced necessity. Dlodla (2020) agrees and reported that necessity triggered by COVID-19 may have overridden the influence of Innovativeness.

Lack of knowledge

Unanimously, all participants noted that a lack of knowledge and in-depth understanding of e-commerce was a significant inhibitor to not only getting started but also to operating in the e-commerce environment. Where and how to start was the biggest concern for those that had not yet adopted e-commerce and for those that had previously attempted it, a lack of sufficient knowledge and the wrong partners quickly resulted in failed attempts. The retailers that had already established an e-commerce platform before the interview also reflected on a lack of knowledge being a hinderance when they began. Some of the many responses from participants were, *"I need someone who can make it simple for me."*, *"I don't know where to start."*, *"The only thing I do online is study stitching techniques."*

A lack of in-house expertise further exacerbated the situation since internal resources were, due to a lack of knowledge, not able to monitor and manage the quality of the output from external providers. Participants also felt that in many cases, external service providers did not understand the intricacies of their businesses well enough. This lack of business knowledge and context hindered the quality of the e-commerce output. Explaining his conundrum, one participant said *"Older staff understand our business – younger staff understand IT."*

Financial resources

Funding, especially for the smaller businesses in the sample set was cited as a major barrier for adoption. *"Our business case failed because of all the hidden costs."* Most participants commented that e-commerce was more complex than they initially anticipated. Options to implement e-commerce vary from custom-built sites to Software as a Service options like Shopify. There are many activities that go together with an online store, such as social media marketing and there are also hidden costs such as product and site maintenance. The lack of knowledge around these aspects has led to many of the participants spending more money on e-commerce implementation efforts than they had originally envisaged.

When compared with physical stores and infrastructure costs to achieve increased sales, Joseph (2019) found e-commerce to be cheaper. However, the costs incurred by participants seemed to be driven by experimentation and bad experiences, due to a lack of knowledge and being unable to find the right partners.

Pricing and margin structures

"I lose money every time I sell on Takealot. They have a fee for everything!" Several of the smaller businesses in the sample set were not originally set up with the prospect of e-commerce or complex distribution channels in mind. Their pricing and margin structures became a major inhibiting factor as their businesses needed to consider e-commerce. The targeted margins and associated pricing did not consider the costs associated with e-commerce platform creation, maintenance, and management. These structures did not cater for the additional marketing, transport, and packaging requirements either.

Internal human resources

“...but also, we don't have the drive or the manpower to start. All our money is invested in stock and store costs so we can't afford more staff.” Notwithstanding the initial effort of implementation, participants cited the onerous tasks of ongoing maintenance and the need for resources to manage such tasks as a major inhibitor. Some examples of the tasks referred to, are the creation and management of product images in the correct format and size, the maintenance of pricing files and availability of stock. Some went as far as saying that they believed that the entire e-commerce operation would need to be separated from their physical store. This was mainly driven by perceived challenges of integrating current systems with the e-commerce systems.

Product and service type complexities

Most of the participants raised their product or service type complexities as major challenges. Service type complexities were related to value added services that go along with the purchase of a commodity. Examples of these were alterations to clothing, adjustments on custom made shoes and bags, calibration of devices, and fitting and assembly of equipment. These value-added services are generally conducted in person and not conducive to the online environment. Most retailers in this situation felt that they would need to remove these commodities and associated services from their online offering.

Simply put by one participant, “*Of course I can sell a suit online, but the customer has to come into the store for a fitting and alteration – what's the point?*”

The product type complexities mainly affected the legislative and logistics aspects related to the e-commerce value chain. Examples of the logistics challenges included the high rate of return on footwear and clothing, the transport of perishables and fresh produce, maintenance of the cold chain, transportation of cheap but heavy products like water and the transport of large spare parts that are bulky, heavy and of various shapes. Whilst these challenges exist outside of the e-commerce value chain, it was the challenges in the context of the last mile delivery to customer that was of primary concern. Bhattacharjya et al (2016) found that retailers who did not have sufficient logistics capability may be inhibited in adopting e-commerce. However, no literature was found to completely exclude the possibility of e-commerce adoption because of poor logistics capability.

Options as an inhibitor

A few of the comments from participants when discussing e-commerce and ancillary options were captured in Figure 1.



Figure 1. Options as an Inhibitor Word Cart – Comments from Participants.

Based on the comments in Figure 1, it is apparent that navigating through the various options for e-commerce adoption was a daunting task for many participants. The main concern with options is that there were too many to choose from multiplied by the number of commercial structures. Participants found this overwhelming especially at the beginning of their enquiries and, because most were new to e-commerce.

Many participants felt that at the beginning, the benefits of social media and e-commerce were difficult to measure in terms of their return on investment. This made it difficult to allocate more funds to a project that did not yield good returns early. One participant said, “*it’s a lot less tangible than placing a product on the shelf, watching people interact with the product, and then buying it. All the store costs are known and easier to understand*”. Hidden costs were a major concern for those that used hosted sites, online marketing, and Software as a Service (SaaS) options. In some cases, a lack of understanding of the costs lead to major errors in their business cases. One participant quipped, “*we learnt very quickly that footsteps were free, but clicks were not*”.

4.3 Enablers of E-commerce adoption

Momentum through forced adoption

Participants unanimously agreed that the COVID-19 pandemic had a major influence on their e-commerce channels. The pandemic and associated restrictions forced companies to quickly adopt e-commerce if they did not have an established channel. In instances where they did have an existing channel, they were forced to enhance what they had. Many of the respondents said that they did not have time to carefully consider all options or costs. One participant said, “*We chose the first option that sounded reasonable because every day spent on decision making was another day without sales*”.

Social media

“*We do a lot of social media. Posting, posting, posting, everyday...*” was by far the most succinct articulation of the role of social media as an enabler. Social media has been a useful enabler for the

smaller businesses in the sample set. While not a full value chain e-commerce offering, it was seen by participants as a very important first step and precursor to a full-service e-commerce offering.

This basic value chain involved listing and marketing, albeit with no targeting, on social media. Once a customer was interested, the closing of the sale moved to mobile phone or email and payment was then concluded. Payment was often done via eft or cash on delivery. *“Selling on social media”* was a commonly used misnomer amongst the micro-retailers in the study. Interestingly, one participant had deliberately stayed off Facebook because they did not want to expose their different pricing strategies in different regions. *“My Durban customers are used to paying my price, but I have to make it cheaper for the Joburg customers to try it out.”*

Payment options on Social Media

Another potential enabler raised by the micro business was the creation of payment options on social media. At this stage payment is still handled offline and, whilst there are a few missing pieces, payment is the biggest missing piece of a full value chain e-commerce offering on social media. Many of the micro-retailer participants deal with people in poorer communities who do not use traditional banking methods for payment. Cash and lay buying are still very popular amongst this customer group and the participants felt that a solution to social media payment would enable better e-commerce adoption and market penetration.

5. Conclusions

Despite the scepticism of the South African businesses interviewed, all indications are that e-commerce will continue to grow steadily (Goldstuck, 2021). South Africa has a low adoption base at 2.8% (Daniel, 2021) and this is positive for early adopters. The conclusions to the research objectives are summarised below, against the prior research of each:

Since the contribution of the study can be suggested by comparing the literature review contents with the study findings to establish the extent and nature of gaps and overlaps, the tables in the following section indicate a brief statement of the literature review contents in the left-hand column and a brief synopsis of the study findings in the right along with a comment regarding the nature of the differences between the two.

5.1 Objective 1: Perceptions of benefits of E-commerce

The conclusions for the findings of this objective versus the Literature review are summarised in Table 1 below:

Table 1. Summary of Perceived Benefits of E-commerce versus Literature

Extent of Alignment	Notes and Possible Explanations
Good Alignment	
Marketing, sales, business continuity, omni channels.	Literature was more comprehensive and detailed than interview feedback.
Partial Alignment	
Market demands, customer service, customer experience, benefits of a scalable business.	Participant views were less in-depth and focussed on less complex aspects of these topics, indicating signs of a less mature e-commerce market. Micro retailers were less concerned with customer experience and more concerned with just getting online to begin with.
Opposing Views	
Cost of e-commerce.	The literature view that e-commerce was cost effective was not shared by interviewees. Participants viewed e-commerce as an add-on cost instead of an indirect cost saver. Retailers felt that e-commerce had become cheaper over the years but was still not easily affordable. This was probably also linked to the pricing and margin structure challenges raised by participants when discussing inhibitors.

The main difference in perceptions of the benefits is whether e-commerce is cost effective. The investment in traditional retail infrastructure is viewed as a sunk cost, whereas investment in e-commerce is perceived to be a major additional investment difficult to measure in terms of return.

5.2 Objective 2: Inhibitors of E-commerce development

The conclusions for the findings of this objective versus the Literature review are summarised in Table 2 below:

Table 2. Summary of Perceived Inhibitors of E-commerce Development versus Literature

Extent of Alignment	Notes and Possible Explanations
Good Alignment	
Strategic intent, management support, knowledge, trust, financial and human resources, legislation and regulation, competitive pressure, and information management, logistics.	Literature was more comprehensive and detailed than interview feedback.
Present in Data but not in Literature	
Product and service type complexities. Service type complexities were value added services like alterations to clothing, adjustments on custom made shoes and bags, calibration of devices, and fitting and assembly of equipment.	A major inhibitor according to participants. These value-added services are generally conducted in person and not conducive to the online environment. Participants felt that they needed to remove these commodities and associated services from their online offering. Most literature seemed to focus on commodities that were easier to retail online.
Pricing and margin structure challenges	The stagnating effect on small businesses trying to adopt e-commerce was significant. Most literature reviewed for this study focussed on SMMEs in general but none on micro enterprises only. Micro businesses in the sample set did not start up with e-commerce in mind and hence pricing structures and margins did not cater for e-commerce adoption.

While there was fair consistency in the results with prior studies, the main additional inhibitors involved providing services online, and in the pricing challenges online versus traditional retailing.

5.3 Objective 3: Enablers of E-commerce development

The conclusions for the findings of this objective versus the Literature review are summarised in Table 3 below:

Table 3. Summary of Perceived Enablers of E-commerce Development versus Literature

Extent of Alignment	Notes and Possible Explanations – Summarised
Good Alignment	
Momentum Through Forced Adoption (COVID-19)	Whilst the Pandemic had a devastating effect on most economies, the literature and data were very aligned on the role it played in fast tracking e-commerce adoption.
Availability of e-commerce technical options and service providers	Participants viewed this as an enabler and inhibitor. Most thoughts on its inhibiting nature emanated from a lack of knowledge and expertise. <i>“It’s the fear of the unknown that makes it overwhelming”</i> said one participant.
Present in Literature but not in Data Gathered	
Security, enterprise integration and enablement innovation.	These are more technically advanced enablers. E-commerce immaturity played a role in participants not knowing about or using such technology yet.
Present in Data but not in Literature	
Social media and associated payment options.	The positive impact of social media and the potential of associated payment options on small businesses was widely raised by participants, Social media was not well researched during the literature review as it was not seen as a core function of online retailing, however its impact as a gateway to a full e-commerce service offering was underestimated in this study.

While the Covid-19 pandemic was certainly an instigator towards developing e-commerce for SMMRs, the initiative is still seen as overwhelming, requiring some assistance from experts. Social media was highlighted as an enabler to assist the transition.

6. Managerial Implications

SMMRs need to move beyond the thinking that e-commerce was something they were forced to do because of COVID-19 and rather place e-commerce high up on the company strategy agenda.

If SMMRs want to elevate their e-commerce route to market offering, the following steps are recommended, based on the findings of this study, as illustrated in Figure 2:

Recommendations to Elevate E-commerce Route to Market Offering

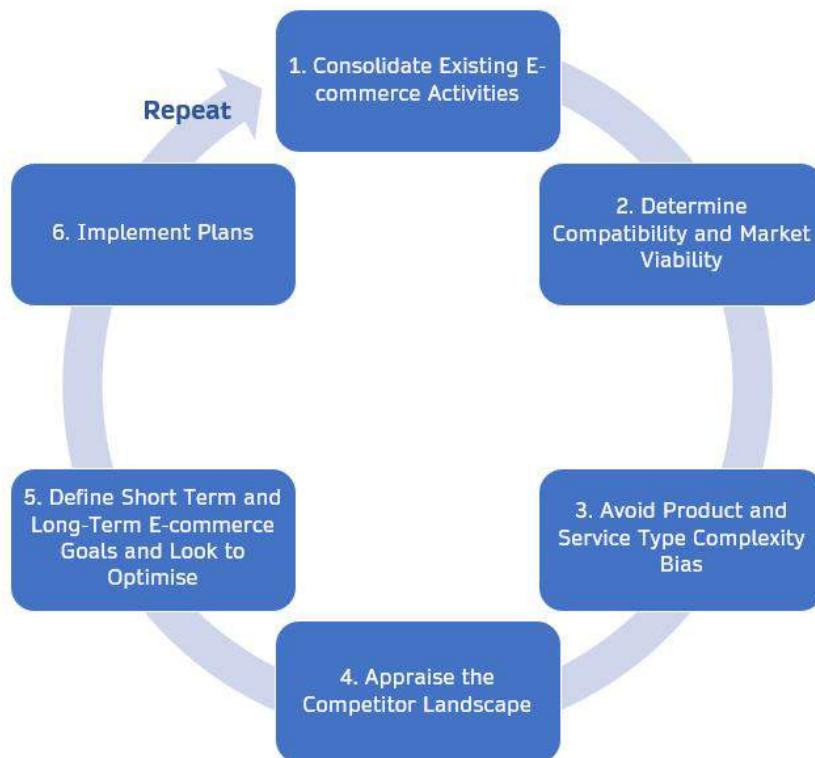


Figure 2: Framework to Elevate E-commerce Route to Market Offering

1. Consolidate Existing E-commerce Activities

A good first step would be to review what is already in place. The company should understand what they have, what is working, what is not, what is incomplete and what is it costing. A full assessment of the total as-is situation should be conducted, including that of service providers, commercial models and e-commerce platforms and tools. Current benefits, enablers and inhibitors should also be considered.

2. Determine Compatibility and Market Viability

Before any further steps are taken, compatibility and market viability should be determined. Compatibility is considered a criterion for assessing the completeness of e-commerce initiatives and it is an important enabler for e-commerce implementation success (Altameem and Almakki, 2017). The company should review the needs, goals, and cultural values of the organization and ascertain if they align to an e-commerce strategy.

Market viability is a measure of the potential of a business to thrive in a specific market (Estay, 2021). The company should assess the market that it plans to serve and ascertain if there is a need for e-commerce. If a need is identified, the specific needs and challenges of that market should be considered.

3. Avoid Product and Service Type Complexity Bias

The specific product and service type complexities of a business must be seriously considered. However, participants of this study seemed too dismissive of the possibility of e-commerce being useful in their environments and did not consider the potential benefits carefully enough. Quotes such as “*our business is unique*”, “*we are not an online business*”, “*we are too specialised*” were too commonplace during the interviews.

4. Appraise the Competitor Landscape

Understanding what direct and indirect competition exists and assessing their actions, strengths and weaknesses is a critical input to developing a strong e-commerce offering. Participants of this study did not understand their competitor landscape well and as a result, were not able to articulate how they might outsmart them.

5. Define Short Term and Long-Term E-commerce Goals and Look to Optimise

Once the company has a clearer understanding of their e-commerce environment, it is important to set short-term and long-term e-commerce goals, using the newly conducted analysis as a key input. A full technology assessment should then be conducted with these goals in mind. The technology assessment should include input from the previous as-is assessment and a review of new and established platforms.

The South African market has the advantage of being e-commerce followers in many regards and companies should not miss this opportunity to learn from international trends and more mature markets. The role of social media must also be seriously considered. It must be noted that not all possible solutions must be implemented, but they should be considered in the context of the set down goals.

6. Implement Plans

Once the options to optimise have been assessed, an appropriate implementation plan should be defined, including time, cost, and quality aspects. Knowledge, access to professional services providers and software options were all identified in this study as factors that significantly influenced e-commerce adoption. It is therefore recommended that companies supplement their internal knowledge by engaging with e-commerce implementation professionals to assist them with their e-commerce adoption and transformation activities. The defined plans should be implemented, and the cycle repeated after a period determined by the company.

7. Recommendations for Future Research

This research study was exploratory, which provides several opportunities and directions for research. First, researchers could do a quantitative study with a representative sample to verify the findings of this study.

Second, a study that splits micro and start-up businesses from medium-sized businesses may yield different results. The views of the smaller businesses seemed more focused on getting started and finding their feet, while the bigger businesses had already started exploring aspects of optimisation, although not to the level of more mature markets.

The development of e-commerce in lower income societies and the role of social media as a precursor to the full e-commerce value chain is an important topic of research for South Africa.

The proposed steps and model proposed in the Recommendations (Figure 2) is a high-level summary and can be enhanced by a more in-depth study and by drawing on existing literature on the individual steps.

Finally, a longitudinal study after an intervention to develop an e-commerce initiative in a SMMR could provide insights into the effectiveness of the intervention, as to whether the inhibiting issues had been addressed.

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Age as Moderator in Technological Acceptance of Airbnb Purchase Intentions

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Keywords

Airbnb; shared economy; Age as moderator; Technology acceptance; Purchase intentions

Abstract

Despite Airbnb's incredible popularity, few studies have examined user attitude towards technology acceptance and the role age plays as a moderating variable in impacting user purchase intentions in the context of Airbnb. This study was conducted by applying Technological Acceptance Model (TAM), to which the Theory of Reasoned Action (TRA) is applied. This research, with age as a moderator, in the context of Airbnb is a first of its kind. These results will assist marketers in understanding potential profits forgone in relation to certain age demographics in the shared economy and the factors at the margin that determine their participation. Data was collected from a target population of consumers across South Africa and the data was analysed using the theoretical framework. The study finds that the value of connectedness increases as consumers age and is positively significant in influencing the technological acceptance and purchase decisions of older generational groups, especially in the context of applications such as Airbnb. E-commerce technology that holds some form of social benefit for its users want to be accepted by the older generations, the value of its ability to connect with loved ones needs to be explicitly communicated.

1. Introduction

The hospitality industry has been heavily disrupted in recent years due to the establishment of the shared economy and the birth of Airbnb (Oskam and Boswijk, 2016). Airbnb is a peer-to-peer accommodation service where users can either participate as guests or hosts. Airbnb has seen a meteoric rise in user participation since its inception due to the unique experiences and added value it offers (Guttentag, 2013). A combination of convenience, competitive pricing, authentic experience, social interaction and ease of use are all factors that have influenced the consumer decision making process and resultant purchase intentions. It is important to understand the factors that influence the purchase decisions of this relatively novel concept as well as investigating moderating variables that may not have previously been considered. This could allow for optimization of user experience by Airbnb to increase user participation across user demographics that may have been previously overlooked. It has been proposed that the extent to which a user accepts technology plays a significant role in their resultant participation in Airbnb and the shared economy.

1.1 Problem Investigated

Previous studies have used the Technology Acceptance Model (TAM) theoretical framework, which illustrates the extent to which an individual accepts a certain technology. The TAM model uses two factors as key indicators of the likelihood and extent of technology acceptance (Wang and Jeong, 2018). These factors are perceived usefulness (PU) and perceived ease of use (PEOU) of the technology in question. Previous studies have found that in the sharing economy, not necessarily all e-commerce platforms, perceived usefulness is more significant as a determining factor in whether or not a user adopts the specified technology. Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his/her job performance" (What is Perceived Usefulness (PU) | IGI Global, 2021). In the context of TAM analysis in Airbnb and the

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shared economy, “job performance” would be reframed as “personal situation”, i.e., the degree to which a person believes that using Airbnb would enhance his/her personal situation. The relationship between perceived usefulness and technology acceptance has been found to be positive.

Past studies have highlighted several factors within the end-to-end user experience of Airbnb that significantly influence purchase decisions and future participation of Airbnb users. The level of trust, both towards technology and hosts, that a user has impacts their purchase decisions and potential future participation (Corbitt, Thanasankit and Yi, 2003). The authenticity of the experience offered, be it in the form of the host being “local” and contributing to the authenticity of the experience or the authenticity of the accommodation itself (Kim and Kim, 2020). The convenience and practicality of Airbnb listings allow Airbnb to appeal to a wide range of user desires, both from a location and amenities standpoint, thus adding to the perceived value of the Airbnb experience (Guttentag et al., 2017). The social aspect Airbnb offers through host-guest interaction, which overlaps with the authenticity factor, has also proven to be a significant factor in influencing user purchase intentions.

There is extensive research into the factors within the end-to-end user experience of Airbnb that impact future user participation. On the technology acceptance side, studies have delved into the impact of technology acceptance on user participation in Airbnb due to the high level of technological interaction required. These past TAM theoretical framework results have shown that perceived usefulness is more significant in the Airbnb context than perceived ease of use. The incorporation of age as a moderator variable has only been implemented into the TAM model on an e-commerce level which offers different use benefits to Airbnb. There is thus a gap in the research towards age as a moderator variable in the TAM theoretical framework and the resultant user purchase decisions (Davis, 1989). This defines the problem statement as: *“How does user age influence their level of technology acceptance, in the Airbnb context, and their resultant purchase intentions and participation?”*

2. Research Objectives

The primary objective of this study is determine whether age has a significant impact on the level of technological acceptance of a user

The secondary objectives of this study are to:

- determine whether older generations are more likely to participate in Airbnb than other e-commerce platforms
- investigate whether the interaction between age and perceived usefulness of Airbnb has a positive impact on Airbnb technology acceptance and resultant purchase decisions
- investigate the impact of the interaction between age and perceived ease of use on Airbnb technology acceptance and resultant purchase decisions

3. Hypotheses

The following hypotheses were formulated for the study:

- H₀: Age is not correlated to perceived usefulness in the context of Airbnb
- H₁: Age will be positively related to perceived usefulness in the context of Airbnb
- H₀: Age is not correlated to perceived ease of use
- H₂: Age will be negatively related to perceived ease of use
- H₀: Age is not correlated to overall user attitude towards acceptance and use of Airbnb technology
- H₃: Age will be positively related to overall user attitude towards acceptance and use of Airbnb technology
- H₀: Age is not correlated to overall user attitude towards acceptance and use of Airbnb technology
- H₄: Age will be positively related to overall user attitude towards acceptance and use of Airbnb technology

4. Literature Review

In assessing the factors that influence purchase decisions and resultant participation in Airbnb, a broad view of the factors influencing consumer participation in the shared economy will be taken below. Beginning with literature covering technological acceptance and the role it plays in the initial steps in participation in the shared economy and Airbnb. The scope of the study will then become focused on the actual variables within the Airbnb experience itself that play a significant role in influencing user purchase decisions and subsequent participation in Airbnb. The role of trust will be analysed and how it is influenced by identity verification and pricing determinants within Airbnb. Further literature will be examined discussing factors, unique to the Airbnb end-to-end experience significant in impacting consumer decision making, specifically; authenticity; practicality and convenience; host-guest interaction; user response to targeted advertising; and finally, factors influencing participation in Airbnb from the hosting perspective.

4.1 Technology Acceptance

Technology is advancing at a fast pace, for some it has always been around, but for others it only came about in the second half of their lives or even later in some cases. As a result, we see differences in the level of acceptance individuals have of technology and the resultant role it plays in their everyday lives. To enter the shared economy through Airbnb means engagement with technology, there are no two ways about it. Suffice to say, it is imperative to accept technology before any other factors can play a role determining continued engagement with and participation in Airbnb and the shared economy.

Past research has shown that in the sharing economy, there is a positive relationship between the extent to which an individual has adopted technology and their purchase decisions (Wang and Jeong, 2018; Davis, 1989). The technology Acceptance Model (TAM) is one of the most widely recognized theoretical models to evaluate the extent to which users have adopted emerging technologies and online platforms. Theory of Reasoned Action (TRA) is applied by TAM in order to establish the correlation between the two key constructs, perceived ease of use (PEOU) and perceived usefulness (PU), and the corresponding user intentions, attitudes and adoption behaviour. The powerful theoretical framework that TAM operates on allows it to perform accurately across several different settings, samples and applications, from e-commerce to internet adoption. It is thus a quality tool when it comes to exploring user adoption and resultant brand loyalty. Thus, the concept of technology acceptance includes opinions about and attitudes towards technology, as well as a behavioural component (Hauk, Hüffmeier and Krumm, 2018). In the shared economy and Airbnb space, perceived usefulness has shown greater significance than perceived ease of use on user's adoption of the technologies involved and their resultant attitude towards the brand (Wang and Jeong, 2018). It is for this reason that we will be expanding on the foundation of TAM's theoretical framework by including the age of the user as a moderator variable. We can thus compare the impact of user age on technology acceptance and the resultant likelihood of participation in the shared economy through Airbnb. Another interesting discussion, which may be beyond the scope of this research paper, is the degree to which the country of residence of the user has adopted technology i.e., third world versus first world, and the impact that has on the technological acceptance of users in different age groups. A hypothesis would be that there is a positive relationship between the technological acceptance of the country as a whole and the corresponding likelihood of a resident from said country to participate in the shared economy and Airbnb. There would be an argument for the idea that first world generations, especially Generation X and earlier, would have higher technological acceptance levels than their third world counterparts

4.1.1. Age and Technology Acceptance

Technological advances have been exponential over the last few decades. A 60-year-old living in South Africa today would have been alive for 33 years before having ever been exposed to a cell phone, as they were only released in South Africa in 1994 (Linda, 2021). But how have such technological advances affected the psyche of different generations and how does the level of acceptance of said technology vary, depending on the generation that users fall into? TAM, the theoretical framework as mentioned previously, has already been applied in several different studies,

which looked for correlations between age and technology acceptance. The results have been mixed, some research finding a negative correlation, some no correlation and others finding a positive correlation, between a user's age and the degree to which they accept technology (Hauk, Hüffmeier and Krumm, 2018). It has been established that the response of users to the two key factors of TAM, perceived ease of use (PEOU) and Perceived usefulness (PU), is affected by age (Hauk, Hüffmeier and Krumm, 2018). The results from these TAM studies have shown some results that may be pertinent to the research question this study is to answer.

4.1.2. Perceived Usefulness and Age

Socioemotional Selectivity Theory (SST) states that the older people get, the more the gravity of the finitude of life weighs upon them, and thus affects their behaviour and the priority they give to certain activities (Carstensen, Isaacowitz and Charles, 1999). The Perceived Usefulness of a technology primarily depends on whether or not the user feels they need the technology as part of their lives (Hauk, Hüffmeier and Krumm, 2018). As SST has established, the older an individual gets, the more selective they are with their time and which activities they include. We can thus begin to see the inverse relationship between the age of an individual and the likelihood of technology adoption. Younger adults prioritise growth-related activities, such as acquiring knowledge and the betterment of their personal careers and life goals. As people age, their values shift away from growth and acquiring knowledge towards meaning and social needs (such as close social relationships, family, and emotionally satisfying activities) (Hauk, Hüffmeier and Krumm, 2018). We can now see the conundrum that the older generation faces when weighing up participation in Airbnb. The Airbnb app's technological features such as functionality, communication and payment methods, review systems and profile management all require the individual to put in time in order to understand. The older the individual, the longer it takes to learn foreign concepts such as this due to fluid cognitive decline, exacerbating the time shortage situation they face when deciding on whether or not to engage with the technology (Manard, Carabin, Jaspar and Collette, 2014). On the other hand, however, the use of Airbnb would enhance their ability to supplement their shift in desires towards meaning and interpersonal social connection and fulfilment with loved ones. Being able to search for accommodation at the touch of a button and be situated a stone's throw away from the people who mean the most to them would carry considerable weight too when establishing the perceived usefulness of Airbnb. We can therefore see that the opportunities of Airbnb may outweigh the costs of time spent learning to use and accept the technology. Not many studies have investigated the influence of age on PU in the Airbnb context, where human connection with loved ones is a by-product of using the technology.

4.1.3. Perceived Ease of Use and Age

As touched on previously, the use of the Airbnb technologies requires some degree of learning and understanding which requires the engagement of the individual's fluid cognitive abilities (Rogers, Hertzog and Fisk, 2000). This becomes increasingly more challenging as individuals age, fluid cognitive abilities such as memory capacity, effective working memory and the ability to do multiple, simultaneous tasks declines (Salthouse, 1990). The actual physical side of engaging with the application also becomes more challenging with age. Visual acuity declines and hearing threshold and acuity also begins to decline. These physical impairments make the navigation of the technology a challenge, as app/site buttons may be small and difficult to identify or hit and the identification of important aural queues or notifications may go unnoticed (Pichora-Fuller and Souza, 2003) (Owsley, 2011). This can be exacerbated further by decline in tactile acuity that is associated with the ageing process (Tremblay, Wong, Sanderson and Coté, 2003). As a result of these hurdles, both physical and cognitive, older generations develop a lack of efficacy toward shared economy platforms that inevitably pushes them away from the services (Del Chiappa, Pung, Atzeni and Sini, 2021).

4.2 Trust

Since the establishment of the worldwide web and the birth of e-commerce, there has been evidence of a positive relationship between the amount of trust consumers have towards e-commerce and the resultant decision to participate in an e-commerce transaction. Trust levels towards a particular e-commerce good /service provider are affected by things such as site quality, trust in technology and

the user's overall web experience (Corbitt, Thanasankit and Yi, 2003). These behaviours are mirrored to some degree, in the shared economy. There are, however, differences between e-commerce and sharing economy consumption, such as Airbnb. Because Airbnb is a polyamorous relationship between the user and the different factors of the Airbnb service, trust can be affected by the different stages of the transaction. The actual website or application used to search for the accommodation, the host of the accommodation or the accommodation itself. The user's engagement with these aspects of the overall user experience plays a role in establishing trust between the user and Airbnb or the shared economy as a wholistic marketplace. This resultant establishment of trust, or lack thereof, has been shown to play a role in the likelihood of future use/participation in Airbnb and the shared economy. A trustworthy environment established by Airbnb, through features such as a transparent pricing scheme, developing a secure and robust end to end transaction process and ensuring consistency and reliability in performance, have all shown to positively affect user participation. These traits can indeed help the case of Airbnb and the shared economy in general when it comes to establishing a trustworthy environment for consumers and ultimately maximising the probability for user returns (Wang and Jeong, 2018). Consumer behaviour is complex and there is not, however, a one size fits all feature addition that will increase user trust. The individualism of people and their relevant psychographic features affect the level of trust they have towards the shared economic system, even before they have begun searching for accommodation. Affective Events Theory (AET) says that users are motivated to carry out certain behaviours based on the amount of trust they have in individual hosts within the sharing economy. The encouragement of meaningful interactions between the hosts and the guests is part of the ethos of Airbnb and is based on the idea that doing so will build trust. Trust is imperative in order to build sustainable business relationships, especially in the online sphere (Kim and Kim, 2020). The two-way review system between hosts and guests, which Airbnb employs, plays a large role in developing trust in the app with future users. The evidence of past engagements and their corresponding reviews allow new users to make informed decisions based on the publicly available reviews on the host. Because these reviews are made by people very similar to themselves, it further develops user trust in the app and the decision-making process. This illustrates, once again, why trust is such a large determinant of a user's decision to take part in a transaction within Airbnb (Kim and Kim, 2020).

4.2.1 Identity verification

It is human nature to be somewhat superficial when it comes to making a judgement on someone purely based on their looks due to associated stereotypes and media. It is essential, especially during the evolution of mankind, to be able to discern between friend and foe so that relationships consisting of the sharing of resources can be possible (Darwin, 1873). This is the case in relation to Airbnb as it is a peer-to-peer platform where there is direct communication and transactions with hosts. In this marketplace, provided by a third party, intangible experienced goods are offered which are generally created and consumed simultaneously. Therefore, the calibre of the experience of a listing cannot be backed up until after the consumer has used the service. Thus, Airbnb has much more personal information required on the platform that can be viewed freely by consumers compared to the likes of conventional peer-to-peer marketplaces like Amazon. Therefore, profiles of hosts require personal images that act as identity verification and thus initiates a personal relationship between the host and consumer (Fagerström et al., 2017). Through rigorous research in the impacts of facial expressions in evolutionary times, within the interactive context, it can be seen that there is a strong awaking reaction to menacing impetuous like scary facial expressions which activate the fight or flight system within the brain that is crucial for survival (Tipples, 2008). This similar feeling can also be experienced even when looking at someone's picture online. Therefore, this will negatively affect a buyer's decision to interact with such a host. This also may prevent them from interacting entirely within that specific marketplace and thus their purchasing decision to rent will likely no longer exist. A profile that consists of positive connotations, however, such as showing happy expressions through a smile will likely have a positive perceived reflection of the host on the consumer, making them more likely to want to cooperate and purchase a listing. Proven by research, in a game of trust, players trusted partners who displayed a smile more than those who did not smile (Scharlemann et al., 2001). This is due to human nature whereby people are more trusting of familiar individuals and this familiarity is perceived through positive facial expression.

4.2.2 Pricing determinants

Similarly stated before, Airbnb heavily relies on their trustworthy environment to create a consumer-brand relationship whereby the price is not constrained by determinants such as star rating, demand and special events or holidays. Based on a sample of Airbnb listings in Stockholm, Sweden, research found that the perceived trustworthiness of the host, as inferred from the host's photo, is a better indicator of price and demand than review scores. Whereas, comparing this to what has been found in hotel performance data, it is proven from the online reviews that a 1% increase in the review ratings effectuated a 1.42% increase in proceeds for each room available (Gibbs et al., 2017). Furthermore, it has been found, from the host's perspective, that typically they undervalue their rooms to receive more customer requests so that they can pick and choose who they want to stay. This proves that, in contrast to set margins like in the hotel industry, hosts are driven by emotional decisions rather than monetary values. It can also be said that generally there are two main types of hosts who go about setting their prices differently. The first type is the professional host who focuses on financial performance from having numerous listings of two or more properties and the second type of host are those who only partake in one single listing. The professional type achieves 16.9% greater daily revenue on listings and 15.5% occupancy rates over the non-professional hosts (Gibbs et al., 2017). However, the differing performance levels from the separate types of hosts does not explain the factors that affect the pricing of listings. On the other hand, in the exploration of individual price differences, it has been found that racial discrimination is prevalent on Airbnb and affects pricing of individuals (Teubner, Hawlitschek & Dann, 2017). Researchers have found that Afro-American hosts have had to impose lower charges in comparison to white hosts by more than 12% (Teubner, Hawlitschek & Dann, 2017). It can also be seen in the consumers' point of view that booking requests made by those with typical white names are 16% more likely to be credited a listing compared to someone with a typical Afro-American name in the situation where a profile picture is not present (Edelman et al., 2017). Furthermore, through other related studies on the existence of racial discrimination on Airbnb, it has been found Asian and Hispanic hosts also impose lower charges compared to white hosts on the platform (Kakar et al., 2016).

4.2.3 Airbnb User Experience

The end-to-end user experience of Airbnb consists of a number of unique significant factors that influence consumer purchase decisions (Guttentag, Smith, Potwarka and Havitz, 2017). This combination of factors has allowed Airbnb to separate itself from competitors in the hospitality market. Some of these factors discussed are entirely unique to Airbnb and some have been adapted from their original forms present in traditional hospitality services. As a result, these factors and their resultant influence on future user participation and purchase decisions shall now be further explored.

4.2.3.1 Authenticity of the Experience

“Authenticity is a multifaceted construct that contains various ontological assumptions, perspectives, and typologies” (Wang and Mattila 2015, p. 348). In a world where technology can often make tasks or operations seem sterile and regimented, Airbnb has broken out to create an experience, driven by e-commerce functionality, based around authenticity and unique experiences combined with genuine, person to person transactions. Research has shown that a high proportion of users use Airbnb in search of such authentic experiences (Kim and Kim, 2020). Authenticity covers a range of consumer demographic desires. An authentic home environment, carefully arranged by a caring host, for the wary business traveller, looking for a “home away from home” to rest their head (Guttentag, Smith, Potwarka and Havitz, 2017). A couple, travelling the world, looking for an authentic experience and to “live like the locals” (Wang and Jeong, 2018). The peer-to-peer framework that Airbnb provides allows these authentic experiences to be had. As a result, Airbnb has been able to separate itself from traditional lodging and accommodation services through the authenticity and uniqueness it provides, both through interactions with the hosts and the resultant accommodation they provide. The level of perceived authenticity of the experience has been shown to have a positive influence on the repurchase decisions of the user (Kim and Kim, 2020).

4.3 Host-Guest Interaction

Airbnb, as previously discussed combines e-commerce operations and person-to-person transactions. This human interaction, between guest and host, plays a very important role in determining the value the user associates with Airbnb as a platform. Past studies have shown that the interaction between guest participation and host facilitation affects the perceived value of the transaction in the eyes of the guest and thus impacts their future purchase decisions (Jiang, Balaji and Jha, 2019). Value facilitation is the process whereby the host creates value for the client through providing information, assistance and recommendations (Grönroos and Gummerus, 2014). This value facilitation definition, however, focuses primarily on the “concierge” role of the host. This value facilitation also taps into the earlier mentioned factor that is authentic experience. The fact that a host may be an authentic local adds further to the perceived value of the experience for the guest and positively influences their future purchase intentions (Mody and Hanks, 2019). In some extreme situations, there is also evidence to suggest that some people use Airbnb as a source of company in order to aid loneliness. In recent public debate and media, it has been argued that there is a “loneliness epidemic” in Western Societies (Suanet and van Tilburg, 2019). Recent studies have shown that Airbnb is used as a source of remedy for loneliness, from both the point of view of the host and the guest/user. An argument has been created of loneliness as a driver of peer-to-peer transactions that could even be harnessed by Airbnb in order to optimise the pairing process of guests and hosts experiencing similar emotions and personal hardships (Suanet and van Tilburg, 2019). This will thus allow for more genuine connections between hosts and guests and thus establish increased perceived value and long-term brand loyalty, from both parties, towards participating in Airbnb. This further emphasizes the importance of host-guest interaction as a determinant of participation in Airbnb.

4.4 Practicality and convenience

The Airbnb peer-to-peer framework has proved attractive to many modern-day travellers given its rapid growth since its formation in 2008. A large majority of the attraction stems from the practicality that Airbnb offers to travellers (Guttentag, Smith, Potwarka and Havitz, 2017). A study carried out in 2015 revealed that consumers were drawn to multiple key characteristics Airbnb had to offer that conventional accommodation couldn't, these being: social interaction, the novelty of the idea, home comfort, authentic local experience, the ethos of the shared economy domain and relatively low costs (Guttentag, Smith, Potwarka and Havitz, 2017). Of the key characteristics mentioned, low-cost accommodation and home benefits were the most strongly agreed on practical elements of Airbnb that benefited travellers in some form (Guttentag, Smith, Potwarka and Havitz, 2017). These benefits ranged from having more money available to spend on local activities and experiences to having access to household amenities and conveniences offered within the local suburbs. (Guttentag, Smith, Potwarka and Havitz, 2017). The factor of convenience and proximity of accommodation to areas of interest would play a role in the perceived use of Airbnb for older generations. It would remove the need for extensive commuting from the city centre and/or more urban areas where traditional hotels and accommodations are generally more densely situated. This would lessen both the cost of the trip (no rental car or taxi) as well as the stress associated with it, both of which the older generation would want to minimize. In contrast, a study was carried out to evaluate the geographical clustering of Airbnb's when compared to location convenience. The study focused primarily on cities (New York, LA and Chicago) where the most desirable places to visit were in fact in the city centre. In a comparative analysis across the three cities being investigated, it was found that there was a positive relationship between the proportion of youth population and employment and the resultant number of Airbnb's supplied in the area. This further illustrates that the level of Airbnb adoption and implementation has a significant interaction with age. (Zhang and Chen, 2019).

4.5 Targeted Advertising

Airbnb is unashamedly different from ordinary hotel chains which include the likes of Tsogo Sun, The Marriott Hotels Group and Hilton Worldwide, yet is arguably one of the largest hotel chains in the world despite not owning a single hotel (Liu and Mattila, 2017). Given the peer-to-peer framework and contemporary internet-based business model, focus on the role of digital advertising in creating an attraction to the brands distinguishing features is important to the success of Airbnb (Guttentag, 2013). Research by Liu and Mattila found that the two main distinguishing factors of

Airbnb, that create an appeal to the consumer, were the ideas of “feeling at home” and having an “atypical place to stay” (Liu and Mattila, 2017). The aim of the research was to understand whether these two appeals were equally effective in attracting consumers when used in conjunction with click-through intention advertising, with consumer power being the moderating variable (Liu and Mattila, 2017). Looking at the two appeal factors in relation to power, results showed that powerless individuals had a higher click-through intention rate when there was a feeling of belongingness, otherwise referred to as the appeal to feeling at home, advertised (Liu and Mattila, 2017). These results are supported by Botsman and Rogers who discuss a shift in society over recent years (Botsman and Rogers, 2014:41). The discussion revolves around the idea that current generations have moved to seeking cliques, both on and offline, with which they can participate in peer-to-peer shared economy activities (Botsman and Rogers, 2014:41). On the other hand, powerful individuals had a higher click-through intention rating when there was a sense of uniqueness to the experience, otherwise referred to as the appeal to an “atypical place to stay” (Liu and Mattila, 2017). This correlation between uniqueness and power is evident in a 2017 hedonic pricing model study of Airbnb (Gibbs et al., 2017). The study found that amenities that offered and uncommon accommodation characteristics were directly proportional to an increase in price per night (Gibbs et al., 2017). As a result, the more unique a room, the more appealing it is to powerful individuals who have the means to purchase the service (Gibbs et al., 2017). It is important to note that power in this sense is associated with the attributes of each individual in terms of social status, income, age and health (Liu and Mattila, 2017).

4.6 Participation factors in the hosting context

The competitive advantage of Airbnb is the ease of access for consumers and the ease of employment for potential hosts wanting to share their home with travellers. Airbnb hosts do not require any hospitality or tourism management training due to the minimalistic, somewhat informal ideology behind the experience regarding the peer-to-peer framework (Fischer, Pahus and Bager, 2019). Despite any hosts’ inability to compete with the experience and quality of large multinational hotel corporations, Airbnb continues to flourish in the accommodation industry, largely due to an amalgamation of basic cultural institutions and exponential growth in the technological industry (Fischer, Pahus and Bager, 2019). But what causes individuals to become hosts? To participate in Airbnb as a host, an element of trust is needed between the host and the Airbnb platform. Evidence has illustrated that a host's trust in Airbnb is positively related to four antecedents, namely: social, technical, economical and privacy assurance. It has been found that the technical quality of the platform and the perceived effectiveness of privacy policy both play a strong role in inducing trust. In addition, the social benefits of using the platform and the economic gains that come about as a result of participation in the platform also influences hosts’ behavioural intentions (Wang, Asaad and Filieri, 2019). A recent study looking into the motivations behind Airbnb hosting discovered a multitude of diverse factors that lead to Airbnb hosting (Fischer, Pahus and Bager, 2019). These factors are grouped into four motivating factors that provide an overview as to the motivations behind Airbnb hosting (Fischer, Pahus and Bager, 2019). The “four P’s of Airbnb host motivation” are Pains, People, Psychology and Profit (Fischer, Pahus and Bager, 2019). The Pains factor pertains to the burdens of becoming an Airbnb host in the sense that the host loses a portion of their private space and will inevitably be subject to stress from reviews and consumer expectations. The remaining three factors all speak to the benefits of becoming an Airbnb host with regards to the freedom and flexibility of the job, the financial and independence aspect of the job and the potential to create a network of friends and acquaintances via the intimacy of sharing one’s personal space (Fischer, Pahus and Bager, 2019). In conjunction with this, Airbnb hosts were seen to have motivations similar to that of the consumer, as discussed above, in that becoming a host inevitably combats the fear of being lonely (Fischer, Pahus and Bager, 2019). External influence can also have an impact on an individual's decision to participate in Airbnb as a host. Further studies have shown that Airbnb as a platform uses social idealization and dramatizing the concept of sharing in the Airbnb context as a moral value to encourage hosting (Saturnino and Sousa, 2019). These same social idealization techniques encourage potential hosts to engage in Airbnb in order to better themselves holistically by becoming self-entrepreneurs. It is thus evident that often the decisions to participate as hosts is not always

“uncoerced” albeit it relatively subliminally via smart marketing techniques implemented by Airbnb (Saturnino and Sousa, 2019).

The proposed analytical Model for the study – Technological Acceptance Model (TAM):

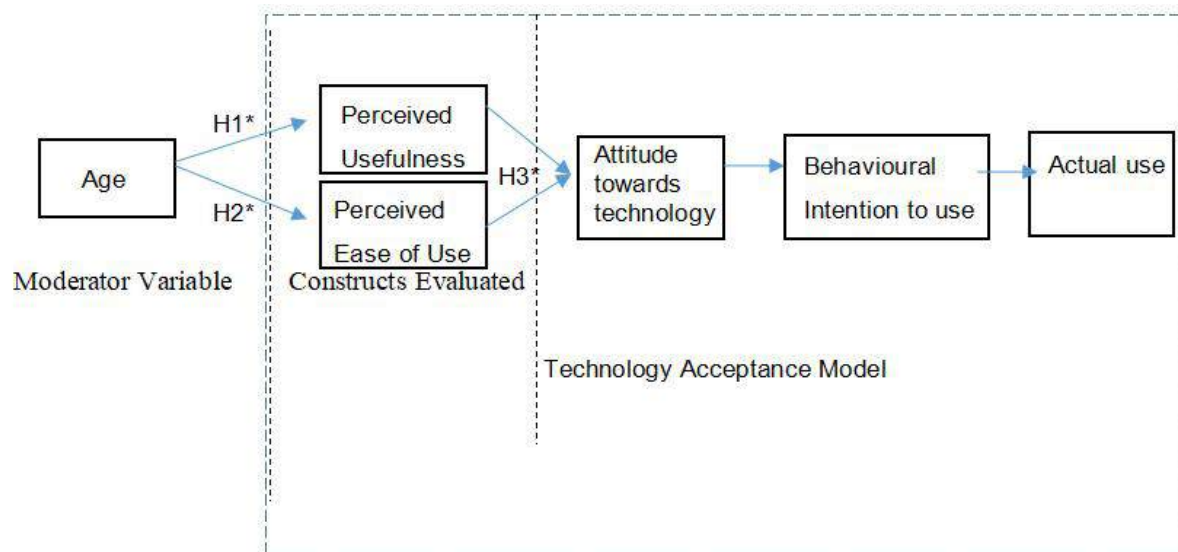


Figure 1 Proposed Analytical Model – Technological Acceptance model; adapted from Davis et.al 1989, including Age as a moderator Variable

5. Research Methodology

This section of the report will discuss the detail of the research methodology implemented in the study. The methodology will begin with the research design and method, followed by sampling, measurement instruments used, data collection and finally the ethical considerations of the study.

5.1 Research Design & Method

The research design was a mono-method, quantitative design of a conclusive nature. This design has been selected as the information needed is clearly defined and the research process is formal and structured with the data being analysed in a quantitative manner. Conclusive research can further be divided into descriptive or causal research. The aim of this study is to establish the impact age has on an individual’s acceptance and adoption of the Airbnb application. Age will act as a moderator variable in the presence of the two constructs, perceived ease of use and perceived use, and as a result this research is of a causal nature. The analytical model that will be used to carry out the research will be the Technology Acceptance Model (TAM). The two primary constructs in TAM that predict technology acceptance are, the beforementioned, perceived usefulness and perceived ease of use (Davis, 1989). TAM is easily modified in order to include moderator variables to analyse their resultant impact on perceived usefulness and perceived ease of use and thus resultant Technology acceptance (Hauk, Hüffmeier and Krumm, 2018; Roy, 2017; Setiyono, Shihab & Azzahro, 2019; Wang and Jeong, 2018). This makes TAM an ideal model in order to investigate the impact of age as a moderator variable on an individual’s adoption and use of the Airbnb application/service.

Past systematic TAM application standards will be drawn upon, modified and “extended” according to the research question this study aims to answer. This extension of TAM analysis by incorporating age as a moderator variable will be guided by similar TAM analysis extensions made by other past studies. The studies selected as references are those investigating the impact of moderator variables on the acceptance of technologies in the m-commerce realm or those that apply age as a moderator variable in technological acceptance (Hauk, Hüffmeier and Krumm, 2018; Roy, 2017; Setiyono, Shihab & Azzahro, 2019; Wang and Jeong, 2018). These are studies were referenced closely because of their relevance to our research question and construct of our hypotheses (the impact of age on technology acceptance and resultant participation in the context of Airbnb). Referencing the standard for TAM analysis, as illustrated through past studies, this study will implement single cross-sectional data collection methods through online, electronic surveys which are subdivided into “perceived ease

of use” and “perceived usefulness” with age as a moderator variable. The decision for use of electronic surveys is the scalability to match sample sizes of past studies, the removal of interviewer influence on responses/anonymity of respondents and time limitations that may be exacerbated by the current social distancing measures in place across South Africa. Theory of reasoned action (TRA) will be then applied to the responses in order to establish the correlation between the two key constructs, perceived usefulness and perceived ease of use, and the resultant user intentions, attitudes and adoption behaviour relating to Airbnb (Hauk, Hüffmeier and Krumm, 2018; Roy, 2017; Setiyono, Shihab & Azzahro, 2019; Wang and Jeong, 2018). As mentioned previously, age of respondents will be incorporated into the analysis as a moderator variable and its impact on technology acceptance will then be cross-sectionally applied and evaluated.

5.1.1 Sampling Design

This section will explain the following aspects of the study: the target population, sampling frame, sampling technique, sample size and finally the intended implementation of the sampling design.

5.1.2 The target population

The target population for this study will be persons over the age of 18 in South Africa who have access to the internet. This range in age of the population is desirable as it will give the necessary scope to the study required to investigate age as a moderator variable in user participation in Airbnb. We selected South Africa as the target population region as our online survey distribution method allows for countrywide distribution, which will make meeting the required sample size easier (Hauk, Hüffmeier and Krumm, 2018; Roy, 2017; Setiyono, Shihab & Azzahro, 2019; Wang and Jeong, 2018).

5.1.3 The sampling technique and sample size

The sampling technique that this study will implement is a traditional approach without replacement as it is undesirable to have a respondent participate twice. Due to the nature of this study, variables being investigated, and resource and time limitations the use of a sampling frame will not be implemented. As a result, the research carried out will be in the form of non-probability, judgemental sampling.

The sample size will be between 200 and 300 respondents, to align with sample sizes of past studies (Hauk, Hüffmeier and Krumm, 2018; Roy, 2017; Setiyono, Shihab & Azzahro, 2019; Wang and Jeong, 2018). The sampling technique will aim to split the respondents between the top end of Generation Z (18-25 years), Generation Y (25-40 years), Generation X (41-56 years) and Baby Boomers (57-75 years). This generational distribution of responses mean that the study will consist of approximately 60-70 responders from each generation.

5.2 Measurement and Scaling

This section will explain the following elements that of the study: The measurement instrument, the scaling procedure and the measurement aids used to expose respondents to the functionality of the Airbnb technology.

5.2.1 Measurement instrument

This study will make use of a questionnaire, supplemented with a link to explore the Airbnb website to familiarize all respondents with the technology’s functionality. The questionnaire layout follows sub-divided into sections of perceived ease of use and perceived usefulness, which has been established as the standard layout in past studies (Hauk, Hüffmeier and Krumm, 2018; Roy, 2017; Setiyono, Shihab & Azzahro, 2019; Wang and Jeong, 2018). There will be 12 questions overall which aligns with past studies (Hauk, Hüffmeier and Krumm, 2018; Roy, 2017; Setiyono, Shihab & Azzahro, 2019; Wang and Jeong, 2018). Questions 1 to 6 will relate to usefulness and question 7 – 12 will relate to ease of use. The respondents will have to give the generation they fall into first (age), which will be incorporated into the response analysis as the moderator variable. As mentioned, prior, the questions will follow a positively correlated, five-point Likert Scale with end points of [1] “Strongly Disagree” and [5] “Strongly Agree”, so that the responses are consistent in the indication of the latent constructs in question (Perceived usefulness or Perceived Ease of Use). Responses of [1] will be

indicative of a very negative mindset towards Airbnb technology and [5] will be indicative of very positive. A high internal consistency of the questions is imperative in order to provide accurate results for the data analysis that will follow the data collection process.

5.2.2 Measurement scaling

All questions follow a positively correlated, five-point Likert Scale with end points of [1] “Strongly Disagree” and [5] “Strongly Agree”, so that the responses are consistent in the indication of the latent constructs in question (Perceived usefulness or Perceived Ease of Use). This scaling technique is consistent with past studies (Hauk, Hüffmeier and Krumm, 2018; Roy, 2017; Setiyono, Shihab & Azzahro, 2019; Wang and Jeong, 2018). Responses of [1] are indicative of a very negative mindset towards Airbnb technology and [5] are indicative of very positive. A high internal consistency of the questions is imperative in order to provide accurate results for the data analysis that will follow the data collection process.

5.2.3 Measurement aids

A non-biased description of what Airbnb is with a link to the Airbnb website will be provided to the respondent along with the questionnaire that they need to complete. A scenario will be created for them that will prompt the exploration of the Airbnb website. The hypothetical scenario created will read as follows:

“Is there a place you’d like to visit, or a person far away that you would like to see? Follow the link below and explore Airbnb.” <https://www.airbnb.co.za/>

The phrasing of the prompt thus places a personal touch on the questionnaire and makes the respondent more invested in the overall process. It will allow them to navigate the platform with purpose and thus give them the greatest possible opportunity to establish whether or not they perceive it as being useful and easy to use.

5.3 Data Collection

This section explains the following elements of the study: pre-testing of the data measurement instrument and the data capture method.

5.3.1 Pre-testing

Pre-testing of the data measurement instrument was conducted prior to releasing the final revision to the sample population. Pre-testing took place in the form of distribution of the questionnaire to 12 respondents from the 4 respective target generations. The pre-testing was conducted with each of the 12 respondents for the sole purpose of gauging respondent attitude towards the measurement instrument and the functionality of the questionnaire – a quality control of sorts in order to ensure that the necessary responses were captured and that the process followed by the respondent was intuitive and simple, so as to allow for responses that were as accurate as possible. Pre-testing results were used optimization purposes only and, therefore, and were excluded from the primary online survey test results. No adjustments were made to the questions after the pre-testing phase, our questionnaire questions and layout considerations revealed that the questionnaire was simple to follow and none of the respondents had any difficulties when progressing through the questionnaire.

5.3.2 Data Source

Data collection was carried out using the online survey method. The questionnaire was designed on google forms, where the results were also stored and captured. The link to the questionnaire was distributed primarily through email and WhatsApp to individuals that the researchers knew personally, through convenience sampling. Preceding the questionnaire was a cover page indicating that participation indicates consent. The cover page presented respondents with a scenario that prompted the exploration of the Airbnb website before they progressed to answering the survey questions. This was an important step in ensuring respondents were familiar with the technology and thus provided accurate responses. The data collection process took place over a-week period starting July 2021 and ended 2021. The total number of responses captured over the period was 275 responses – 62 Baby

Boomers, 56 Generation X, 93 Generation Y and 64 Generation Z. The goal sample size of between 200 and 300 respondents, to align with past literature, was thus met.

5.4 Statistical Analysis

The statistical analysis process began with the data export from google docs and into an excel format. The data was then transferred to SPSS in testing the hypotheses laid out in terms of the theoretical framework and TAM analysis.

Testing for normality of the data using the Kolmogorov-Smirnov test was appropriate since the sample size was greater than 50. We then continued by conducting a Cronbach’s Alpha test to test the internal consistency of the questions and their resultant ability to measure the underlying latent variables, Perceived Usefulness and Perceived Ease of Use. No directional changes were required.

A factor analysis test was performed to confirm the validity of our questions and whether they do in fact load onto the same, intended latent factor. We then progressed to the relevant hypothesis, H1, H2 and H3, that the study sought out to investigate.

For testing H1 and H2 we conducted bivariate correlations, using the Spearman’s Rho, non-parametric test for bivariate correlation, appropriate for determine the relationship between two scale variables which are not normal in distribution. This required recoding of the nominal variable, Generational Group, into numeric format so that it could be analysed as a scale variable.

And finally, for H3, linear regression with the addition of age as a moderator variable through the addition of an interaction term between age and Perceived Usefulness and Perceived Ease of Use respectively. 3 Regression models were run, one for Perceived Usefulness with interaction, one for Perceived Ease of Use with Interaction, and the final model that included both latent independent variables and their respective interaction terms with the moderator variable, age. This was the appropriate test based on the practices of past literature. We then evaluated the regression results and the impact age as a moderator had on the future use of respondents.

6. Results

6.1 Sample Profile

A total of 279 surveys were conducted, 4 of which were only received after data export and as a result the final sample was comprised of 275 respondents across the four generational groups evaluated.

6.2 Descriptive Statistics

The data captured from respondents was comprised the following variables: two nominal variables, that of generational group and decision for future use and two sets of 7 question scale variables pertaining to the two underlying latent constructs measured by the questionnaire, those pertaining to Perceived Usefulness and Perceived Ease of Use respectively.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Baby Boomers (57 – 75 Years)	62	22.5	22.5	22.5
	Gen X (41 – 56 Years)	56	20.4	20.4	42.9
	Gen Y (26 – 40 Years)	93	33.8	33.8	76.7
	Gen Z (18–25 Years)	64	23.3	23.3	100.0
	Total	275	100.0	100.0	

Figure 1: Summary of generational representation across sample

From Figure 1 it is evident that for the “Generational group” nominal variable the reported valid percentage across generational groups in terms of respondents was Baby Boomers (22.5%), Generation X (20.4%), Generation Y (33.8%) and Generation Z (23.3%), which thus cumulatively made up the entire sample captured. This is illustrative of a diverse sample which was able to capture a significant percentage of each generational group, thus allowing for fair representation when it comes to the interpretation and analysis of the relevant inferential statistics.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SumPU	275	2.14	5.00	4.3148	.52882
SumPEOU	275	2.14	5.00	4.2530	.57394
Valid N (listwise)	275				

Figure 2: Descriptive statistics for summated Scale variables, Perceived Usefulness and Perceived Ease of Use.

The scale variables present were questions aimed at measuring Perceived Usefulness and Perceived Ease of Use respectively. The questions (scale variables) relating to Perceived Usefulness reported a mean of 4.3148 and a standard deviation 0.52882. The questions relating to Perceived Ease of Use reported a mean of 4.2530 and a standard deviation of 0.57394. It is evident across both sets of questions that the mean is high and relatively close to 5, indicating that most respondents responded positively to the Airbnb Application. The relatively small standard deviations indicate that there was a general agreement across respondents with respect to the Perceived Usefulness and Perceived Ease of Use of the Airbnb application.

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		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	15	5.5	5.5	5.5
	Yes	260	94.5	94.5	100.0
	Total	275	100.0	100.0	

Figure 3: Future Use response frequency across all respondents

With respect to the final decision on future use of the Airbnb application, represented in figure 3 above, a binary categorical variable of “yes” and “no” responses, 94.5% of respondents answered “Yes” they would use Airbnb in the future and thus 5.5% answered “No”. This indicates that a high proportion of respondents do intend to use Airbnb in future.

6.3 Test for Association

For the purpose of being as comprehensive in our analysis as possible, we ran a chi-square test of association between age and future use using the crosstabulation function. The reason for this is our later hypothesis tests will involve age as a moderator variable in terms of its impact on the two constructs hypothesized to impact future use. Thus, we wanted to evaluate the relationship between age and future use without interaction with underlying constructs in order to evaluate whether or not there is a correlation present.

FUNumeric * GenerationalNominal Crosstabulation

		GenerationalNominal					
		Gen Z (18-25 Years)	Gen Y (26-40 Years)	Gen X (41-56 Years)	Baby Boomers (57-75 Years)	Total	
FUNumeric	No	Count	2	1	5	7	15
		% within FUNumeric	13.3%	6.7%	33.3%	46.7%	100.0%
		% of Total	0.7%	0.4%	1.8%	2.5%	5.5%
Yes		Count	62	92	51	55	260
		% within FUNumeric	23.8%	35.4%	19.6%	21.2%	100.0%
		% of Total	22.5%	33.5%	18.5%	20.0%	94.5%
Total		Count	64	93	56	62	275
		% within FUNumeric	23.3%	33.8%	20.4%	22.5%	100.0%
		% of Total	23.3%	33.8%	20.4%	22.5%	100.0%

Figure 4: Crosstabulation output between Generational Group and Future Use responses

With respect to the crosstabulation output evaluation in figure 4 above, we immediately see some very interesting results with respect to the relationship between age and % contribution to “No” responses in terms of future use. Baby Boomers, the oldest generation, accounts for 46.7% of “No” responses within future use, and Generation X, the second oldest generational group accounts for 33.3% of the “No” responses within Future Use. This is illustrated by the values circled in red and means that the oldest two generations account for 83% of the total “No” responses to whether they would use Airbnb in future. This aligns with the idea illustrated in past literature that older generations are less likely to accept technology (Hauk, Hüffmeier and Krumm, 2018).

Following up these insights found in the crosstabulation we evaluated the Chi-Square output for the test for association between Generational Group (Age) and Future Use of the Application. The corresponding hypotheses are as follows:

H0: There is no association between Generational Group (Age) and Future Use of the Airbnb Application

H1: There is significant evidence to suggest that there is an association between Generational Group (Age) and Future Use of the application

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.537 ^a	3	.023
Likelihood Ratio	10.160	3	.017
Linear-by-Linear Association	6.897	1	.009
N of Valid Cases	275		

Figure 5: Chi-Square output for the test for association between generational group and future use

In reference to figure 5 above, due to the large Pearson Chi-Square test statistic value of 9.537a and correspondingly small p-value of 0.023, we reject H0 at the 5% and conclude that there is significant evidence to suggest an association between age and future use. This once again strengthens the findings of past literature findings as earlier discussed.

Directional Measures

			Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Nominal by Nominal	Lambda	Symmetric	.030	.014	2.139	.032
		FU Dependent	.000	.000	. ^c	. ^c
		G Dependent	.033	.015	2.139	.032
	Goodman and Kruskal tau	FU Dependent	.035	.020		.023 ^d
		G Dependent	.012	.006		.017 ^d

Figure 6: Directional measure of the chi-square association between Generational Group and Future Use.

With respect to direction, Figure 6 illustrates that the Generational group dependent lambda value is 0.033 and significant at the 5% level due to its approximate significance of 0.032. Thus, the relationship is thus positively significant albeit it almost negligibly positive, due to the very small value of 0.032.

		Value	Approximate Significance
Nominal by Nominal	Phi	.186	.023
	Cramer's V	.186	.023
	Contingency Coefficient	.183	.023
N of Valid Cases		275	

Figure 7: Strength of the relationship between Generational Group and Future Use Association represented by Contingency Coefficient

The strength of the relationship will be evaluated by looking at the contingency coefficient represented in figure 7 because it is a 1x1 matrix. The contingency coefficient is significant at the 5% level due to its approximate significance of 0.023 and the strength of the relationship is relatively weak at 0.183, and thus a lot closer to 0 than it is to 1, as 1 would be indicative of an extremely strong association.

6.4 Normality

When testing for normality, we applied the Kolmogorov-Smirnov test for normality as the sample size was $N > 50$. Due to the fact that the questions were conducted on a Likert scale and a high response is indicative of an intuitive, useful application, the responses it was expected that the responses would not be normally distributed. The hypotheses for the test for normality for all variables would be as follows:

H0: The responses are normally distributed

H1: The responses are not normally distributed

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PU-1	.387	275	.000	.678	275	.000
PU-2	.292	275	.000	.750	275	.000
PU-3	.290	275	.000	.743	275	.000
PU-4	.341	275	.000	.704	275	.000
PU-5	.254	275	.000	.786	275	.000
PU-6	.250	275	.000	.795	275	.000
PU-7	.216	275	.000	.851	275	.000
PEOU-1	.290	275	.000	.767	275	.000
PEOU-2	.269	275	.000	.773	275	.000
PEOU-3	.240	275	.000	.800	275	.000
PEOU-4	.233	275	.000	.829	275	.000
PEOU-5	.239	275	.000	.811	275	.000
PEOU-6	.322	275	.000	.751	275	.000
PEOU-7	.286	275	.000	.751	275	.000

a. Lilliefors Significance Correction

Figure 8: Kolmogorov-Smirnov test for normality for scale variables intended to measure underlying constructs, Perceived Usefulness and Perceived Ease of Use.

All of the questions came back as highly significant, with p-values of 0.000 across all questions when applying the Kolmogorov-Smirnov test, as seen in figure 8 above. As a result, for all scale variables, corresponding to Perceived Usefulness and Perceived Ease of Use, we can reject H0 at the 1% and conclude that none of the variables are normally distributed, and thus non-parametric testing will need to be considered when evaluating the most suitable statistical test when the above scale variables are involved.

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
FUNumeric	.540	275	.000	.237	275	.000

a. Lilliefors Significance Correction

Figure 9: Future Use Test for Normality Output

Normality Tests were then conducted for future use responses, and due to the fact that future use is hypothesized as being closely related to Perceived Usefulness and Perceived Ease of Use, we were not expecting a normal distribution for this categorical variable either. A Kolmogorov-Smirnov test was once again conducted and a corresponding highly significant p-value of 0.000 was returned, illustrated in figure 9 above, as a result we reject H0 at the 1% for the hypothesis test for normality and conclude that there is significant evidence to suggest that the responses with respect to future use are not normally distributed. This was as we expected. Once again, non-parametric test will need to be considered as a result when specific statistical tests are conducted.

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
GenerationNumeric	.223	275	.000	.859	275	.000

a. Lilliefors Significance Correction

Figure 10: Generational Group Test for Normality Output

Finally, a Kolmogorov-Smirnov test for normality was run for the generational group nominal variable and the output is in figure 10 above. This too received a highly significant p-value of 0.000

and as a result we rejected H0 at the 1% level and concluded that Generational Groups were also not normally distributed in the sample. Non-parametric test will need to be considered, when including this variable in certain statistical tests.

6.5 Reliability

The structure and formulation of the questions pertaining to the underlying variables being evaluated in the study were based on past literature. The fact that these questions were created by our research team opens the door for the possibility of potential lack of internal consistency across questions in measuring the same underlying construct. In order to ensure that internal consistency was present across questions we conducted an Item Reliability test using the Cronbach's Alpha test for internal consistency, which included alpha-if-deleted values.

Reliability Statistics				
	Cronbach's Alpha	N of Items		
	.827	7		

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PU-1	25.63	10.905	.637	.799
PU-2	25.83	10.802	.577	.805
PU-3	25.85	10.324	.572	.804
PU-4	25.75	10.648	.509	.814
PU-5	25.93	10.842	.499	.816
PU-6	25.99	9.701	.663	.788
PU-7	26.24	9.276	.606	.802

Figure 11: Item reliability analysis Cronbach's Alpha-if-deleted output for Perceived Usefulness Questions

For the questions pertaining to Perceived Usefulness, we received a Cronbach's Alpha value of 0.827 seen in figure 11 above, which is well above the rule of thumb of 0.7 as the minimum value for the presence of internal consistency. When evaluating the alpha-of-deleted values across all seven questions in figure 11, none resulted in an alpha value greater than 0.827, thus illustrating that all of the questions contributed to the consistent measurement of the same underlying construct. Thus, no questions needed to be removed.

Reliability Statistics				
	Cronbach's Alpha	N of Items		
	.843	7		

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PEOU-1	25.46	11.811	.657	.813
PEOU-2	25.48	11.995	.661	.813
PEOU-3	25.56	12.240	.625	.818
PEOU-4	25.69	12.061	.548	.831
PEOU-5	25.58	12.654	.542	.830
PEOU-6	25.38	12.135	.667	.812
PEOU-7	25.47	12.279	.513	.836

Figure 12: Item reliability analysis Cronbach's Alpha-if-deleted output for Perceived Ease of Use Questions

We then carried out the same test for those questions pertaining to the underlying Perceived Ease of Use construct and the results are represented in Figure 12 above. These questions also received a high Cronbach’s alfa value of 0.843, none of the if-deleted alfa values across the seven questions resulted in a higher alfa-value and as a result no questions had to be removed.

6.6 Validity

Although there was internal consistency present across questions and high levels and thus item reliability across both underlying constructs, we decided to run a Factor Analysis in order to evaluate the validity of the questions and whether or not they potentially measured an additional construct that was not accounted for in the study.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.986	42.755	42.755	5.986	42.755	42.755	2.873	20.522	20.522
2	1.298	9.269	52.024	1.298	9.269	52.024	2.843	20.304	40.826
3	1.104	7.884	59.908	1.104	7.884	59.908	2.672	19.082	59.908
4	.841	6.006	65.914						
5	.745	5.321	71.235						

Figure 13: Total Variance Explained Output from Factor Analysis function on SPSS

The total variance explained established if there was potentially a third component that the respective scale questions were measuring. We applied the Kaiser’s criterion rule to determine the number of components that significantly contribute to variation in responses across the scale variables (questions). Based on the Kaiser’s criterion, when evaluating the Total Variance Explained output, figure 13 above, we established that there were 3 Principal components with eigenvalues greater than 1. The % of variance explained by the respective PC’s was PC1 (20.522%), PC2 (20.304%) and PC3 (19.082%) thus together accounting for 59.908% of the total variation. This thus indicated that there was a third significant underlying orthogonal (independent) factor that the questions were measuring.

The Principal Component scores with varimax rotation for ease of interpretation. This analysis was done across the two sets of seven questions which were designed to be indicative of Perceived Usefulness and Ease of Use respectively. This was done to evaluate which loaded onto which component.

	Component		
	1	2	3
PU-1	.666	.430	.058
PU-2	.630	.473	-.027
PU-3	.720	.178	.115
PU-4	.448	.338	.276
PU-5	.346	.631	.093
PU-6	.702	.081	.413
PU-7	.688	.034	.438
PEOU-1	.120	.727	.381
PEOU-2	.138	.801	.324
PEOU-3	.252	.694	.305
PEOU-4	.101	.209	.733
PEOU-5	.231	.232	.613
PEOU-6	.229	.340	.672
PEOU-7	.117	.135	.706

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.^a

Figure 14: Varimax Rotated Principal Component Output across 14 questions intended to measure Perceived Usefulness and Perceived Ease of Use

Referring to Figure 14 above, Perceived Usefulness questions, PU-1, PU-2, PU-3, Pu-4, PU-6 and PU-7 all loaded most heavily onto PC 1. PU-4, however loaded most heavily onto Principal Component 2. PEOU-1, PEOU-2 and PEOU-3 all loaded heavily onto PC2 as well, indicating an overlap between the underlying component that both they and PU-4 measure.

PEOU-4, PEOU-5, PEOU-6 and PEOU-7 all load heavily on PC3.

The difference in loadings onto Principal components across questions internally as well as across question sets illustrates that the questions may not be measuring the underlying constructs Perceived Usefulness and Perceived Ease of Use respectively as accurately as we had hoped. Should the tests be run again, it would be wise to re-evaluate the phrasing of the questions and establish reasons for overlap between questions designed to measure different underlying constructs. Principle components do not explicitly disclose which construct the PC measures so some level of insight and interpretation will need to be conducted.

6.7 Inferential Statistics

Finally, we progressed to the testing of our three previously stipulated hypotheses:

H1: Age will be positively related to Perceived Usefulness in the context of Airbnb

H2: Age will be negatively related to Perceived Ease of Use

H3: Age will be positively related to overall user attitude towards acceptance and use of Airbnb technology

For testing H1 and H2 we conducted bivariate correlations, using the Spearman's Rho, non-parametric test for bivariate correlation, appropriate for determine the relationship between two scale variables which are not normal in distribution, as previously established. This required recoding of the nominal variable, Generational Group, into numeric format so that it could be analysed as a scale variable. The summation of the Perceived Usefulness and Perceived Ease of Use questions respectively was necessary in order to conduct the correlation between the overall responses equating to the two constructs and age, respectively.

		GenerationN umeric	SumPU
Spearman's rho	GenerationNumeric	Correlation Coefficient	1.000
		Sig. (2-tailed)	.072
		N	275
SumPU		Correlation Coefficient	-.109
		Sig. (2-tailed)	.072
		N	275

Figure 15: Bivariate Correlation Output for correlation between generational group and Perceived Usefulness

H01: There is no relationship between Perceived Usefulness and age.

When analysing the Nonparametric correlation Spearman's Rho output, as shown in Figure 15 above, of the relationship between age and Perceived Usefulness, we found a non-significant negative relationship of -0.109 between perceived usefulness and age, as a result of the corresponding p-value of 0.072 being greater than 0.05. As a result, we fail to reject H01 at the 5% level and conclude that there is not significant evidence to suggest a relationship between age and Perceived Usefulness. In terms of our hypothesis H1, based on the negative relationship established, we actually see that the relationship, albeit it slightly more than the required p-value to result in significance, does in fact illustrate a negative relationship between age and perceived usefulness, which is contradictory to our hypothesis from a directional standpoint.

		GenerationN umeric	SumPEOU
Spearman's rho	GenerationNumeric	Correlation Coefficient	1.000
		Sig. (2-tailed)	.035
		N	275
	SumPEOU	Correlation Coefficient	-.127*
		Sig. (2-tailed)	.035
		N	275

Figure 16: Bivariate Correlation Output for correlation between generational group and Perceived Ease of Use

H02: There is no relationship between age and perceived ease of use.

When analysing the nonparametric correlation Spearman's Rho output in figure of the relationship between age and perceived ease of use, we found a significant, negative relationship of -0.127 between age and perceived ease of use at the 5% level as a result of the corresponding p-value of 0.035. As a result, we reject H02 at the 5% level and conclude that there is significant evidence to suggest a negative relationship exists between age and perceived ease of use. This thus illustrates that hypothesized H2 was indeed correct.

And the final null hypothesis corresponding to our proposed H3:

H03: The interaction between generational group and perceived usefulness and perceived ease of use respectively will have no impact on future use of Airbnb.

Based on past literature and the theoretical framework of the Technology Acceptance Model, it was established that the testing of age as a moderator variable and its resultant interaction with perceived usefulness and perceived ease of use would have an overall positive effect on future use in the case of Airbnb. We thus ran multiple linear regression with Future Use being the dependent variable (converted to numerical so that SPSS could interpret it as a scale variable). Independent variables were Generational Group, summated Perceived Usefulness, summated Perceived Ease of Use and two interaction terms, that of Generational Group*Summated Perceived Usefulness and Generational Group*Summated Perceived ease of use.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.489 ^a	.239	.225	.200

a. Predictors: (Constant), GenPEOUInteraction, SumPU, SumPEOU, GenerationNumeric, GenPUInteraction

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.396	5	.679	16.938	.000 ^b
	Residual	10.786	269	.040		
	Total	14.182	274			

a. Dependent Variable: FUNumeric

b. Predictors: (Constant), GenPEOUInteraction, SumPU, SumPEOU, GenerationNumeric, GenPUInteraction

Figure 17: Model Fit and ANOVA Output for illustrating the significance of the full regression model

In reference to the ANOVA output in Figure 17, the overall model was highly significant at the one percent level and was indicated by the incredibly small p-value of 0.000. The strength of the model, however, is very weak, as represented by the adjusted R-Square value, indicating that the model only accounts 22.5% of the variation in Future Use. This is a cause for concern and may be due to the fact that there are additional underlying factors that may influence future use that the study has not considered.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.777	.274		10.148	.000		
	SumPU	-.151	.088	-.352	-1.718	.087	.067	14.843
	SumPEOU	-.026	.079	-.066	-.331	.741	.071	14.003
	GenerationNumeric	-.565	.097	-2.681	-5.846	.000	.013	74.383
	GenPUInteraction	.121	.031	2.505	3.853	.000	.007	149.467
	GenPEOUInteraction	.005	.028	.096	.169	.866	.009	112.640

a. Dependent Variable: FUNumeric

Figure 18: Regression output for multiple regression to evaluate impact of age as a moderator on its interaction with perceived usefulness and perceived ease of use in impacting the dependent variable, Future Use.

The VIF values of the model indicating Multicollinearity are not a cause for concern as the addition of the interaction terms as well will create heightened multicollinearity. It has already been established that generational group (age) is significantly correlated with variable PEOU as seen in Figure 16, and only just non-significantly correlated with PU in figure 15.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.282	.111		11.545	.000		
	SumPU	.165	.032	.383	5.076	.000	.561	1.782
	SumPEOU	-.011	.030	-.028	-.366	.715	.561	1.782

a. Dependent Variable: FUNumeric

Figure 19: Regression Output and corresponding VIF values for PU and PEOU variables when moderator variable generational group (age) and the corresponding interaction terms have been removed.

To illustrate how the addition of the interaction of the moderator variable and the corresponding interaction terms raised the VIF value, we ran linear regression without it, and they are represented in Figure 19 above. It is evident that there is no real multicollinearity present between PU and PEOU when the moderator and corresponding interaction terms are removed.

Thus, moving past the issue of multicollinearity and evaluating the influence of age as a moderator through its interaction with the two key constructs respectively, perceived usefulness and perceived ease of use and its resultant impact on future use, only the interaction of generational group with Perceived Usefulness came back as being significantly positive with a large t-statistic of 3.853 and correspondingly minute p-value of 0.000 with a corresponding positive beta coefficient of 2.505. The interaction between Perceived Ease of Use and Generational group returned a small t-statistic of 0.169 and a non-significant p-value of 0.866 with a very small positive beta-coefficient of 0.096. As a result, with respect to the H3, we reject H0 at the 1% level and conclude that there is significant evidence to suggest that the interaction between generational group (age) and Perceived usefulness has a significant, positive impact on future use.

Our results for H3 were aligned with what we hypothesized. It was established in past literature that as people age, their values shift away from growth and acquiring knowledge towards meaning and social needs and connection with loved ones (Hauk, Hüffmeier and Krumm, 2018). The fact that Airbnb allows individuals to connect with loved ones who may live far away or are difficult to visit may be the reason why we see age acting as a moderator and changing the relationship between age and future use, through its impact on the perceived usefulness of the application. The greatest issue with the results, however, is that of the weak adjusted R-squared value of only 22.5% and the fact that the research had clearly not considered all underlying factors that may influence Future Use of the Airbnb application. This idea is backed up by “extended TAM” models being developed and implemented in recent years in order to account for additional latent constructs Davis, the creator of the foundation TAM model did not include (Davis, 1989; Jayasingh & Eze, 2010). Research and insight into potential additional factors may help explain Future Use and thus technology acceptance more accurately in future studies.

7. Managerial Implications

Firstly, in determining whether age had a significant impact on the level of technological acceptance of a user, a chi-square test of association between age and future use was conducted to evaluate the correlation purely between the two nominal variables in isolation. The results proved that age had a significant, slightly positive, yet weak association with the intention of Future Use of respondents. With respect to the question from the questionnaire about the intent to use Airbnb in the future, using the cross-tabulation output evaluation, there was a significant relationship between the age and the future use with the generational groups Baby Boomers, the oldest, and Generation X, the second oldest, who made up the total of 83% of the “No” answer responses with the shares being 46.7% and 33.3% respectively. Therefore, this further depicts how age had a significant impact on the level of technological acceptance of a user, that being a lower level of acceptance. Further backing up our primary objective, the high statistical value of 9.537 and small p-value of 0.023 from the Pearson Chi-Square test meant that we rejected the H₀ at the 5% significance level and concluded that there was strong evidence to suggest an association between age and future use intent.

The results from the analyses pertaining to our secondary objective, evaluating whether the interaction between age and Perceived Usefulness has a positive impact on Airbnb Technology acceptance and resultant purchase decisions, further supports our primary objective. We conducted bivariate nonparametric correlations on the relationship between age and perceived usefulness and found that there was not significant evidence to suggest a relationship between age and Perceived Usefulness. When we later conducted the multiple linear regression to evaluate the impact of age as a moderator, however our results with respect to Perceived usefulness changed drastically when interacting with age. The interaction between generational group and perceived usefulness returned a large t-statistic and highly significant p-value, as well as a large positive beta coefficient relative to that of other independent variables. This thus aligned answered our aforementioned secondary objective about the positive impact of the interaction between generational group and perceived usefulness on future use of the Airbnb application which resulted in us rejecting H₀₃. This result also backed up our primary objective as it illustrated that age does in fact have a significant impact on future use of Airbnb and the resultant technological acceptance of the user.

Therefore, from these results and the fact that 83% of all respondents who answered “No” to the question of future use were part of the two oldest generations, we can deduce that Airbnb is an application that is primarily used by younger generations, but that there the Perceived Usefulness of the app in the minds of the older generation can have a significant positive effect on their purchase intent and response to the question of future use.

Our results for H3 were incredibly interesting and in fact aligned with what we hypothesized. It was established in past literature that as people age, their values shift away from growth and acquiring knowledge towards meaning and social needs and connection with loved ones (Hauk, Hüffmeier and Krumm, 2018). The fact that Airbnb allows individuals to connect with loved ones who may live far away or are difficult to visit may be the reason why we see age acting as a moderator and changing

the relationship between age and future use, through its impact on the perceived usefulness of the application. This answers the second of our secondary objectives, the question of whether older generations are more likely to participate in Airbnb over other ecommerce platforms. Because of this shift in the mindset of the older generations towards prioritising meaningful, human connection, Airbnb is likely to experience greater technological acceptance from older users than other e-commerce platforms that are not centred around meaningful connections with loved ones.

Thus, we can assume that the true population of the older generation would personally benefit from using Airbnb as it aligns with their priorities due to their life stage and there is evidence of increasing likelihood of future use if they exhibit a greater perceived usefulness when evaluating the value of the app.

Lastly, with respect to the third secondary objective, we reached the conclusion that the impact of the interaction between age and perceived ease of use on Airbnb technology acceptance and resultant purchase decisions was negative. We found this through the nonparametric correlation Spearman's Rho output whereby there was a significant negative relationship between age and perceived ease of use at the 5% level of significance and thus rejected H_02 which tells us that the older generations are less likely able to navigate the site well and thus are less likely to purchase on the platform. The presence of perceived usefulness, however, as seen in the multiple regression model which involved interaction with generational group, illustrated that Perceived Ease of Uses loses its significance when it is considered in conjunction with Perceived Usefulness whilst being moderated by the users age and its resultant impact on future use. It is evident that in the context of Airbnb, that Perceived Usefulness “overrides” the significant Perceived Ease of Use and it is not significant in impacting the user’s likelihood of future use. Thus, younger generations are more likely to purchase on the platform due to their technological capabilities and the application being accommodating.

Overall, with all the objectives and results taken into consideration, we can say that user age significantly influences their level of technology acceptance, but that there is evidence of Perceived Usefulness having a significant positive impact on the respondent’s future use when interacting with age. Simply put, as users get older, the weight of the perceived usefulness of Airbnb in the eyes of the user becomes a greater determining factor in their use of the application and resultant future use. There is thus evidence that the marginal benefit of the usefulness of the app through the ability to see and connect with loved ones is greater than the marginal cost of the difficulty or challenges that come with learning how to use a new technology.

8. Limitations

A potential limitation of the study pertains to the method of data retrieval. Respondents were required to browse the Airbnb website prior to answering the survey questions. This can be seen as a potential limitation for 2 reasons. Firstly, because browsing the Airbnb website will only give non-prior consumers a mediocre understanding of the Airbnb platform. As a result, consumer’s technological acceptance of the Airbnb platform could have been skewed toward high acceptance as the browsing process did not require users to go through the booking process.

Secondly, respondents may have bypassed the browsing process as there was no way to ensure the instructions were adhered to before answering the survey. Therefore, resulting in a less accurate representation of their perception and acceptance of the platform.

The use of Likert scale type questions in assessing the two key-constructs was another limitation to the research. The Likert scales allowed for an understanding of the consumer’s broad perception of the Airbnb platform, be it negative or positive. However, it did not allow for deeper understanding of the true consumer opinions of the Airbnb platform due to their one-dimensional nature and limited scale numbering. There is potential for the option to share comment and criticism in order to get actual feedback on issues at the granular levels, rather than blanket ratings of general questions.

Another limitation identified was present in the validity testing of the data. There was evidence of the presence of a third, significant underlying latent variable (PC3) in the principal component VARIMAX output of the factor analysis. This indicated the questions intended to measure Perceived Ease of Use and Perceived Usefulness had in fact been measuring an additional underlying latent component. This may have been able to explain some of the variation in purchase intent expressed through respondent's future use response. The presence of the latent variable limits the research as it indicates that the questions relating to Perceived Ease of Use and Perceived Usefulness may not have measured the two key-constructs as accurately as they should. This is a potential reason for one of the greatest issues with the results of the regression model evaluating the moderating effect of generational group. The weak adjusted R-squared value of only 22.5% indicates that there was still 77.5% of variation in future use decision that the model and its corresponding variables did not account for. This illustrates that the research has clearly not considered all underlying factors that may influence Future Use of the Airbnb application. This idea is backed up by "extended TAM" models being developed and implemented in recent years in order to account for additional latent constructs Davis, the creator of the foundation TAM model did not include (Davis, 1989; Jayasingh & Eze, 2010). Research and insight into potential additional factors may help explain Future Use and thus technology acceptance more accurately in future studies.

9. Conclusion

Literature has indicated that age as a moderator variable in TAM analysis, its impact on Perceived Usefulness and Perceived Ease of Use and the resultant purchase decisions of users in the Airbnb context has not been investigated explicitly. Studies have also indicated that perceived usefulness is the most significant factor in determining user participation in Airbnb. Due to the complete disruption of the hospitality industry caused by the creation of Airbnb, we realise the impact that investigating demographic variables that may have been overlooked by marketers could have on further cementing Airbnb's position as a superpower of the hospitality industry. After identifying this as an opportunity for future research, the study investigated age, represented in terms of generational group, as a moderator variable that could potentially impact user participation in Airbnb. The next phase was the data gathering process whereby Airbnb users across various generational groups in South Africa were interviewed. A TAM analysis was then applied to the results of perceived usefulness and perceived ease of use of Airbnb while incorporating age as a moderator variable.

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The Role of Social Factors and Materialism on Attitudes Towards Counterfeit Luxury Goods

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Keywords

Social factors;
materialism; attitude;
counterfeit luxury
goods

Abstract

Often luxury product purchases are motivated by the need to achieve social acceptance and communicate status. However, given the cost, many consumers turn to counterfeits to meet the social pressure. This makes a consumer's social environment important to understand as the majority of consumers cannot afford the authentic luxury goods and turn to counterfeits instead. Given the importance of the social environment, this study focused on the impact social factors (normative susceptibility, informative susceptibility, collectivism) have on the attitude towards counterfeit luxury goods. In addition, the study measured how materialism moderated these relationships. 517 completed questionnaires were retained for analyses, which included multiple regression and moderation analyses. The results of the study found that normative susceptibility and collectivism have an impact on the attitude towards counterfeit luxury goods while informative susceptibility did not have an impact on attitude. Furthermore, materialism moderated the relationship between normative susceptibility and attitude, demonstrating how the need to impress the social group through possessions encourages positive attitudes towards counterfeit luxury goods. The study's findings provide insights into how consumer's attitudes could be deterred towards the purchase of counterfeit luxury goods.

1. Introduction

Consumers are increasingly searching for social acceptance from their social groups and buy products that will provide the acceptance they desire (Jhamb, Aggarwal, Mittal & Pual, 2019). The luxury goods product category has seen an increase in demand on a global scale due to the social status that luxury goods provide (Statista, 2020). However, although luxury goods provide the social status that consumers long for, these goods are often unattainable by most consumers. This has resulted in the growth of the counterfeit luxury market (Wang, Lin & Choi, 2020). Although it is challenging to quantify the size of the market, it is reported to mimic the size of the authentic market – estimated to be approximately over \$3 trillion (Fontana, Girod & Kralik, 2019). The demand for counterfeit luxury goods is visible through the ease of access to these items (Li, Ghaffari, Su, 2020; Kaufmann, Petrovici, Filho & Ayres, 2016; Koay, 2018).

Within an emerging market context, specifically South Africa, consumers are typically classified as consumers who are concerned with their status and purchase products that communicate the status they wish to attain (Mahamba & Mashaba, 2018). As a way in which consumers in emerging markets communicate their status, consumers have increased their purchase of counterfeit luxury goods (Chand & Fei, 2021). This has become more prevalent in emerging markets due to the demand for luxury goods but as the majority of consumers in emerging markets cannot afford authentic luxury goods, they purchase counterfeit luxury goods in an attempt to attain the status they desire (Chand & Fei, 2021; Eisend Hartmann & Apaolaza, 2017; Saiipl, 2020).

Counterfeit luxury item/s are generally much cheaper than authentic items. They are purchased as they fulfil the consumer's functional need (e.g. status) at a fraction of the cost (Phau & Teah, 2009). However, counterfeits can destabilise industries and therefore threaten the global economy (Elsantil &

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Hamza, 2021; Wiedmann, Hennigs & Klarmann, 2017). To understand why consumers are attracted to counterfeit luxury items (other than price), it is important to understand their attitudes towards purchasing counterfeit luxury items. This is due to attitudes being a key consideration when consumers make purchasing decisions (Phau, Sequeria & Dix, 2009). By understanding attitudes, luxury brands will be in a better position to implement marketing strategies that dissuade consumers from purchasing counterfeit luxury items (Bhatia, 2017; Li, et al., 2020).

In order to understand how consumer's attitudes towards counterfeit luxury goods are formed, measuring the impact that social factors like normative susceptibility, informative susceptibility and collectivism have on attitude. This is due to a consumer's behaviour being guided by their need to conform to their social group (Khan, Faziili & Bashir, 2021). Normative susceptibility is focused on the consumer being influenced by the positive impression that they would like to make (Malla & Yukongdi, 2020) while informative susceptibility refers to the consumer being influenced by the expert opinions of others (Hidayat, Hema & Diwasasri, 2013). Collectivism focuses on an individual's desire to comply with their social group's expectations in order to secure acceptance (Tiessen, 1997). Therefore, normative and informative susceptibility as well as collectivism reflect both the consumer's need to comply with their social group's expectations (Ting, Goh & Isa, 2016). As the purchase of counterfeit luxury is driven by the need to be accepted, measuring social factors that take the external environment (e.g. social groups) into consideration will lead to a better understanding of how social groups influence attitudes. However, as consumers use counterfeit luxury goods to attain social status, the consumer's level of materialism is also important to understand. Materialism refers to "set of centrally held beliefs about the importance of possessions in one's life" (Richins & Dawson, 1992, p. 55). These beliefs have the ability to impact the purchase of possessions that consumers believe provide status (Park, Burns & Rabolt, 2007) such as counterfeit luxury goods. Due to this study's context, focusing on the impact of a consumer's materialistic views on their social factors and attitudes will reveal the role that materialism plays towards the attitudes toward counterfeit luxury goods.

Therefore, this study will determine the impact that social factors (e.g. normative susceptibility, informative susceptibility and collectivism) have on the attitudes towards counterfeit luxury goods and the role that one's level of materialism plays. The study will contribute from a theoretical perspective as majority of the research conducted on counterfeit luxury has been conducted in developed market contexts and focus on price as the motivation to purchasing counterfeit luxury (e.g. Bhatia, 2017; Hidayat & Diwasasri, 2013; Wang et al., 2020; Hussain, Kofinas & Win, 2017) and with the growth of counterfeit purchases in emerging markets like South Africa, understanding attitudes within a different context, where they may differ, is imperative. In addition, the study offers luxury retailers the opportunity to understand the consumer's attitudes towards counterfeit luxury items which may offer the opportunity to understand attitudes towards counterfeit luxury goods further and formulate marketing strategies that attract consumers to purchasing authentic luxury goods.

2. Problem Investigated

The demand for counterfeit luxury goods is simultaneous to the demand of authentic luxury goods (Li et al., 2020; Thaichon & Quach, 2016). The demand is especially prevalent in emerging markets, like South Africa, where consumers are concerned with their perceived status amongst their social group and aspire to purchase luxury goods to attain the desired level of status (Mahamba & Mashaba, 2018). However, given the expense associated with authentic luxury goods, consumers have turned to counterfeit luxury goods as an alternative (Chand & Fei, 2021). This, therefore, explains the demand for counterfeit luxury goods. This poses a threat to authentic luxury brands and the global economy as a whole as the production of counterfeits can lead to job losses, unpaid taxes, negative brand reputation and brand equity (Phau, Sequeria & Dix, 2009).

In order to deter consumers from purchasing counterfeits, determining their attitude towards counterfeit luxury goods is required. This is due to attitudes being a key driver to a consumer's behaviour and often result in a positive or negative outcome (Ting et al., 2016). Given the status-related motivation towards purchasing luxury, examining social factors' role in forming the attitude

towards counterfeit luxury would provide further insights. This is due to consumers wanting to conform to their social groups expectations (Larsen & Buss, 2005). From a counterfeit luxury context, the social factors that are the most prevalent in research include normative susceptibility, informative susceptibility and collectivism (Teah, Phau & Huang, 2015; Ting et al., 2016). In addition to social factors, including personality, which represents the internal influence, has also proven to be useful in counterfeit luxury research (Harun, Beldram, Suki & Hussein, 2012) where authors have found that the consumer's level of materialism has played a role in counterfeit luxury purchase (e.g. Kim & Karpova, 2010; Furnham & Valgeirsson, 2007; Phau et al., 2009). Ting *et al.* (2016) further motivates that consumers who are regarded as materialistic will purchase counterfeit luxury goods if they are not in a position to afford the authentic versions. This is owing to the fact that materialistic consumers are concerned with their position in society and rely on products to attain social acceptance (Phau et al., 2009).

Therefore, this study aims to determine how social factors (normative susceptibility, informative susceptibility and collectivism) impact the attitude towards counterfeit luxury goods and materialism's moderating effect. This will provide luxury brands the understanding of how consumer's attitudes towards counterfeits are influenced by social factors – other than price which has been a focus in other studies. This understanding will allow luxury brands to implement marketing strategies that deter consumers from purchasing counterfeits. From a theoretical perspective, the study will offer an understanding of emerging market consumer's attitudes towards counterfeit luxury goods and will demonstrate the effect that the level of materialism plays on the social factors and attitudes.

3. Research Objectives

The primary research objective is: to determine how social factors (normative susceptibility, informative susceptibility and collectivism) impact the attitude towards counterfeit luxury goods and the moderating effect of materialism.

In order to attain the primary objective, the following secondary objectives have been formulated:

- To determine the impact that normative susceptibility has on the attitude towards counterfeit luxury goods;
- To determine the impact that informative susceptibility has on the attitude towards counterfeit luxury goods;
- To determine the impact that collectivism has on the attitude towards counterfeit luxury goods; and
- To determine the effect that materialism has on the relationships between normative susceptibility, informative susceptibility, collectivism and the attitude towards counterfeit luxury goods.

4. Literature Review

This section presents a brief overview of the counterfeit luxury goods industry. This is followed by a discussion of the theories supporting the study and a discussion of the constructs and the proposed relationships, as shown in Figure 1.

4.1. Counterfeit luxury industry

The counterfeit industry has noticeably increased in demand over the past decade (Saeed & Paracha, 2019) and is evident in the ease of access to counterfeit items (Amaral, 2021). Counterfeit goods refer to “any unlawful product that violates intellectual property rights” (Babamiri, Moghadam, Saeidnia, & Zemestani, 2020) which are typically regarded as lower quality allowing for the lower price that consumers are attracted to (Jiang, Miao, Jalees & Zaman, 2019). In the luxury goods context, consumers are willing participants of purchasing counterfeits because they are well aware that what they are purchasing is not authentic and often poorer quality (Khan et al., 2021). As mentioned, globally the counterfeit industry has increased significantly over the past decade (Elsantil & Hamza, 2021:2). According to Fontana *et al.* (2019), the estimated figure of all counterfeit goods is over \$4.5

trillion, with counterfeit luxury goods accounting for 60-70% of this figure. This is an estimated figure due to the nature of counterfeit goods.

Manufacturers of the counterfeit luxury goods aim to replicate the authentic luxury brands and ensure that they resemble the authentic item as far as possible (Wang, Stoner & John, 2017). Eisend, Hartmann and Apaolaza (2017) add that luxury brands are a focus to these manufacturers because of the high price of authentic luxury goods. However, given the prices associated with authentic luxury goods, consumers turn to counterfeits to enhance their perceived status (Phau & Teah, 2009). The growth in the counterfeit luxury goods market is evident in emerging markets (Chand & Fei, 2021), like South Africa where lower levels of income purchase authentic luxury goods improbable. Therefore, as Eisend *et al.* (2017) suggests, these consumers turn to counterfeit luxury to attain their social acceptance and confirm their status amongst their social group.

4.2. Theory of Stimulus Organism Response (SOR) and Theory of Planned Behaviour (TPB)

The SOR proposes that a response is guided by a stimulus and organism (Moon, Javid, Kiran & Awan, 2018). Essentially, the stimulus refers to the mental and cognitive state of the organism which is affected by factors in the external environment and leads to a certain response (e.g. attitude in the case of this study). Within this study's context, the SOR is reflected in social factors' role on the attitudes towards counterfeit luxury goods. The SOR is commonly used in consumer behaviour research (Chopdar & Balakrishnan, 2020), however, the inclusion of attitude in this study is guided by the TPB. As proposed by Ajzen and Fishbein (1975), the TPB suggests that one's attitude, subjective norms and perceived behavioural control influence behavioural intention. Of the three proposed relationships, attitude is consistently found to have the greatest impact on behavioural intention (e.g. Quoquab, Pahlevan, Mohammad & Thurasamy, 2017:83; Das & Sabbir, 2019:224). Therefore, the inclusion of attitude as the response is guided by the impact that attitude can ultimately have on behaviour.

4.3. Attitude

Understanding the consumer's frame of mind towards a product, by understanding their attitude, is vital to understanding the likelihood of the product being purchased or not (Babamiri et al., 2020). This is due to the fact that a consumer's attitude is a key driver to decision-making (De Houwer, Gawronski & Barnes-Holmes, 2013). Therefore, if brands secure a favourable attitude, the consumer's likelihood of purchasing is far greater. This makes studies focusing on attitude valuable for marketers (Babamiri et al., 2020). Within a counterfeit luxury context, attitudes are driven by consumers' social pressures (Khan et al., 2021).

4.4. Social factors

Social factors refer to the effect that others have on an individual's behaviour (Phau & Teah, 2009) and are important when measuring attitudes because a consumer's attitude is often formed based on what their social group's regard as acceptable (Haslam, McMohan, Cruwys & Haslam, 2018). Consumers are susceptible to what their social group expects of them and will purchase products that allow for social acceptance (Ting et al., 2016). This is due to consumers using products to enhance their social image and status amongst their social group (Khan et al., 2021). Normative susceptibility, informative susceptibility and collectivism are the three factors used in this study. These factors are explained in more detail in the sub-sections that follow.

4.4.1. Normative susceptibility

Normative susceptibility is one of the three social factors included in this study and focuses on the consumer's need to make a purchase decision based on the expectation that the decision will provide a positive impression of themselves (Malla & Yukongdi, 2020). Generally, one's normative susceptibility is driven by the behaviour in their social group, making them susceptible to the behaviours within the group (Adiprima, Indraswari & Kasri, 2020). Therefore, consumers who demonstrate high levels of normative susceptibility would purchase products based on what other individuals expect them to purchase. Within a luxury context, consumers purchase luxury goods to impress their social group and in an effort to enhance their status amongst their social group (Kim & Karpova, 2010). This, in turn, would impact whether or not the consumer's attitude towards the product would be positive or negative (Kasuma, Noor, Abdurahman, Sawangchai & Jemari, 2020).

4.4.2. Informative susceptibility

The second social factor included in this study relates to information susceptibility. This refers to when consumers will base their decisions based on the opinions of others (Hidayat et al., 2013). These could include family members, the consumer's peers or reference groups (Phau & Teah, 2009). This becomes more prevalent when consumers are not very knowledgeable about a certain product category (Ting et al., 2016) – for example, within this study's context, the consumer may be more susceptible to information if they are not aware of the types of counterfeit luxury goods or where to purchase the most "authentic" types. As the purchase of counterfeits is regarded as a conscious decision (Moon et al., 2018), consumers will turn to the opinion of others to guide their decisions and ultimately form attitudes (Kasuma et al., 2020:236).

4.4.3. Collectivism

Collectivism is the third and final social factor included in this study. Collectivism relates to the consumer's desire to comply with their social group as opposed to differentiating themselves from their social group's norms (Tiesen, 1997). Within a collectivistic society, as many emerging markets are (Martinez & Jaeger, 2016), consumers regard social acceptance as very important and strive to achieve this acceptance by complying with social group norms (Kim & Yoon, 2021). Within the context of this study, consumers may turn to purchasing luxury as a way in which to conform to their social group's status expectations and may therefore form positive attitudes about purchasing counterfeits in order to achieve acceptance.

4.5. Materialism

Personality factors and attitude are closely related (Awang, Rahman, Ghazali, Ishak, Rahman & Sapiai, 2020). A consumer's personality includes personality traits that can influence their interactions and adapt to certain environments (Larsen & Buss, 2005). Within a marketing context, a consumer's personality has the ability to influence their purchasing and decision-making process. Kotler and Fox (1995) add that one's personality is a key driver to the formulation of an attitude due to the role that personalities play in deeming what is acceptable or not.

Although social factors influence attitude, a consumer's level of materialism is important to consider. Materialism focuses on the consumer's reliance on possessions, often used to communicate a certain message to a social group (Park et al., 2007). As luxury purchases are often driven by the need to communicate status (Jhamb et al., 2019), the consumer's reliance on their possessions (e.g. materialism) is implied. Although some authors (e.g. Belk, 1995; Richins & Dawson, 1992) report that materialism reflects negative attributes like greed, more contemporary research has focused on the positive behaviour that being materialistic offer – such as the desire to work harder and dedication in order to purchase the possessions desired (Karabati & Cemalcilar, 2010). Therefore, including materialism in this study relates to the context of the study and the role that being materialistic may have on the social factors towards attitude.

5. Hypotheses

The following hypotheses were formulated for the study:

- H₁: Normative susceptibility has a significant impact on the attitude towards counterfeit luxury goods
- H₂: Informative susceptibility has a significant impact on the attitude towards counterfeit luxury goods
- H₃: Collectivism has a significant impact on the attitude towards counterfeit luxury goods
- H₄: Materialism moderates the relationship between normative susceptibility and the attitude towards counterfeit luxury goods
- H₅: Materialism moderates the relationship between informative susceptibility and the attitude towards counterfeit luxury goods
- H₆: Materialism moderates the relationship between collectivism and the attitude towards counterfeit luxury goods

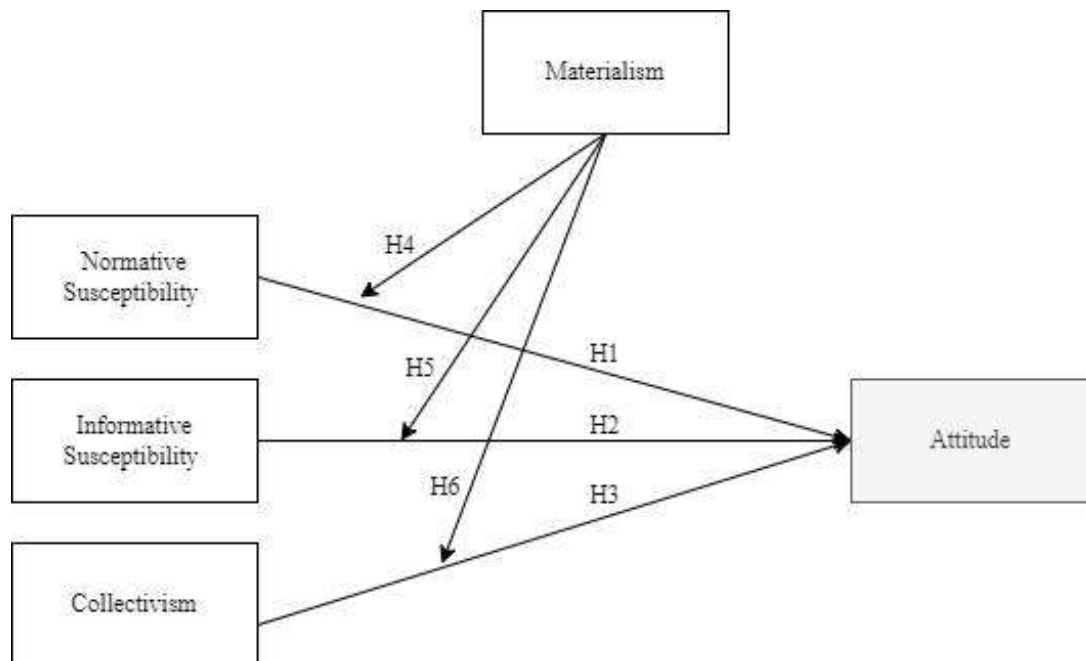


Figure 1: Conceptual model developed for the study

6. Research Methodology

This study was descriptive in nature as descriptive studies are used to determine patterns and trends (Burns, Veeck & Bush, 2017). In addition, the study followed a quantitative approach through a research survey. Self-administered research surveys were also used given the sensitivity of the topic – the purchase of counterfeits being illegal – and respondents being more likely to be honest without the potential influence of the researcher (Wiid & Diggins, 2017). Given the conceptual model developed for the study (as shown in Figure 1), the descriptive research design and quantitative approach was deemed the most appropriate.

The self-administered research survey was administered online through Google Forms and consisted of three sections: the preamble explaining the purpose of the study, the ethical considerations and obtaining the respondent's content to participate; the second section measured the respondents demographic profile and the third section measured the constructs presented in the conceptual model (normative susceptibility, informative susceptibility, collectivism, attitude and materialism). The constructs were adopted from previous study conducted by Teah *et al.* (2015) and were measured using a 5-point Likert-type scale.

This study's target population included consumers between the ages of 18 – 65 and who had either purchased or intended to purchase counterfeit luxury goods within the past six months. In order to reach the target population, non-probability, convenience sampling and snowball sampling was

deemed appropriate. Convenience sampling relates to the respondents being selected based on their accessibility whereas snowball sampling encourages respondents to indicate other potential respondents (Saunders, Lewis & Thornhill, 2016). Once the questionnaire was shared on Google Forms, 517 responses were retained for analysis.

Data was analysed using SPSS, version 28. Both descriptive and inferential statistics were used to analyse the data. The descriptive statistics included the frequencies (demographic variables) and descriptive statistics (constructs). In addition, the construct and their corresponding items were tested for reliability and validity by evaluating the Cronbach's Alpha coefficient values (α) and a Confirmatory Factor Analysis (CFA). Once the descriptive analyses were concluded, inferential statistics, specifically multiple regression (measuring the linear relationship between social factors and attitude) was conducted followed by moderation analyses to determine the effect that materialism has on the relationships between the social factors and attitude.

7. Results and Findings

This section presents the descriptive and inferential statistics conducted for this study.

7.1. Descriptive statistics

This section presents a description of the reliability and validity analyses; the demographic profile of the respondents and the descriptive statistics for each construct and their corresponding items.

7.1.1. Reliability and Validity

The constructs in this study had Cronbach Alpha coefficient values (α) of: 0.921 (normative susceptibility); 0.809 (informative susceptibility); 0.832 (collectivism); 0.707 (attitude) and 0.909 (materialism). Based on these values being above the 0.7 required, the constructs were regarded as reliable as Toklu and Baran (2017) suggest that values 0.7 and greater are considered valid and reliable. When conducting a CFA, Pallant (2016) suggests that the KMO value be above 0.6 and the Bartlett's test of sphericity be significant. The data revealed a KMO value of 0.922 and Bartlett's test of sphericity was significant ($p = 0.000$), verifying that the data was suitable for the factor analysis. The CFA resulted in a five-factor solution. Only Eigenvalues of above 1 were extracted and coefficients less than 0.3 were excluded. The five factors explained 65.2% of the variance. Thus, using the CFA, validity was confirmed.

7.1.2. Demographic profile

As shown in Table 1, of the 517 respondents, majority were females (54.4%) classified as Generation Y (42%) who have an undergraduate qualification (55.8%) and are employed on a full-time basis (64.4%).

Table 1: Demographic profile

Demographic variable	Category	Frequency	Percent
Age	Baby Boomers (1955 – 1964)	25	4.8%
	Generation X (1965 – 1980)	70	13.5%
	Generation Y (1981 – 1996)	217	42.0%
	Generation Z (1997 – 2012)	205	39.7%
Highest level of education	Matric	133	25.6%
	Undergraduate qualification	290	55.8%
	Postgraduation qualification	96	18.5%
Gender	Male	229	45.6%
	Female	273	54.4%
Employment status	Full-time employed	334	64.4%
	Part-time employed	52	10.0%
	Home executive	9	1.7%
	Retired	8	1.5%
	Self-employed	58	11.2%
	Unemployed	58	11.2%

7.1.3. Descriptive statistics: constructs and corresponding items

Table 2 reveals the descriptive statistics for the constructs included in this study. With regards to normative susceptibility, the overall mean was 2.789 (SD = 1.196) indicating that respondents disagreed with the statements relating to this construct. The lowest scoring item was “If other people can see me using a product, I often purchase the brand they expect me to buy” (mean = 2.66; SD = 1.475) and highest scoring item was “I like to know what brands and products make good impressions on others” (mean = 3.09; SD = 1.475). In terms of informative susceptibility, the overall mean was 3.378 (SD = 1.025) suggesting that respondents were neutral in their response to the items representing this construct. The lowest scoring item was “To make sure I buy the right product or brand, I often observe what others are buying and using” (mean = 3.10; SD = 1.424) and the highest scoring item was “If I have little experience with a product, I often ask my friends about the product” (mean = 3.67; SD = 1.202). The last social factor, collectivism, presented an overall mean of 3.160 (SD = 1.043) which indicated that as with informative susceptibility, respondents were neutral in their response to the items representing this construct. The lowest scoring item was “Being accepted as a member of a group is more important to me than being autonomous and independent from others” (mean = 2.81; SD = 1.410) and the highest scoring item was “Being loyal to a group is more important than individual gain” (mean = 3.54; SD = 1.323).

The attitude construct reported an overall mean of 3.163 (SD = 1.425) which indicated that respondents were neutral in their level of agreement towards this construct. The lowest scoring item was “Counterfeits of luxury brands are as reliable as the original version” (mean = 2.89; SD = 1.419) and highest scoring item was “Buying counterfeits of luxury brands damages interests and rights of legitimate/original manufacturer” (mean = 3.45; SD = 1.452). Lastly, the materialism construct reported an overall mean of 3.481 (SD = 1.031) which also indicated that respondents were neutral in their level of agreement towards this construct. The lowest scoring item was “The things I own say a lot about how well I’m doing in life” (mean = 2.93; SD = 1.441) and the highest scoring item was “I’d be happier if I could afford to buy more things” (mean = 3.94; SD = 1.180).

Table 2: Descriptive statistics for the constructs included in the study

Construct	Mean	Std. Deviation
Normative susceptibility		
I rarely purchase the latest fashion styles until I am sure my friends will approve of them	2.81	1.422
It is important that others like the products and brands I buy	2.80	1.148
When buying products, I generally purchase those brands that I think	2.71	1.439

Construct	Mean	Std. Deviation
others will approve of		
If other people can see me using a product, I often purchase the brand they expect me to buy	2.66	1.475
I like to know what brands and products make good impressions on others	3.09	1.475
I achieve a sense of belonging by purchasing the same products and brands that others purchase	2.69	1.496
I often identify with other people by purchasing the same products and brands they purchase	2.76	1.447
Overall score	2.789	1.196
Informative susceptibility		
To make sure I buy the right product or brand, I often observe what others are buying and using	3.10	1.424
If I have little experience with a product, I often ask my friends about the product	3.67	1.202
I often consult other people to help choose the best alternative available from a product class	3.45	1.269
I frequently gather information from friends or family about a product before I buy	3.28	1.239
Overall score	3.378	1.025
Collectivism		
Individual rewards are not as important as overall group welfare	2.92	1.338
Group success is more important than individual success	3.08	1.427
Being accepted as a member of a group is more important to me than being autonomous and independent from others	2.81	1.410
It is more important to encourage loyalty to the group rather than individual initiatives	3.45	1.240
Being loyal to a group is more important than individual gain	3.54	1.323
Overall score	3.160	1.043
Attitude		
Counterfeits of luxury brands provide similar functions to the original version	3.12	1.322
Counterfeits of luxury brands are as reliable as the original version	2.89	1.419
Buying counterfeits of luxury brands infringes intellectual property	3.36	1.443
Buying counterfeits of luxury brands damages interests and rights of legitimate/original manufacturer	3.45	1.452
Buying counterfeits of luxury brands will hurt the luxury goods industry	3.24	1.458
Purchasing counterfeits of luxury brands is illegal	2.92	1.460
Overall score	3.163	1.425
Materialism		
I admire people who own expensive homes, cars and clothes	3.19	1.367
The things I own say a lot about how well I'm doing in life	2.93	1.441
I like to own things that impress people	3.07	1.501
Products make my life comfortable	3.85	1.166
Buying things gives me a lot of pleasure	3.81	1.207
I like a lot of luxury in my life	3.47	1.433
My life would be better if I owned certain things I don't have	3.58	1.436
I'd be happier if I could afford to buy more things	3.94	1.180
It sometimes bothers me that I can't afford to buy all the things I'd like	3.50	1.434
Overall score	3.481	1.031

7.2. Results of the hypotheses developed for the study

H₁, H₂ and H₃ focused on the relationship between the social factors (normative susceptibility, informative susceptibility and collectivism) and attitude. The three hypotheses were tested using multiple regression analysis which revealed an R-squared value of 0.377 explaining 37.7% of the variance and the model was found to be significant ($p = 0.001$). H₁ tested the relationship between normative susceptibility and the attitude towards counterfeit luxury goods and the results revealed a significant relationship ($p = 0.001$; $\beta = 0.307$) which resulted in H₁ being accepted. H₂ tested the relationship between informative susceptibility and attitude towards counterfeit luxury goods, the results revealed an insignificant relationship ($p = 0.834$; $\beta = 0.011$) which resulted in H₂ being rejected. Lastly, H₃ tested the relationship between collectivism and the attitude towards counterfeit luxury goods and the results revealed a significant relationship ($p = 0.001$; $\beta = 0.141$) which resulted in H₃ being accepted.

H₄, H₅ and H₆ focused on the effect of materialism on the relationship between normative susceptibility, informative susceptibility, collectivism and attitude. The three hypotheses were tested using moderation analyses in SPSS. H₄ tested the moderating effect of materialism on the relationship between normative susceptibility and the attitude towards counterfeit luxury goods. The results revealed that materialism moderates the relationship ($p = 0.047$) and H₄ is accepted. H₅ tested the moderating effect of materialism on the relationship between informative susceptibility and the attitude towards counterfeit luxury goods. The results revealed that materialism does not moderate the relationship ($p = 0.154$) and H₅ is rejected. Lastly, H₆ tested the moderating effect of materialism on the relationship between collectivism and the attitude towards counterfeit luxury goods. The results revealed that materialism does not moderate the relationship ($p = 0.679$) and as a result, H₆ is rejected. The results of the study are shown in Figure 2.

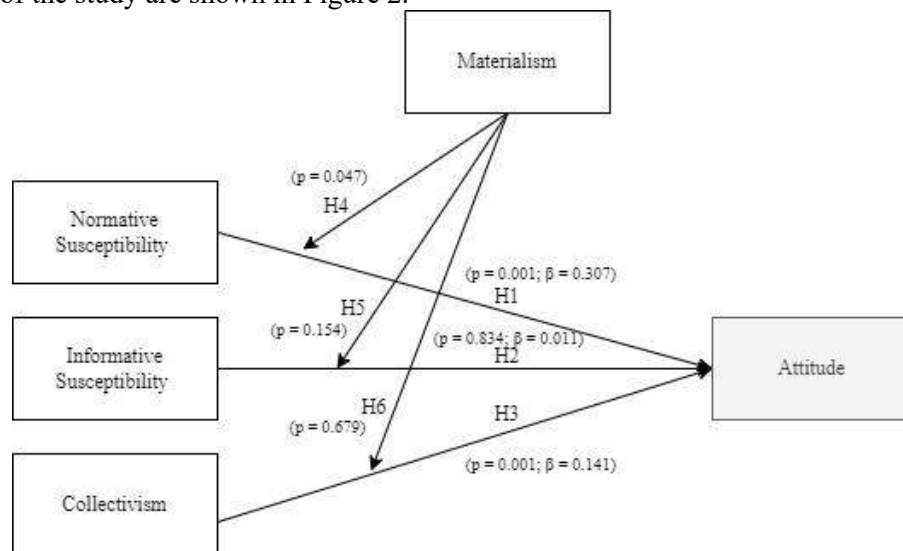


Figure 2: Conceptual model indicating the results

8. Managerial Implications

The results obtained in this study reveal that certain social factors have a significant impact on the attitudes consumer's form towards counterfeit luxury goods. The study revealed that normative susceptibility and collectivism significantly impact attitude towards counterfeit luxury goods, demonstrating that consumers are concerned with the impression they make on their social group and their acceptance within the group (Phau & Teah, 2009). Therefore, consumers may form positive attitudes towards luxury goods if they believe as though it would provide them the status they desire but turn to counterfeits due to their affordability. As social acceptance is important, authentic luxury brands should develop marketing strategies that firstly, encourage consumers and their social groups to purchase authentic luxury goods by emphasising the negative consequences of purchasing counterfeit (e.g. embarrassment). This would ensure that consumers are deterred from purchasing counterfeit luxury goods, as they are aware of the negative consequences that they may face if their

social group becomes aware of the purchase (Ting et al., 2016). Secondly, marketers of luxury brands should consider introducing an “affordable luxury” line within their product offering. Although these may be smaller pieces (e.g. a scarf, belt, wallet), it would still offer the consumer the opportunity to purchase the authentic brand and therefore uphold the brand’s image (Ting *et al.*, 2016). This is motivated by the fact that consumers generally purchase counterfeit luxury goods due to their affordability (Chand & Fei, 2021).

The study revealed that informative susceptibility does not significantly impact the attitude towards counterfeit luxury goods. This could be explained by counterfeit purchases being illegal and consumers being reluctant to approach experts or friends and family for their opinions (Ting et al., 2016). This finding could also support the recommendation mentioned above, as consumers may be reluctant to risk their social group knowing that they have purchased a counterfeit luxury item. Therefore, luxury brands should continuously remind consumers of the potential negative consequences of purchasing counterfeits – focusing on the possible rejection received from a consumer’s social group. Kasuma et al., (2020:238) adds that authentic luxury brands should be engaged in educating consumers about the advantages of purchasing authentic versions and the disadvantages associated with purchasing counterfeits.

Lastly, the study showed that materialism moderated the relationship between normative susceptibility and attitude but not the relationships between informative susceptibility, collectivism and attitude. This offers luxury brands the opportunity to leverage off consumers who are materialistic and seek social acceptance. The more materialistic consumers are, the greater their susceptibility to form positive attitudes towards counterfeit luxury brands, as they want to infer a positive impression on their social group and attain acceptance. This suggests that materialistic consumers would be more likely to purchase counterfeit luxury goods after forming positive attitudes (Phau et al., 2009).

This study focused on the attitudes that consumers have towards counterfeit luxury goods, luxury brands can in summary:

- Focus on the potential social acceptance when purchasing authentic luxury goods, in comparison to the potential negative consequences when purchasing counterfeits (e.g. social rejection, embarrassment);
- Consider offering an “affordable” range within the product line to allow for the luxury brand to remain accessible to consumer’s who might want to purchase the authentic product but are unable to purchase the more expensive items sold by the luxury brand; and
- Ensure that the marketing messages used by luxury brands promote the purchase of authentic luxury goods by focusing on social groups within the marketing messages.

9. Conclusion

This study found that a consumer’s need to obtain acceptance from their social group (normative susceptibility) had an impact on the consumer’s attitude towards counterfeit luxury goods. This demonstrates the social motivation behind counterfeit luxury purchases as consumers want to purchase authentic items but are restricted by their high costs (Chand & Fei, 2021). By understanding the social motivation, through the susceptibility of the group’s norms and the need to conform with the social group, luxury brands can develop marketing strategies that deter consumers from purchasing counterfeits due to the potential negative consequences that they might face within their social group. This is supported by the study demonstrating that consumers do not approach those they consider experts (e.g. friends and family) as they are perhaps aware of the social risk of purchasing counterfeit luxury goods. Thus, if authentic luxury brands ensure that their marketing messages relate social acceptance through the purchase of authentic items, it may result in consumers being deterred from purchasing counterfeit luxury goods. This should be an ongoing strategy seeing the potential negative outcomes that counterfeits have on the luxury goods industry – e.g. job losses; negative brand reputation and potential loss of brand equity (Phau et al., 2009).

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Intention to Adopt Green Vehicles Using The Antecedents of TPB and Types of Value: A Predictive Model

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Keywords

Green vehicles,
Behavioural intention,
Hedonic Value,
Customer Value

Abstract

This research study aimed to investigate the intention to adopt green vehicles using the antecedents of the theory of planned behaviour and types of value (a predictive model). This research study used a structured questionnaire with 299 respondents in Gauteng, South Africa. A multiple regression analysis was used to test the proposed hypotheses. The findings examined the insignificant relationship between perceived behavioural control and behavioural intentions. The results of this study indicate that the proposed conceptual model provides a well-grounded explanation of consumers' behavioural intention toward purchasing green vehicles. The results also emphasise that consumers respond more favourably to the addition of hedonic value as an extended construct in the TPB model, and thus their intention – and its adoption – to purchase a green vehicle. Owing to the Covid-19 pandemic, an online convenience sampling was used to adhere to social distancing rules and limit contact between the researchers and participants. This limited the possibility of distributing the questionnaires in public areas in Gauteng and resulted in a limited sample from which to collect data, only individuals with access to the internet. However, this study encourages the purchase of green vehicles if governments initiate and implement policies for the adoption of green vehicles. This study also provides environmentally friendly vehicle manufacturers and marketers with strategies that promote and encourage the adoption of green vehicles. Currently, limited research investigates consumers' behavioural intentions to adopt green vehicles.

1. Introduction

Research has shown the correlation between the increase in combustion- or fossil-fuelled vehicles and climate change (Shalender & Shama, 2021). Climate change has been identified as an issue that threatens society, and different sectors have come up with solutions to combat this phenomenon. The automotive industry has been no different through its introduction of green vehicles and has agreed with the notion of green vehicles being a solution to climate-change-related problems by replacing conventional vehicles (Perujo, Thiel & Nemry, 2011). European Environment Agency (2021) supports this statement, stating that green vehicles are more efficient than conventional vehicles, as their energy is used in the battery used to drive the car and wastes less energy when driving in cities. Statistics also show an increase in the uptake of green vehicles. According to Kopestinsky (2021), green vehicles make up about three per cent of global car sales; green vehicles are expected to reach 10 per cent of global passenger car sales by 2025 and to increase to 28 per cent by 2030 and 58 per cent by 2040. Moreover, there are predictions that the availability of green vehicles globally could rise to 145 million by 2030 (IEA, 2021).

Green vehicles – green products marketed through green marketing by different organisations – have seen steady growth in sales because environmentally conscious customers want to buy green brands (Papista, Chrysochou, Krystallis & Dimitriadis, 2018:101). However, this increase is still slow, as adoption faces different barriers; the growth is generally not enough to offset the impact of conventional vehicles' degradation on the environment (Hamilton & Terblanche-Smith, 2018:2). The lack of speedy adoption by customers has been highlighted as one of the reasons for the availability of green vehicles (Hur, Kim & Park, 2013:146). A 2008 survey showed that 69 per cent of US customers

had little or no knowledge about green vehicles (Wang, Yu, Yang, Miao & Ye, 2017), thus making it hard for people to adopt green vehicles.

2. Problem Investigated

Studies investigating green vehicle adoption have been limited (Rezvani, Jasson & Bodin, 2015; Patella, Grazieschi, Gatta, Marcucci & Carrese, 2020). Nonetheless, some studies have investigated green vehicles adoption, drivers of the adoption of electric vehicles (Kim & Heo, 2019), promotion of alternative fuel vehicles using fiscal policies (Li & Xing, 2018), the use of analytics in aiding the buy more green vehicles (Reich, Winkler, Klampfl & Olson, 2015) and lastly, While Guan Zhang, Liu, Tan and Wu (2016) studied how new energy-saving vehicle buyers behave. As shown above, along with some of the key studies on green vehicles, this study intends to fill the gap by studying the role of hedonic and customer values, attitudes, subjective norms, and behavioural intention in adopting green vehicles. This is demonstrated by the lack of study regarding the role of values in the purchase of green vehicles.

Several studies have researched the different barriers – technological, social, economic and political – to the adoption of green vehicles (Adhikari, Ghimire, Kim, Aryal & Khadka, 2020). However, Jain, Rose and Johnson (2021) highlighted that psycho-social factors play a critical role in the adoption of new technologies such as green vehicles. A few studies have used psycho-social factors to understand green vehicle adoption (Jain, Rose & Johnson, 2021), thus identifying a research gap that this study intends to close.

This study seeks to assess the adoption of green vehicles by extending the TPB developed by Ajzen (1985) by customer value and hedonic value constructs as determinants of green vehicle adoption. Therefore, the extension of the empirically tested TPB model is intended to provide theoretical contributions and assist managers in determining the factors that affect the adoption of green vehicles. This study also aims to determine the role that customer value, hedonic value, and the determinants of behavioural intention highlighted in the TPB have in influencing the adoption of green vehicles.

3. Research Objectives

- To explain how customer and hedonic values and other TPB determinants influence behavioural intention.
- To investigate the types of values that influence customer intentions to purchase green vehicle brands,
- To understand the extent to which subjective norms, attitudes and PBC influences behavioural intention towards green vehicles.

4. Theoretical/conceptual background, conceptual model, and formulation of hypotheses

Theoretical framework

The underlying theoretical model for this study is the theory of planned behaviour (TPB) (Ajzen, 1985). In this study, to understand fully the motives that define a customer's behaviour, we use the TPB to understand the drivers that lead a customer's behaviour to adopt green vehicles. TPB was developed by Ajzen (1985) as an extension of the theory of reasoned action by adding perceived behavioural control as a variable in the model (Chen & Deng, 2016:1748). TPB, according to Shalender and Sharma (2021:667), has been used to investigate the intentions of customers to act in a specific way, as well as their buying behaviour with environmentally friendly products. Behavioural intention is motivated by attitude, social or subjective norms, and perceived behavioural control, which are all interconnected (Dilotsotlhe & Inseng, 2020). TPB has proven to be an excellent theory to ground robust arguments about green purchase intentions (Papista & Krystallis, 2013; Shalender & Sharma, 2021; Sniehotta, Presseau & Araújo Soares, 2014; Dilotsotlhe & Inseng, 2020; Yadav & Pathak, 2017). This theory is mainly used in environment-focused studies, as environmentally responsible human behaviour is revealed by people's attitudes, subjective norms and values about green brands. That said, a customer value model will be used as an extension of TPB, as our constructs are linked to individuals' values and how values influence the intention to perform a

specific behaviour. The customer value model developed by Sheth, Newman and Gross (1991) will be used in the study, especially the value dimension of 'hedonic value', to understand the broad relationship a customer has with a brand, as this value is considered to be a high-order construct.

Attitudes

Attitudes have been empirically tested in many studies. According to Chen and Deng (2016:2), attitudes are an individual's negative or positive assessment of a particular behaviour. Hamilton and Terblanche-Smith (2018) state that attitudes play a critical role in the performance of the behaviour, but they emphasise positive attitudes. Attitudes can come in the form of environmental attitudes, such as the assessment that conventional vehicles are not suitable for the environment while green vehicles are good for the environment. In his seminal model, Ajzen (1991) states that the TPB describes a person's behavioural intention and is influenced by attitudes (Bouarar & Mouloudj, 2021:644). Many studies have sought to understand the relationship between the attitude to green products and the intention to purchase green products (Mkhize, 2021; Mkhize & Ellis, 2018). Chen and Deng (2016:2) found that environmental attitudes positively impact ecological behaviour. Similarly, Jayaraman, Yun, Seo and Joo (2015:306) found a positive relationship between attitudes and the intention to buy green vehicles.

Therefore, this study posits that:

H1: A positive and significant relationship exists between attitudes to purchasing green vehicles and behavioural intentions.

Perceived behavioural control and behavioural intentions

Perceived behavioural control (PBC) is a construct that addresses factors that hinder or motivate action by the customer's ability to perform a task efficiently (Mohiuddin, Mamun, Syed, Masud & Su, 2018:5). The ease with which a specific behaviour is carried out is relatively associated with the likelihood that the customer will demonstrate purchase intentions (Shalender & Sharma, 2021:669; Ajzen, 1991:183). Yadav and Pathak (2017:155) state that behavioural intentions to purchase a green brand are associated with the characteristics of TPB constructs. Therefore, the higher the level of PBC as TPB constructs, the greater the likelihood of a customer purchasing a green brand. This study thus proposes that:

H2: PBC has a positive and significant relationship with the individual's behavioural intention to purchase a green vehicle.

Hedonic value

Hedonic value relates to the product offering's ability to evoke customers' emotions and feelings through different stimuli. This value might derive from customers' comfort and experience with the product (Banyte, 2012). Green products might elicit feelings of doing good, and customers might gain pleasure from the looks, attributes and features of the environmental offerings (Papista et al., 2018). According to Papista and Krystallis (2013), this value is created from customers' pleasure in their consumption experiences. Therefore, this study posits that:

H3: Hedonic value has a positive and significant influence on behavioural intention.

Subjective norms

Subjective norms are the belief that a more significant person or a mass of individuals will accept and keep up certain behaviours (Al-Swidi, Huque, Mohammed, Hafeez & Shariff, 2014). Subjective norms are the social views that pressure the individual to carry out or not carry out a behaviour (Chen & Deng, 2016), elaborating on the aspect of an individual's to perform specific actions. People are influenced by the collective to which they are exposed, showing how particular actions become standard due to that exposure. 'Behavioural intention' can be defined as a sign of one's willingness to act out a given behaviour (Yadav and Pathak, 2017). Customer value is the added benefit that the individual receives from using a given product. Customer value recognises that various factors encourage or discourage customers from adopting green brands (Papista et al., 2018). Behavioural intention is a product of three elements: attitude to the behaviour, perceived behavioural control, and subjective norms are interconnected (Dilotsotlhe & Inseng, 2020). The TPB reveals one's behavioural

intention to engage or not engage in a particular behaviour, and that intention is a critical factor in causing that action (Dilotsotlhe & Inseng, 2020). This indicates that specific customer actions do not always originate with the customer, but another individual might influence them to carry out certain purchases.

As a result, the prediction that can be formed for this construct is that:

H4: Subjective norms have a positive and significant relationship with behavioural intentions towards purchasing green vehicles.

Customer value

According to Papista et al. (2018:102), customer value is a product or service evaluation based on what the customer receives or gets. Customers who care about the environment buy green products to protect it (Barcu & Seda, 2013). The literature shows that customers who value the environment have the behavioural intention to purchase green brands (Papista & Krystallis, 2013; Hamilton & Terblanche-Smith, 2018).

Perceived value is critical today, as more businesses can increase customers' buying intention through a product's value (Steenkamp, 2006). Doszhanov and Ahmad (2015:4) argue that 'green perceived value' is vital for customers to make green choices. In contrast, 'green buying intention' is a significant part of green-buying customers' behaviour because it shows the intention to purchase a product that has value for the customer (Liao, Wu and Pham, 2020:4). Therefore, this study posits that:

H5: Customer value has a positive and significant relationship with customers' buying intentions to use green vehicles.

5. Literature Review

The value of the green market worldwide is currently about USD 4 trillion – a rise from 2009, when it was roughly USD 200 billion (Mkhize & Ellis, 2020:3). The world has become more aware of products that are environmentally friendly and that offer significant benefits to the environment. The emergence of green vehicles has changed the automobile industry contributing to decreasing pollution. This section attempts to build on earlier research by assessing the literature that focuses on green customer behaviour and green consumers.

5.1 Green customer behaviour

Understanding green customer behaviour is crucial for both businesses and the environment. Green customer behaviour is defined as a behaviour that an individual regards as an environmental consideration when buying or consuming a product that will cause less harm to the environment (Lakra, Bedi & Gupta, 2014:5). It refers to customers' concerns about society and not just the individual's needs and wants. Bakhtvar and Piri (2021) found that green customer behaviour contains three assertive themes; assurance/reliability, customer indecision, and similarity. To some customers, green brands may be seen as deceiving. However, customers' behaviour regarding green brands also raises the concern that some companies misinform their customers and are not truthful about the implications of environmental products (Bakhtvar & Piri, 2021).

Green customer behaviour is classified into two categories: the first aims to avoid the depletion of energy resources (curtailing practices), and the second involves environmental buying decisions (green buyer behaviour such as green vehicles) (Migheli, 2021). For instance, Jansson, Marell and Nordlund (2010:359) state that curtailing practices are done daily and tend to impact the environment substantially. They add that eco-friendly buying encourages individual customers to invest more in efficient restructuring to decrease the impact on nature.

Green customers tend to evaluate products using a close inspection. They will look for terms such as 'durable', 'eco-friendly', 'reusable', 'biodegradable', and 'compostable' (Jeevan, 2014:12). A study of customer preferences examined the characteristics of the ecological concern of different customers (Kirmani & Khan, 2016:161). When an individual has a positive attitude to perform a behaviour, they

are more likely to achieve specific behaviour (Hamilton & Terblanche-Smith, 2018:2). A previous study of green purchasing proposed that customers' pro-environmental optimism, natural responsiveness, and green acquired behaviour are determined by social customs, forgotten beliefs, attitudes, and an understanding of the environment (Khare, 2015:311).

Furthermore, a study has applied attitude models in explaining the effect of norms, the impact of social domination, and green behavioural control (Khare, 2015:311). According to Joshi and Rahman (2015:131), the attitude behaviour factor model helps researchers to acknowledge human actions better, in which – according to the model – customer green behaviour is not determined by attitudes only but also by contextual elements. Tu and Yang (2019:5) argue that the theory of reasoned action and the theory of planned behaviour of individuals are determined by the customer's behavioural intention, which influences an individual's attitude and subjective norms.

Green customer behaviour is driven by a customer's knowledge, especially about environmental challenges (Noor, Kasim, Mat & Mat, 2012:59). Customers who are more knowledgeable about environmental challenges are more likely to buy green brands (Darnall, Pointing & Brust, 2012:288). A study conducted in India by Narula and Desore (2016:12) showed that consumption value influences green consumer behaviour toward green brands. In addition, Jeevan (2014:13) argues that green consumer behaviour is driven by individuals with sincere intentions and sufficient knowledge to practise a green lifestyle. These characteristics of green customer behaviour could be translated into individuals adopting green vehicles.

Last, green customer behaviour is led by green customers who are growing in number as customers choose green lifestyles.

6. Research Methodology

This study used a descriptive research method to answer the questions of who, what, where, when, why and how in a given situation (Zikmund, Babin, Carr & Griffin, 2013). Its primary objective is to describe a particular subject matter, which can be salespeople, customers, market areas, or organisations (Malhotra, 2015:87). This study aimed to describe the intention to adopt green vehicles using the antecedents of TPB and types of value. In this study, data was collected from a large target population.

A cross-sectional, self-administered questionnaire was distributed to each respondent via an online electronic channel – Google Forms. This data collection technique allows for a greater variety of respondents (different age brackets and race groups), thus increasing the overall validity and reliability of the collected data (Burn & Bush, 2010:319). For further validation of the survey, the cross-sectional self-administered survey was tested using a sample of 30 respondents who were not included in the final results. Completing the data collection and coding process initiated the data analysis using Statistical Package for Social Sciences (SPSS) version 27 to develop the measurement and structural models. SPSS allowed for descriptive statistics, a range of regression modelling, factor analysis, one-way ANOVA, and equation modelling to develop potential variable associations. This helped to develop accurate statistical data that was instrumental in understanding the role of attitudes, perceived customer effectiveness, subjective norms, and types of value in influencing green vehicle adoption. The results present the views of the 299 respondents.

7. Results and Findings

Table 3: Cronbach's alpha

Construct	Number of items	Cronbach's alpha
Behavioural intention	4	0.935
Customer value	3	0.864
Hedonic value	3	0.917
Subjective norms	3	0.921
Perceived customer behaviour	2	0.667
Attitude	3	0.875

Zach (2021) states that Cronbach's alpha values ranging from 0.6 upwards are satisfactory when computing the internal reliability of an item. However, a score below 0.6 would be poor and, in some instances, unacceptable. All the scores in this study were above 0.6.

Multiple regression analysis

A multiple regression analysis was carried out to assess whether there was a significant relationship between the dependent and independent variables, and then to interpret what was found. The ANOVA table analysis examined the effect of one or more components by comparing mismatched samples (Mishra, Singh, Pandey, Mishra & Pandey, 2019). The p value of the ANOVA analysis in Tables 1 and 2 was 0,000, which was regarded as acceptable, as it was below the threshold of 0.05.

This section covers the multiple regression analysis that tested the study's hypotheses. The findings are presented below in Table 4.

Table 4: Multiple linear regression analysis: TPB without the extended model constructs

Dependent	Behavioural intention					
Independent	Attitude, perceived behavioural control, and subjective norms					
	Unstandardised		Standardised			
	Beta	Std. error	Beta	t	Sig	VIF
Constant	-.322	.227		-1.418	.157	
Attitudes	.840	.047	.742	17.744	.000	
PBC	.072	.043	.058	1.681	.094	
Subjective norms	.134	.038	.133	3.557	.000	
Equation						
R	.858					
R-squared	.738					
F	274.631					

Table 4 shows the study's model fit using only the TPB determinants as the underpinning model. This was done to contrast it with the conceptual model of this study to ascertain whether there was an improvement in the variance with the two additional constructs added to the conceptual model. Table 4 shows the multiple linear regression findings of the tested R-squared, dependent, and independent variables. The R-squared evaluates the effect of the correlation between the model and the dependent variables through a convenience scale of 0–100 per cent (Karch, 2020). The R-squared score was 0.738, or 74 per cent, which proved that the model was reliable and relevant. According to Smith (2021), a low R-squared would mean that the strength of the tested relationship is weak, whereas a high R-squared would mean that the strength of the tested relationship is strong. Analysis showed the

relationship between attitudes (H1), PBC (H2), and subjective norms (H4) on the one hand with behavioural intentions on the other, which were the base constructs of our theory (TPB). The findings showed that attitudes had a positive and significant relationship with behavioural intention, with a level of significance of 0.000 ($p < 0.05$). Perceived behavioural control (PBC) proved to have a weak and insignificant relationship with behavioural intention; the level of significance was 0.94 ($p > 0.05$). H4 (subjective norms) also displayed a positive and significant relationship with behavioural intention, with a level of significance of 0.000 ($p < 0.05$).

Table 5: Multiple linear regression analysis: Attitude, perceived behavioural control, subjective norms, hedonic value, customer value

Dependent	Behavioural intention					
Independent	Attitude, perceived behavioural control, subjective norms, hedonic value, customer value					
	Unstandardised		Standardised			
	Beta	Std. error	Beta	T	Sig	VIF
Constant	-.512	.215		-2.379	.018	
Attitudes	.671	.057	.592	11.780	.000	
PBC	.040	.042	.032	.951	.342	
Subjective norms	.067	.037	.067	1.807	.072	
Hedonic value	.011	.058	.009	.191	.849	
Customer value	.301	.049	.027	6.146	.000	
R	.877					
R-squared	.769					
F	195.041					

With the extension and the inclusion of customer value and hedonic value in the TPB, there was an increase in the R-squared from 0.738 (74 per cent) to 0.769 (77 per cent), which validated the reliability of the proposed model. This meant that customers responded more positively to the addition of customer value and hedonic value as extended constructs in the TPB model to determine their adoption of and intention to purchase a green vehicle (Papista *et al.*, 2018).

After a re-test analysis of the new model, attitudes (H1) showed that there was still a positive and significant relationship with behavioural intention, achieving the highest score among the independent variables of 0.00 ($P < 0.05$). Majchum, Parichatnon and Peng (2016:4) argue that a positive correlation between attitudes and behavioural intentions has been proven in several cultures, and that attitudes play a key role in predicting the intentions of customers to purchase green products. In a study by Mohiuddin *et al.* (2018:18), attitudes proved to be a highly significant construct ($p < 0.05$). This proved and supported a positive and significant relationship, as our study had hypothesised. Perceived behavioural control (H2) still showed no effect on customers' behavioural intention to purchase a green vehicle. This related to the fact of insufficient information and resources such as time, money, and knowledge, and the limited availability of green vehicle models, making it difficult for customers to convert their perceived behaviour into actual behaviour. According to Ajzen (1991:184), PBC may not be a sufficient construct to use when a person has relatively little knowledge, information, or resources to shape their behaviour; hence the rejection of the construct by South Africans in this study who did not have sufficient information about green vehicles. Hedonic value (H3) showed an insignificant relationship with customers' intentions to purchase a green vehicle. This study investigated the effects of hedonic and utilitarian value on creating customer satisfaction, resulting in behavioural intentions. Subjective norms (H4) was insignificant at 0.072 – slightly above 0.05 – suggesting there was possibly a slightly positive relationship. That somewhat insignificance could have been because the influences were not exposed to green vehicles, the functional attributes did not

meet expectations, and there was a lack of credible social influence, as stated by Shalender and Sharma (2021:668) and supported by Yadav and Pathak (2017:115). Customer value (H5) and behavioural intention proved that there was a significant and positive relationship, as the level of significance was less than 0.05, which was the highest. This was because customer value was directly related to positive behavioural intentions: customers used their emotions in making decisions that resulted in ultimate satisfaction.

Therefore, H1, H4, and H5 had a strong and significant relationship with behavioural intention, while H2 and H3 revealed no effect or a low level of significance in influencing behavioural intention. In conclusion, based on Table 5, the tested hypotheses and relationships that could be accepted – because their level of significance was below 0.05 ($p < 0.05$) – were H1 and H5.

Table 6: Hypotheses accepted or rejected

Hypothesis	Accepted/Rejected
H1 Attitudes and behavioural intentions	Accepted
H2 PBC and behavioural intentions	Rejected
H3 Hedonic value and behavioural intentions	Rejected
H4 Subjective norms and behavioural intentions	Rejected
H5 Customer value and behavioural intentions	Accepted

8. Discussion & Managerial Implications

A multiple regression analysis was conducted, and the results showed how attitudes, perceived behavioural control, hedonic value, subjective norms, and customer value contributed to influencing customers' behavioural intention to purchase a green vehicle. The results of the analysis are discussed below.

The testing of the relationships showed that customers had a positive attitude towards the behavioural intention to purchase a green vehicle in South Africa. Thus hypothesis H1 was positive and could be supported. Zhang et al. (2019) state that attitude is a significant and necessary construct in predicting customers' behavioural intention to buy green vehicles. This is in line with the studies of Mamun, Masud, Fazal and Muniady (2019) and of Sajeewanie, Yajid, Khatibi, Azam and Tham (2019), who also discovered that customers' attitudes towards environmentally friendly vehicles were positive because they were environmentally conscious, showing thereby a strong commitment to buying a green vehicle. Customers' attitudes can continue to develop over time when given the chance to participate in this behaviour (Massoules, 2019).

Based on our primary research, several respondents clearly indicated that green vehicles are the future. Marketers might need to develop more strategies to encourage green vehicle adoption that shapes customers' attitudes. This also confirmed the study's hypothesis that customers feel that buying a green vehicle is a good choice, and that a green vehicle purchase will result in environmental sustainability and help to reduce environmental degradation.

The analysis also showed that perceived behavioural control has an insignificant relationship with behavioural intention. This, however, contradicted the study by Sharlender and Sharma (2021), which showed that customers in India had a positive intention to buy green vehicles, as they felt that it would be easy for them to buy and maintain such vehicles. This meant that our study's respondents felt that green vehicles were expensive and difficult to use, and that they had limited access to and knowledge about those vehicles. Car dealership managers and the government will have to introduce efficient measures to entice people to buy green vehicles and offer them incentives in the form of tax rebates when purchasing a green vehicle in South Africa.

The results also proved that hedonic value does not significantly contribute to customers' intentions to buy green vehicles. The results of this study were consistent with those of Hanzaee and Rezaeyeh (2018), who also found that the hedonic value that is derived from buying a green vehicle did not necessarily influence respondents' behaviour in intending to purchase a green vehicle. Subjective norm, when tested, was shown to have an insignificant relationship with customers' behavioural intentions to purchase a green vehicle. These results differed from those of Hamilton and Terblanche-Smith (2018), who proved that subjective norms have a major influence on customers' behavioural intention to purchase a green vehicle. Nonetheless, the respondents in our study experienced little social influence to purchase a green vehicle, as most people still did not know about green vehicles and had little exposure to them, and some did not have anyone within their circle who owned a green vehicle; hence the rejection of the hypothesis. This finding was also made by Yadav and Pathak (2017), thus supporting the rejection of this hypothesis. The results revealed that social influence works in certain product categories but is not effective with energy-saving or green vehicles.

Customer values, after being measured, showed a significant relationship with the respondents' behavioural intentions to buy a green vehicle. The respondents felt that a green vehicle would bring about change in the environment, that a green vehicle was worth buying, and that it would contribute significantly to the satisfaction of their needs. Papista et al. (2018) also found that a strong acceptance of customer value contributed to customers' intentions to behave positively in buying a green vehicle.

This research intended significantly contributes to both managerial practice and the academic literature. So the next section covers the envisaged theoretical and managerial contributions of this research.

8.1 Theoretical significance

This research sought to contribute to the literature by validating that study's conceptual model was underpinned by the well-researched TPB model and types of value. There was a conceptual validation, with the $R^2=0.769$ indicating a very high R^2 . In addition, this study sought to validate the model with high-end green consumption products –namely, green vehicles. Furthermore, while value significantly contributes to customers' behavioural intentions, a limited number of studies have sought to understand its role in high-end green consumption products such as green vehicles. Therefore, by applying the proposed conceptual model, this research aimed to understand the part of the customer and hedonic value in customers' behavioural intention towards green vehicle brands.

The conceptual model is a key driver that contributes significantly to knowledge. It is better understood what influences individuals to purchase or adopt green vehicles. This will give marketers clear insight into how to go about encouraging individuals to adopt green vehicles.

8.2 Managerial/practical significance

The managerial implications of this study were drawn from the results after analysing the primary data obtained from the respondents. This study aimed to prove significant and positive relationships of the independent variables with the dependent variable; however, positive relationships were established between attitudes and customer values about to behavioural intentions, and negative relationships were established between perceived behavioural intention, subjective norms, and hedonic value's influence on behavioural intention. The managerial implications of these positive or negative relationships are discussed below, along with recommended strategies to assist decision-makers to work out their implications.

The positive and negative relationships established after the multiple regression analysis test will assist marketers, government, green vehicle manufacturers, and car dealerships to formulate feasible strategies to attract, encourage, and motivate South African customers more effectively to buy green vehicles. Customer value is a key element in formulating good marketing, and it is what matters most to the customer; thus it will allow marketers to focus on delivering it. Also, looking at the insignificant relationship of perceived behavioural control, hedonic value, and subjective norms,

marketers should consider customer value and attitudes to the adoption of green vehicles and lead customers to believe that their choice is consistent with their behavioural intention.

Green vehicle manufacturers, car dealerships, and the Department of Trade, Industry and Competition should ensure that more new models are produced, technological advances are introduced, and various makes of green vehicle are made available. Marketers also need to capitalise on approaches that use customer value and attitudes, as these constructs had the most positive relationship with behavioural intentions. This can be done through genuine testimonies or good word-of-mouth. To encourage the purchase of green vehicles, governments could initiate and implement policies for green vehicle adoption. Better awareness and understanding of customers' preferences for green vehicles could make it easy for these policies to be effective and well-organised. Furthermore, Zhang et al. (2019) state that more attempts should be made to improve customers' environmental concerns. This could be done by introducing relevant eco-friendly security policies and procedures, encouraging more intense media support for environmentally friendly awareness, and improving the public's consideration of green safety policies and guidelines. This would give representatives, businesspeople, and dealers greater insight into how to win the attention of customers concerning environmental protection and to stimulate their intention to buy green vehicles (Zhang et al., 2019). Through the media, efforts could be made to promote green vehicles by emphasising their convenience, usefulness, and functionality along with their benefits for the environment; this would help customers to understand how green vehicles operate, and influence their perceptions of green vehicles because positive attitudes towards green vehicles stimulate purchase intentions.

Campaigns could also be used to show how a number of customers have adapted to green vehicles. If green vehicles were easily accessible, purchase intention would increase. Through more campaign strategies, car dealerships could make it easy for customers to access green vehicles by using displays, promotional messages, advanced technologies, and discounts, and by setting up strong slogans to influence purchases.

The number of green vehicles has increased in different countries in recent decades, showing that they undoubtedly have a huge impact on conserving the environment. Therefore, the South African government and policy-makers should develop more green adoption policies, introduce tax rebates for customers who buy green vehicles, and introduce policies that require car dealerships to have green vehicles as at least 50 per cent of their stock. Also, the Department of Education could bring about change by introducing initiatives that educate people about green vehicles and about how buying a green vehicle could improve the environment.

9. Limitations, and recommendations for future research

Even though this study provided marketing managers and environmentally friendly vehicle companies with important insights, it had limitations that are highlighted below, followed by recommendations for future research.

Owing to the Covid-19 pandemic, convenience sampling was used by distributing and sending questionnaires to respondents online. This limited the possibility of physically distributing the questionnaires in public areas in Gauteng, and so hindered the ability to go to malls and residential areas to collect data from the sample group. Also, locating individuals who drive eco-friendly hybrid vehicles was difficult because they were not easily accessible. Thus we had to use social media to reach our desired target group. Furthermore, the majority, if not all, of the respondents completed the questionnaire on their mobile devices. That presented a problem, as it meant that the researchers were unable to explain the questionnaire in depth to give respondents a greater understanding of it. This resulted in many respondents not clearly understanding specific questions and what required them.

Despite convenience sampling being used to gather the research information, a recommendation would be to use quota sampling to represent the population more accurately. In addition, in future research, it is suggested that an environment be chosen where the researcher could engage in person with respondents to assist them with any questions about the questionnaire.

10. Conclusion

This study discussed the impact of the determinants (attitudes, subjective norms, customer value, hedonic value, and perceived behavioural control) on green vehicle purchase (behavioural) intention. The proposed model provided a reasonably good explanation of green vehicle behaviour intention, as the combined factors indicated 76.9 per cent of the variance in behavioural intention when purchasing green vehicles. While purchasers are becoming better informed about the environment and are reviewing this information in their choices about green products, previous research shows how little we reflect on customers' motives when deciding to purchase green brands and related green products (Darnall & Vazquez-Brust, 2012). This study provided more information on the role and impact of attitudes, perceived behavioural control, subjective norms, and types of value on green vehicle adoption. The implications of its findings for strategies to be used by environmentally friendly vehicle companies and marketing managers have been explored in this study.

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The Influence of Traditional Promotional Mix Elements on Consumer Buying Choice of a Hatchback Automobile in Gauteng, South Africa

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Keywords

Promotional tools;
consumer behaviour;
automobile; hatchback
automobile; automobile
industries

Abstract

Automobile demand has clearly increased as reflected in the rising customer base in South Africa and within Gauteng households. Due to the growing demand for automobiles amongst Gauteng households, the study seeks to examine the influence of promotional tools: advertising, personal selling, sales promotion, public relations and direct marketing on consumer behaviour (buying a hatchback automobile) //and to ascertain the relevance of traditional tools in today's world, which is characterised by digital marketing. A quantitative research approach was used. Primary data were gathered from 320 hatchback automobile purchasers using structured questionnaires, comprising closed-ended questions, being self-administered, and administered via an online-based survey. The results of the study indicated that advertising, personal selling, public relations and direct marketing have a positive and significant influence on consumer behaviour unlike the notion that these marketing strategies belong in the past. Sales promotion has a positive but non-significant effect on consumer behaviour. The study adds value to academic discussions concerning the validity and continuation of the essence of discussion on the value of marketing promotional tools. The study can assist marketing managers of hatchback automobiles to determine which promotional tools to implement to improve sales. This study can be extended by executing further studies in different sectors/industries to determine its generality.

1. Introduction

Promotion is regarded as one of the most powerful elements in the marketing mix, and it implies communicating with and persuading the target market that it is a necessity for them to buy the entity's products (Al Badi, 2018). Munir (2018) advocates that promotion tools are crucial techniques to effectively communicate to potential customers how the product or service can benefit the customer. In today's competitive world, it is not sufficient for an organisation to have only good products sold at a good price (Khanfar, 2016). To generate sales and profits, the benefits of a product must be communicated to consumers (Khanfar, 2016:94). Abdullah (2016) notes that marketing is considered as an important force in the competitive effort between businesses, which leads businesses to be able to stay in the market. Marketing opens up new horizons through activities used to identify the needs and desires of consumers and gain their support (Abdullah, 2016). Gunasekharan, Basha and Lakshmanna (2015) state that for the prospective customer of today, companies need to make a great deal of effort to sell their products and promote their existence.

Tushar (2014) contends that different studies examine the effectiveness of promotional tools that aim to change the consumer's behaviour. Regardless, there is uncertainty as to which combination of tools

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can most effectively persuade the customers to alter their behaviour and perception (Tushar, 2014). The present study seeks to discover the influence of promotional tools, namely: advertising, sales promotion, public relations, personal selling and direct marketing on consumer behaviour. The study is essential to determine the most influential promotional tool that persuades consumer behaviour of buying a hatchback automobile. Furthermore, it is essential to know how the automobile industries use these promotional tools and the consequent effect on consumer behaviour. Every promotional tool has its own distinct characteristics and effectiveness to influence the customers' viewpoint about various goods (Munir, 2018).

1.1. Problem Statement

Promotional tools are a term used to depict the set of tools that an organisation can use to communicate the value of its products and services to its consumers (Alexandrescu & Milandru, 2018). The challenge is to choose the optimal combination of tools to suit a specific industry at a certain time and then use it accurately to accomplish a result (Karunanithy, Sivesan & Lanka, 2013). Although previous researchers have explored the impact of promotional tools on consumer purchasing behaviour, their studies lacked exposure to the significance and efficacy of an individual promotional tool (Nour, Almahirah, Mohammed-Said & Freihat, 2014). Makgopa (2016) further points out that a variety of studies have examined the causal relationship between advertising, sales and brand images (public relations) in various industries other than the automobile industry.

Further, due to the advances of digital marketing, some scholars believe that promotional tools used for marketing belong to the past and are no longer suitable in today's world because of advances in digital technologies. Ntsike (2016) states that there is still no evidence as to whether or not traditional methods of advertising will become outdated. There seems to be a scarcity of knowledge on the effectiveness of the promotional tools influencing customers' behaviour when buying a hatchback automobile. The problem statement of this study is structured as follows: To determine and identify which promotional tools (advertising, personal selling, sales promotion, public relations and direct marketing) influences consumer behaviour buying a hatchback automobile. Therefore, it is important to discover whether promotional tools are essential in influencing consumer's behaviour when buying hatchback automobiles.

1.2. Methodology

1.2.1 Population and sampling

The targeted population chosen for this study was hatchback automobile buyers who reside in Gauteng province, South Africa. Gauteng was chosen as a geographical area because the province is the economic hub of South Africa as well the most urbanised and densely populated province with a diverse population, thus representing South Africa and can be said to be a true representation of the South African population. The respondents selected were hatchback buyers, with the sampling process aimed at being able to examine the influence of promotional tools on consumer behaviour buying a hatchback automobile. A total sample size of 320 participants was considered suitable for the research study. According to Musasa (2014), a sample size of more than 300 is significant enough to generate true conclusions for the greater population in circumstances where nearly all respondents are qualified for the intention of the study.

1.2.2 Pilot survey

A pre-testing pilot survey was administered to a sample of 30 hatchback automobile respondents to point out questions that may not be favourable and also to show any challenges in questionnaire design. The purpose of conducting the pilot survey was to ensure the effectiveness of the study. A pilot study is a method that helps in testing and refining one or more aspects of a final study, it provides an opportunity to practice the effectiveness of the research instruments (Starkey, 2017). Participants were requested to give their opinions and comments on the clarity of the instructions, the wording of the questions, the layout of the questionnaire and the time taken to complete them. The results of the pilot survey indicated that questions were accurate, realistic and easy to understand. The reliability and validity of the report score was good. Pre-testing or piloting the questionnaire ensures that mistakes are eliminated in the questionnaire (Moseki, 2020).

1.2.3 Data collection method

The primary data were collected using a self-administered questionnaire survey instrument. Surveys are convenient, inexpensive and an interactive method (Zikmund & Babin, 2013). Data collectors assisted in obtaining data from 320 respondents using structured questionnaires through online database collection. A total of 568 self-administered online-based questionnaires were distributed to the targeted respondents. Only 325 participants met the requirements of the two screening questions. After cleaning the data, a total of 320 responses were used for analysis, with only one questionnaire voided, representing 99.68 percent. Karimi (2013) states that a questionnaire is often an instrument for a survey, as it is appropriate for descriptive and analytical review.

1.2.4 Data collection instrument

The instrument used consists of a five-point Likert scale ranging from: 1= strongly disagree to 5= strongly agree. Qhogwana (2016) remarks that a Likert scale is a reviewed rating scale, which is made up of statements that stipulate either an agreeable or a disagreeable response towards the objects investigated. The questionnaire for this study comprised three sections. Section A probed respondents' demographic factors such as age and gender. Section B measured the factors advertising, personal selling, sales promotion, public relations and direct marketing. Section C was focused on the dependent factor – consumer behaviour, and specifically on the choice of buying a hatchback automobile in Gauteng, South Africa.

1.2.5 Data analysis

Statistical analyses were used since the data was quantitative; data were captured into a software package and analysed using IBM Statistical Package for Social Sciences (SPSS) version 26. Pearson's correlation coefficient was determined to establish the connections between the variables and the statistical importance of these relationships. Rashid (2015) points out that when implementing the Pearson's correlation test in SPSS, it is important to make use of the correlations that have a statistically important correlation for the analysis. A correlation coefficient allows a person to quantify the quality of the magnitude alliance between numeral variables (Zaid, 2015).

1.2.6 Reliability

Table 1 exhibits that the results for the Cronbach alpha coefficient for all the variables measured are all above 0.7. Malhotra, Nunan and Birks (2017) note that the cut-off value of the Cronbach's alpha is 0.7 even though 0.6 is sometimes permitted.

Table 1. Reliability test

<i>Constructs</i>	<i>Items</i>	<i>Corrected Item-Total Correlation</i>	<i>Cronbach's Alpha</i>	<i>Number of Items</i>
<i>Advertising</i>	ADS1	0,565	0,760	4
	ADS2	0,588		
	ADS3	0,511		
	ADS4	0,562		
<i>Personal Selling</i>	PERS1	0,570	0,816	5
	PERS2	0,629		
	PERS3	0,654		
	PERS4	0,607		
	PERS5	0,570		
<i>Sales Promotion</i>	SP1	0,608	0,819	5
	SP2	0,671		
	SP3	0,560		
	SP4	0,588		
	SP5	0,625		
<i>Public Relations</i>	PR1	0,462	0,781	5
	PR2	0,590		
	PR3	0,530		
	PR4	0,619		
	PR5	0,577		
<i>Direct Marketing</i>	DM1	0,625	0,791	4
	DM2	0,671		
	DM3	0,619		
	DM4	0,497		
<i>Consumer Behaviour</i>	CBB1	0,628	0,848	6
	CBB2	0,645		
	CBB3	0,651		
	CBB4	0,596		
	CBB5	0,656		
	CBB6	0,599		

1.2.7 Validity

Validity refers to whether the measuring instrument measures the behaviour or quality it is intended to measure and how well the measuring instrument executes its function (Surucu & Maslakci, 2020). Further defines validity as acquiring data that is suitable for the intended use of the measuring instruments (Surucu & Maslakci, 2020). Statistical conclusion validity was used to determine whether the research measured what it was supposed to measure. Statistical conclusion validity refers to inferences about whether it is suitable to presume covariation given a specified alpha level and the acquired variances (Drost, 2011). Different methods were taken to warrant the validity of the study. Validity was measured by piloting study of 30 hatchback automobile buyers prior the main investigation to allow for making any adjustment where required. Survey questions were organised on the basis of the literature review and frame of reference to warrant the validity of the study. The reliability and validity of the report score were good. The respondents' positive responses based on the questionnaire design format and questions indicated that the design and questions were clear and concise.

1.3. Hypotheses

The following hypotheses were formulated for the study:

- H₁: Hypothesis 1: Traditional advertising has a positive influence on consumer behaviour buying a hatchback automobile.

- H₂: Hypothesis 2: Personal selling has a positive influence on consumer behaviour buying a hatchback automobile.
- H₃: Hypothesis 3: Sales promotion has a positive influence on consumer behaviour buying a hatchback automobile.
- H₄: Hypothesis 4: Public relations has a positive influence on consumer behaviour buying a hatchback automobile.
- H₅: Hypothesis 5: Direct marketing has a positive influence on consumer behaviour buying a hatchback automobile.

2. Literature Review

2.1 Promotional tools

Automobile industry especially entry level hatchback segment is increasing at a high pace and there is tough competition between brands (Satheesh, Manjula &, 2012). Advertisements are used as a strong medium by marketers to communicate important product information to customers and persuade them to make a purchase (Satheesh, Manjula &, 2012). The primary instruments used to compel customers to buy products or services are referred to as the promotional tools (Agrawal, 2012). Hadita and Adiguna (2019) define promotional tools as a set of elements and methods for exchanging information about the organisation and its offerings, to achieve the essential objectives of the business. Munir (2018) further defines promotional tools as an entire set of different elements, which an organisation uses to communicate its diverse products, services and brands to its target market. Imtiaz, Maqsood, Mehmood and Idrees (2017) substantiate that promotional tools are techniques used by an organisation or manufacturer to interest consumers in purchasing multiple services or products. The use of promotional tools by automobile industries is to enhance within the target market awareness of products and services which simultaneously increase automobile sales, which in turn provides profit for the organisations (Zolkifly, Yusof & Baharom, 2017). These promotional tools are grouped into five major elements: advertising, personal selling, sales promotion, public relations and direct marketing (Onyejiaku, Ghasi, & Okwor, 2018).

2.2 Advertising

Advertising is a mass-marketing communication tool that is fashioned to communicate knowledge and persuade a great number of consumers (Camilleri, 2018). However, this medium needs some type of media or podium to convey the message (Camilleri, 2018). The purpose of advertising is to impart knowledge of a new product, report the attributes and features of the product, advice on product usage, differentiate the product from rival's products, create or improve a product's image and to direct consumers to the point-of-purchase, among other things (Camilleri, 2018).

Weber and Shweiger (2017) define advertising as any composition of paid strategic communication by an identified sponsor that intends to notify and/or convince audiences about an advertising article such as a product, service, a thought, a business or brand. Traditionally this is communicated by means of purchased time or space in mass media platforms (Weber & Shweiger, 2017). Abdullah (2016) notes that advertising is said to be the prime technique in generating product awareness in the mind of a potential consumer who is making a purchasing decision. Advertising serves diverse purposes, the major ones being to inform, persuade, remind and generate the addition of usefulness in consumers' senses (Todorova, 2015). Makgopa (2016) argues that even though advertising plays a part in building product awareness and influences future sales, the effect is not always positive. The result, in the long-run, may be negative (Makgopa, 2016). Dorshi and Parmar's (2016) study reveals that the purchasing of automobiles is mainly influenced by advertisements and secondly, by recommendations from family and friends. An effective advertisement causes a desire in listeners, audiences or readers minds; it also provides information on how to satisfy a desire and how to make the potential consumer feel good about the product (Jan, Hague, Abdullah, Anis, Shakib, & E-Alam, 2019). Therefore, from the discussion above, the first hypothesis is formulated as:

H₁: Traditional advertising has a positive influence on consumer behaviour buying a hatchback automobile.

2.3 Personal selling

Personal selling has long been recognised as the oldest and most likely the most significant component of a promotional mix (Anyadighibe, Awara & Esu, 2014). Supriyanto and Ariyanti (2018) state that personal selling is the interpersonal element of marketing communications, which occurs when the sales force communicates with consumers about prospects to build relationships. Nour, Almahirah, Mohammed-Said & Freihat (2014) define personal selling as spoken communication and face-to-face conversation with one or more potential consumers to create a need for a product or service, reply to inquiries, or respond to requests. Masimane (2017) notes that personal selling is a beneficial vehicle used for communicating with present and prospective buyers. Suttle (2018) states one of the drawbacks of personal selling is that one cannot quickly approach or respond to as many customers; as a result, it will take longer to build consciousness of the products and brand, particularly if one uses personal selling exclusively. According to Yousif (2016), profitable organisations are those that are knowledgeable about customer behaviour and are able to select marketing techniques that get through to target customers by means of the personal selling process. Therefore, the second hypothesis is formulated as:

H₂: Personal selling has a positive influence on consumer behaviour buying a hatchback automobile.

2.4 Sales promotion

Ramesh and Rao (2018) report sales promotion as a marketing and non-marketing force put into practise at a particular period of time to encourage a test of the product, increase customer demand, or to prove the availability of a product. Eleboda (2017) defines sales promotion as 'special offers', which naturally intend to increase demand during the specified period of time set. Nakarmi (2018) states that sales promotion is one of the methods used to interest consumers in purchasing more of the business products and services and defines sales promotion as marketing activities as being specific to a period, area or consumer group, which encourage a direct reaction from customers or marketing intermediaries, through the offer of additional benefits. Sales promotion increases the sales of a business, and it gives an instant boost to an organisation to achieve their anticipated sales and revenue (Zafar, Niazi & Zafar, 2018). Sales promotion is also known as a survival element as it results in competition with rivals to ensure sustainability in the market (Zafar, Niazi & Zafar, 2018). In a study conducted by Adithya (2013) on customer perception and automobile owners' behaviour, it was established that, in terms of hatchback automobiles, brand name was relevant the time for selecting any brand name product and 50 percent of the respondents were price sensitive. As a result, automobile industries used a number of sales promotion strategies and rewards as part of their marketing mix to promote a product and thus increase sales (Pongsamakthai, 2007). Therefore, the third hypothesis is formulated as:

H₃: Sales promotion has a positive influence on consumer behaviour buying a hatchback automobile.

2.5 Public relations

The area of public relations is a very important function in marketing in terms of communication with potential customers. It incorporates trademarks such as articles, blogs, case studies, print media, podcasts, that assist the promotion of an organisation's services and products that aims to create a good reputation for the business and its brands (Gasparyan, 2018). The word 'public' is used in public relations to depict the specific individuals and/or groups with whom a business builds a relationship with (Tam & Kim, 2019). According to Thurlow, Seigny and Dottori (2018), public relations is part of societal dynamics, a perception that suggests organisations are required to respond to societal expectations. Iroha (2019) defines public relations as the art and social science of examining developments, anticipating their consequence, assisting and advising institution leaders and performing a strategic system of action for the benefit of both the business and the public collectively. Ngwainmbi (2016) notes there are challenges in developing public relations, mainly because the general public does not have explicit knowledge of public relations as a practice. As a result, the American Psychological Association and other scholars have considered public relations as a mere concerted set of messages aimed at influencing the conditions or behaviour of large numbers of people, as a result tarnishing the profession (Ngwainmbi, 2016). Anani-Bossman (2019) reports that for the Institute of Public Relations (IPR), public relations are about reputation; the consequence of

what you do, what you speak and what others publish about you. Reputation management is based on the belief that an ethical reputation improves credibility, which converts to various benefits including increased sales and earnings, price premiums, improved community relations, high stock price, among others (Anani-Bossman, 2019). Therefore, the fourth hypothesis is formulated as:

H₄: Public relations has a positive influence on consumer behaviour buying a hatchback automobile.

2.6 Direct marketing

Direct marketing is a direct communication technique used by businesses to target their consumers to attain an instant reaction (Gituma, 2017). Through direct marketing, businesses communicate directly with the aimed consumers to create a response and/or a deal (Ukaj, 2016). Khan (2012) defines direct marketing as the umbrella concept for every media platform that operates in the business place where goods and services are bought and sold, to get a lead, to build traffic, to increase financial resources and to sell a product or service. Direct marketing supplies the business with an opportunity to promote the products and services directly to the customers who most require them (Auto erp, 2018). A good direct marketing campaign will help the business build relationships with new clients, test the appeal of the product or service, notify which marketing approaches reach the target market, provide customers with forceful content they can communicate or share with other potential customers, leading to growing sales (Auto erp, 2018). Therefore, the fifth hypothesis is formulated as:

H₅: Direct marketing has a positive influence on consumer behaviour buying a hatchback automobile.

2.7 Consumer buying behaviour

Consumer behaviour is defined as an activity that customers exhibit when looking for, purchasing, making use, assessing and eliminating goods that they believe will satisfy their needs (Raithel, 2018). Kumar (2019) opines that consumer behaviour is a study of the use and disposal of goods and moreover, the study of how they are obtained. Shrestha (2016) further defines consumer behaviour as a set of procedures when a group of people make choices on usage of products and services during buying to meet their desires and satisfy their needs. Consumer behaviour focuses on how consumers make choices about how to spend their available resources (money, time and effort) on consumption-related products, therefore what they buy, why they buy it, when they buy it, where they buy it, how often they use it and how they get rid of it (Samarhan, 2016).

Sama (2018) notes that a consumer is an individual who purchases or has the ability to purchase goods and services offered for sale by businesses to satisfy personal or collective needs, wants and desires. Consumer behaviour suggests the study of consumer's needs, thoughts and motivation processes used in choosing one brand over the other and the patterns of purchasing different goods and services (Auf, Meddour, Saoula & Majid, 2018). Nonetheless, Dhanabalan, Subha, Shanti and Sathish (2018) state that it is not easy to predict consumers' detailed thoughts as each consumer is a unique product of genes, environment, and experience. Stankevich (2017) reiterates that awareness of how and why consumers behave in a particular way while making their buying decision, helps businesses improve their marketing strategies and be more successful in the market.

2.8 Research Framework

In concluding the literature review, a conceptual model is proposed, which comprises promotional tools (advertising, personal selling, sales promotion, public relations and direct marketing) that influence consumer buying behaviour as the independent variables and consumer behaviour as the dependent variable. Figure 1 represents the conceptual model tested in this study.

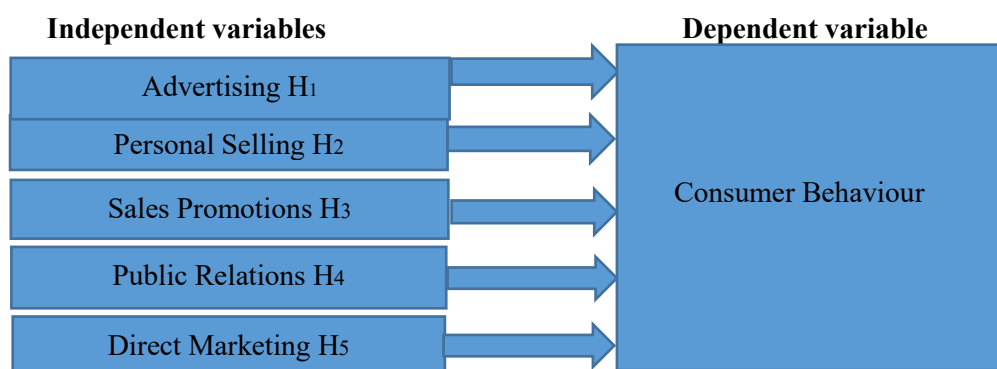


Figure 1. Conceptual model of the study

3. Results and Findings

3.1 Demographic variables

Table 2 depicts that there were more female respondents, representing 53.3 percent, than male respondents, representing 46.7 percent of gender distribution.

Table 2. Gender distribution

	<i>Frequency</i>	<i>Percentage</i>
<i>Male</i>	149	46,7
<i>Female</i>	170	53,3
<i>Total</i>	319	100
<i>Voided (gender not specified)</i>	1	

Table 3 depicts the age group of respondents that have purchased a hatchback automobile. About 61.4 percent of the respondents were between the ages of 18 and 29, and 27,3 percent were between the age of 30 and 39 years, while less were between the ages of 40 and 49 years (9,1%) and 50 and 59 years (1,9%); and 60 and 65 years(0,3%). These results indicate that hatchback automobiles were more appealing to the younger generation, especially to the 18-29 age group.

Table 3. Age distribution

	<i>Frequency</i>	<i>Percentage</i>
18-29	196	61,4
30-39	87	27,3
40-49	29	9,1
50-59	6	1,9
60-65	1	0,3
<i>Total</i>	319	100,0

3.2 Analysis inferential statistics

Correlation and regression analysis are the most frequently used techniques for investigating the relationship between two quantitative variables (Zaid, 2015). ANOVA is a statistical test used to analyse the difference between the means of more than two groups (Bevans, 2020). Regression analysis is a statistical method for estimating the relationship among constructs, and depicts reason and result relations (Uyanik & Guler, 2013).

(a) Correlation analysis

Prior to running the regression analysis, a correlation test was conducted. The results in Table 4 indicate significant relationships between all constructs. There is a significant correlation between advertising and consumer buying behaviour ($r = 0,702^{**}$; $p < 0.001$); between personal selling and sales promotion ($r = 0,701^{**}$; $p < 0.001$).

Table 4. Correlation matrix

	<i>Advertising</i>	<i>Personal Selling</i>	<i>Sales Promotion</i>	<i>Public Relations</i>	<i>Direct Marketing</i>
<i>Personal Selling</i>	.696**				
<i>Sales Promotion</i>	.672**	.701**			
<i>Public Relations</i>	.638**	.672**	.654**		
<i>Direct Marketing</i>	.502**	.399**	.523**	.466**	
<i>Consumer Behaviour</i>	.702**	.650**	.622**	.639**	.485**

The values with *** indicate a significant relationship between the constructs at 95 or 99 confidence intervals. Since all constructs are related, they are appropriate for regression analysis (Pallant, 2010).

(b) Multiple-linear regression analysis

Regression analysis reveal the strength of an independent variable as predictor of the dependent variable and is the basis for either accepting or rejecting a hypothesis.

Multiple linear regression is an extension of simple regression analysis permitting a dependent variable by multiple independent variables. As a result, the level of a dependent variable is explained by more than one independent variable (Babin & Zikmund, 2016). The test was conducted to assess the impact of the independent variables (promotional tools) on the dependent (consumer behaviour) variable.

The outcomes in Table 5 and Table 6 reveal that the model predicting consumer behaviour is statistically significant ($F = 88,881$; $p < 0.001$). The $R^2 = 0,586$ suggests that the independent variables (advertising, personal selling, sales promotion, public relations and direct marketing) explain up to 58.6 percent of the variance of consumer buying choice.

Table 5. Model summary

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
<i>1</i>	.765 ^a	0,586	0,579	0,53168

a. Predictors: (Constant), Direct Marketing, Personal Selling, Public Relations, Advertising, Sales Promotion

The ANOVA table (Table 6) shows that the regression equation describes a statistically significant part of the variability in the dependent variable due to variability in the independent variables.

Table 6. ANOVA

<i>Model</i>		<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>P value</i>
<i>1</i>	Regression	125,624	5	25,125	88,881	.000 ^b
	Residual	88,761	314	0,283		
	Total	214,386	319			

a. Dependent Variable: Consumer Buying Choice
b. Predictors: (Constant), Direct Marketing, Personal Selling, Public Relations, Advertising, Sales Promotion

3.3 Presentation of results in relation hypotheses

Table 7 presents the predictive results of the promotional tools (advertising, personal selling, sales promotion, public relations and direct marketing) in terms of buying hatchback automobiles. The outcomes show that advertising has a positive and significant effect on consumer buying choice ($\beta =$

0,345; $p < 0,001$; $t = 6,075$). The outcomes also imply that personal selling has a positive and significant effect on consumer buying choice ($\beta = 0,178$; $p < 0,001$; $t = 3,019$). Sales promotion does not have a significant effect on consumer behaviour ($\beta = 0,080$; $p > 0,001$; $t = 1,367$). The outcomes further reveal that public relations ($\beta = 0,198$; $p < 0,001$; $t = 3,646$) and direct marketing ($\beta = 0,107$; $p < 0,001$; $t = 0,016$) have a positive and significant effect on consumer behaviour. Finally, these outcomes suggest that consumer behaviour is driven by direct marketing, personal selling, public relations and advertising.

Table 7. Coefficients

<i>Coefficients^a</i>					
<i>Model 1</i>		Standardised Coefficients	T value	P value	Conclusions
		Beta			
	(Constant)		2,584	0,010	
	Advertising	0,345	6,075	0,000	Advertising has a positive ($\beta = 0.345$) and significant effect on consumer behaviour as its p value (0.000) is lower than 0.05. Therefore, hypothesis H₁ is accepted.
	Personal selling	0,178	3,019	0,003	Personal selling has a positive ($\beta = 0.178$) and significant effect on consumer behaviour as its P value (0.003) is lower than 0.05. Therefore, hypothesis H₂ is accepted.
	Sales promotion	0,080	1,367	0,172	Sales promotion has a positive ($\beta = 0.080$) but non-significant effect on consumer behaviour as its P value (0.172) is higher than 0.05. Therefore, hypothesis H₃ is not accepted.
	Public relations	0,198	3,646	0,000	The construct Public relations has a positive ($\beta = 0.198$) and significant effect on consumer behaviour as its P value (0.000) is lower than 0.05. Therefore, hypothesis H₄ is

					accepted.
	Direct marketing	0,107	2,411	0,016	Direct marketing has a positive ($\beta= 0.107$) and significant impact on consumer behaviour as its P value (0.016) is lower than 0.05. Therefore, hypothesis H_5 is accepted.
a. Dependent Variable: Consumer Behaviour					

4. Conclusion

Promotional tools are the general framework for promotion, intending to present the organisation, its products and services, to increase awareness of potential customers and to raise sales to acquire higher profits.

The results of this study shows promotional tools positively influence consumer behaviour of buying a hatchback automobile. The study examined the influence of promotional tools (advertising, personal selling, sales promotions, public relations and direct marketing) on consumer behaviour of buying a hatchback automobile in Gauteng province, South Africa. This research has proved that promotional tools stimulate interest in consumers and that they encourage a buying decision. In this regard, it can be concluded about how each promotional tool influences customer buying behaviour below.

The research findings were compared with the research finding of other research studies. The study concludes that advertising has a positive and significant effect on consumer behaviour of buying a hatchback automobile with a value of $P=0.000$, personal selling has a positive and significant effect on consumer behaviour buying a hatchback automobile with a value of $P=0.003$, public relations has a positive and significant effect on consumer behaviour buying a hatchback automobile with a value of $P=0.000$ and direct marketing has a positive and significant effect on consumer behaviour buying a hatchback automobile as its value was $P=0.016$. Sale promotion has a positive but non-significant effect on consumer behaviour buying a hatchback automobile with a value of $P=0.172$.

5. Limitations and future recommendations of the research study

This study contributes well to theory and practice. Nonetheless, it has some limitations. Due to financial constraints the geographic location of the study was focused on Gauteng province, South Africa.

The methodology involved a quantitative approach and a closed-ended questionnaire. Future research should aim for a mixed-method approach with a combination of closed and open-ended questions to gain an in-depth understanding of the influence of promotional tools on consumer behaviour buying related to a hatchback automobile. More importantly, the use of qualitative in-depth interviews will enable the researcher to understand why consumers are not influenced by sales promotions but are influenced by other promotional tools. Future recommended identify and represent more participants and include the other eight provinces of South Africa as this study focused only on Gauteng province. The researcher recommends that further analysis be performed with a larger sample size to ascertain whether sales promotion has a positive influence on consumer buying decision.

6. Managerial Implications

The results also reveal that, although, technological advances exist in digital marketing, traditional promotional marketing tools still play a role and marketers should pay particular attention to advertising to attract the younger target market. The research shows that hatchback automobile manufacturers should design promotional tools and marketing strategies specifically aimed at the target market aged 18 and 39 years.

7. Acknowledgments

I would like to thank Professor Phineas Mbango for the support, guidance and encouragement in this academic journey.

Competing interest: The authors proclaim that they have no financial or personal relationships that may have improperly influenced them in writing this article.

Author's contributions: Both authors contributed evenly to the final version of this study.

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A Framework to Examine the Outcomes of University Brand Personality

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Keywords

Branding; University brand personality; Higher education

Abstract

This study was motivated by the changing higher education landscape in South Africa, where an increase in the supply of higher education has resulted in intense competition between various brands. These changes have warranted the need for university managers to unlock their potential using branding and communication strategies. This includes the development of a unique brand personality. The following study proposes a conceptual model to holistically measure the relationship between Rauschnabel *et al.*'s (2016) brand personality dimensions and brand attitude, and its subsequent impact on behavioural and brand related, supportive, and emotional outcomes of university brand personality through the moderating role of self-brand connection. Prior to the development of this framework, the researchers engaged in an extensive review of secondary sources in peer-reviewed, accredited journal articles and relevant books. The proposed framework can be empirically tested by marketers and university management to measure the full power of university brand personality. Furthermore, the model can be tested in different markets using various higher education brands and student demographic groups.

1. Introduction

The South African higher education environment has been described as turbulent and unstable with institutions needing to overcome several challenges if they are to survive and grow (CGHE, 2018; Pederzini, 2016; Wiese *et al.*, 2009). One of these challenges is the increased levels of competition between public and private institutions which has advocated for the use of communication and branding strategies typically used by profit seeking organisations to break through the clutter (Balaji *et al.*, 2016) and build a strong university brand (Rauschnabel *et al.*, 2016).

While branding offers numerous advantages to both consumers and manufacturers (Keller and Swaminathan, 2020), the decision on whether to purchase a product or service is often based on emotions (Khatoun and Rehman, 2021). This places emphasis on universities to develop a strong brand personality, which can enable them to evoke consumer feelings and create an attachment from consumers towards the brand (Rauschnabel *et al.*, 2016). Brand personality as communicated by Su and Tong (2015) who cite (Aaker, 1997, p 347) is described as '*the set of human characteristics associated with a brand*'. The development of a distinct brand personality will allow consumers to identify themselves with a brand and to express their own personality through a brand (Su and Tong, 2015). From a university perspective, consumers are likely to identify with institutions that have a strong brand personality, one that is in congruence with their self-concept (Balaji *et al.*, 2016).

Although there has been numerous studies on university brand personality (see Rauschnabel *et al.*, 2016; Rutter *et al.*, 2017; Watkins and Gonzenbach, 2013), scholars such as Saeed *et al.* (2021)

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report on varied benefits/outcomes that can be generated from brand personality. However, universities rarely measure the outcomes of their brand personalities, even though they possess various unique brand personality dimensions that can be useful competitively.

1.1. Problem Statement

Students in South Africa, Africa and globally preferred the University of Cape Town and the University of the Witwatersrand because of their national and global brand image (Taid, 2022). This magnifies the need for branding within the higher education environment and to investigate the unabridged benefits that can be enjoyed from a strong brand personality (Saeed *et al.*, 2021).

Although Rauschnabel *et al.* (2016) has developed a University Brand Personality Scale (UBPS), the scale has yet to be validated in a unique African country like South Africa. In addition, there is also a need to study the outcomes of brand personality considering Rauschnabel *et al.*'s (2016) claims of its importance. From a systematic literature review, Saeed *et al.* (2021) found that behavioural and brand-related outcomes of brand personality have been studied. In addition to validating these outcomes in an African emerging market context, there could be other outcomes, such as emotional and supportive outcomes of brand personality that needs examination.

Drawing upon the attitude-behaviour context (ABC) theory, the study postulates that a positive attitude is required prior to certain behaviours or outcomes being realised. However, there is rarely a guarantee that a positive attitude will lead to a behaviour, hence the existence of an attitude-behaviour gap which needs to be closed (Dhir *et al.*, 2021) and the use of self-brand connection as a moderating variable to close the gap.

In order for the above-mentioned research problem to be addressed, the study aims to provide a conceptual model that measures the behavioural and brand related, supportive, and emotional outcomes of university brand personality through the mediating effect of brand attitude and the moderating effect of self-brand connection by integrating various models. These models include Aaker's (1997) brand personality and Rauschnabel *et al.*'s (2016) scales and dimensions, the anthropomorphism theory, the consumer brand relationship theory, the self-expression model, the self-congruity theory, and the attitude-behaviour-context theory. The integrated framework can be empirically tested to determine the powers or outcomes of university brand personality.

1.2. Methodology

The conceptualisation of the proposed framework was derived from various branding, consumer behaviour and psychology theories which have been discussed below. Prior to developing this framework, the researchers engaged in an extensive review of secondary sources in peer-reviewed, accredited journal articles and relevant books. Databases such as Google Scholar, Emerald and Springer were consulted. Key words in the search process included terms such as branding, brand management, university branding, brand attitude, brand personality, brand personality dimensions, outcomes of brand personality, and self-brand connection. This enabled the researchers to acquire relevant literature that assisted in the development of the conceptual model below.

The proposed conceptual model, illustrated in Figure 1, could be empirically tested using structural equation modelling (SEM). Based on the complexity of the model and the amount of constructs used Malhotra *et al.* (2017) suggest the use of a larger sample size. These sentiments are shared by Siddiqui (2013) who find that a sample size of at least 400 is required for models using 10 to 15 constructs in order to perform SEM tests. As this study uses 16 constructs, with a both a mediating and moderating variable, a sample size in excess of 600 is recommended.

The proposed population would be registered full-time and part-time students at the university/universities of interest. In order for generalisations to be made about all universities in a country or region, a greater a number of respondents at different institutions would be required.

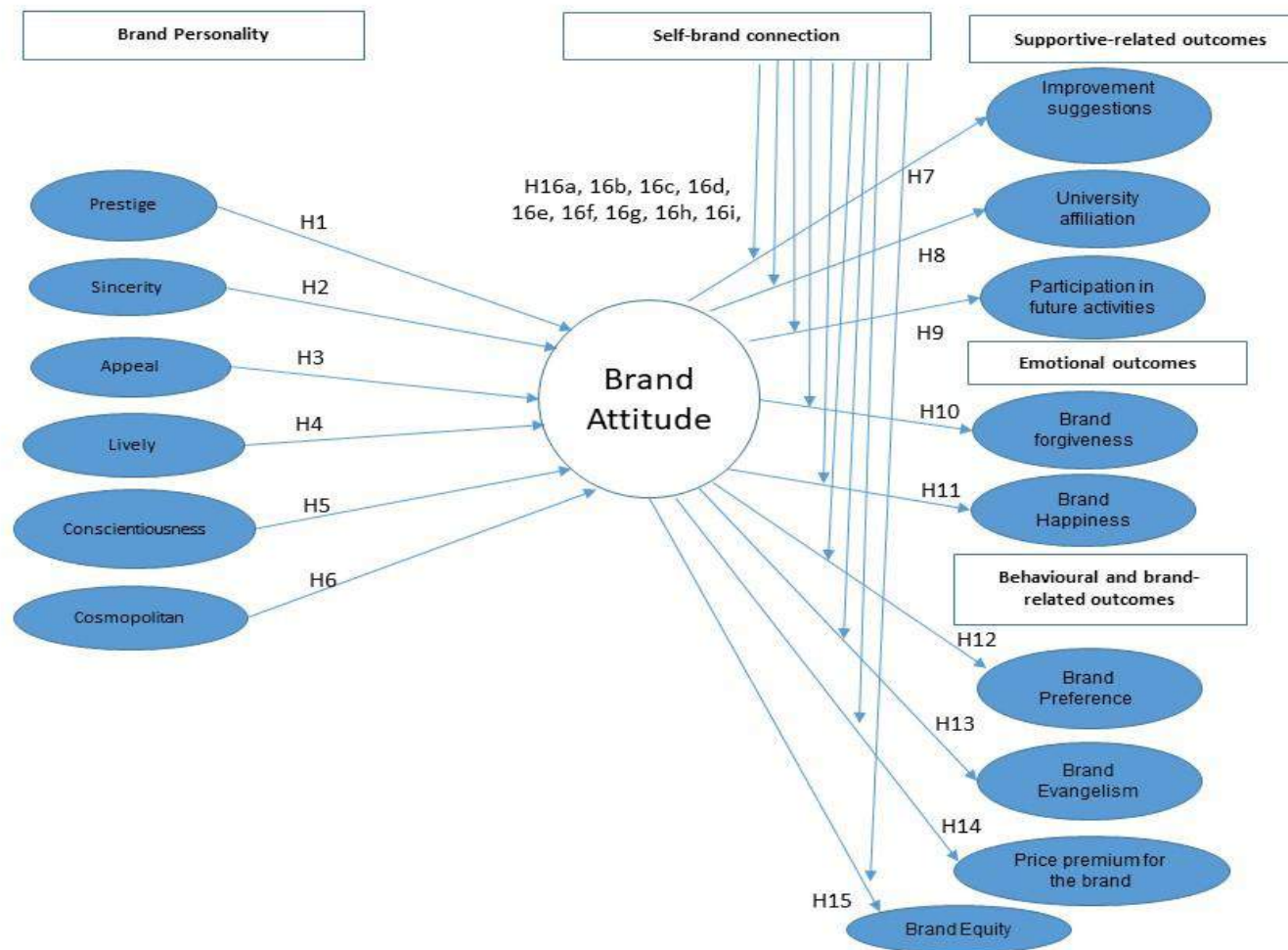


Figure 1: Proposed Conceptual Model

Source: Researchers own development guided by Rauschnabel *et al.* (2016), Balaji *et al.* (2016), Schnebelen and Bruhn (2018), Rup *et al.* (2021), Saeed *et al.* (2021). In addition, the conceptual model is also supported by Aaker's (1997) brand personality dimensions, the anthropomorphism theory, the consumer brand relationship theory, the self-expression model, the self-congruity theory, and attitude-behaviour-context theory.

1.3. Hypotheses

The following hypotheses were based on the proposed conceptual model above:

- H¹: There is a positive relationship between prestige brand personality and brand attitude.
- H²: Sincerity brand personality will positively impact brand attitude.
- H³: Appeal brand personality positively impacts brand attitude.
- H⁴: Lively brand personality positively impacts brand attitude.
- H⁵: There is a positive relationship between conscientiousness brand personality and brand attitude.
- H⁶: Cosmopolitan brand personality is positively related to brand attitude.
- H⁷: There is a positive relationship between brand attitude and improvement suggestions.
- H⁸: Brand attitude positively impacts university affiliation.
- H⁹: Brand attitude positively influences participation in future activities.
- H¹⁰: There is a positive relationship between brand attitude and brand forgiveness.
- H¹¹: Brand attitude positively impacts brand happiness.
- H¹²: There is a positive relationship between brand attitude and brand preference.
- H¹³: Brand attitude positively impacts brand evangelism.
- H¹⁴: Brand attitude positively influences the willingness to pay a premium price for the brand.
- H¹⁵: Brand attitude positively impacts brand equity.
- H^{16a}: Self-brand connection will moderate in the relationship between brand attitude and improvement suggestions.
- H^{16b}: Self-brand connection will moderate in the relationship between brand attitude and university affiliation.
- H^{16c}: Self-brand connection will moderate in the relationship between brand attitude and participation in future activities.
- H^{16d}: The relationship between brand attitude and brand forgiveness is moderated by self-brand connection
- H^{16e}: Self-brand connection will moderate in the relationship between brand attitude and brand happiness.
- H^{16f}: The relationship between brand attitude and brand preference is moderated by self-brand connection.
- H^{16g}: Self-brand connection will moderate the relationship between brand attitude and brand evangelism.
- H^{16h}: Self-brand connection will moderate in the relationship between brand attitude and price premium for the brand.
- H¹⁶ⁱ: Self-brand connection will moderate in the relationship between brand attitude and brand equity.

2. Literature Review

This section discusses the models and theories used to develop the integrated framework for this study. The degree of claims about the benefits of brand personality and how to achieve the various benefits, warrants the need to review and use different underpinning theories in this study to explain the benefits. Some relevant concepts and theories to be reviewed and used in this study includes Aaker's (1997) brand personality and Rauschnabel *et al.*'s (2016) university brand personality scales and dimensions, the anthropomorphism theory, consumer brand relationship theory, the self-expression model, the self-congruity theory, and the attitude-behaviour-context theory. In addition, aspects of various branding models from Balaji *et al.* (2016); Rauschnabel *et al.* (2016); Rup *et al.* (2021); Saeed *et al.* (2021); and Schnebelen and Bruhn (2018) were used to develop the conceptual model.

Rauschnabel *et al.* (2016) Scales and Dimensions

Rauschnabel *et al.*'s (2016) University Brand Personality Scale (UBPS) is based on the work of Aaker (1997). The researchers were motivated to provide a context-specific scale, as there were concerns over Aaker's (1997) scale's ability to transcend cultures and product categories. The result was the development and validation of a six-dimension UBPS comprising of dimensions such as prestige, sincerity, appeal, lively, conscientiousness and cosmopolitan.

Balaji *et al.* (2016) University Supportive Outcomes/behaviours

When there is the liking of the university brand personality and according to the social identity and exchange theories, students give back in terms of engaging in university supportive behaviours (Balaji *et al.*, 2016). Balaji *et al.*'s (2016) model suggests that some of the university supportive outcomes are improvement suggestions, university affiliation and participation in future activities. However, before the university brand personality impacts the supportive outcomes, and following the attitude-behaviour-context (ABC) theory of Dhir *et al.* (2021), a positive attitude is needed as a mediator. The positive attitude is built from identifying with the university brand personality (Balaji *et al.*, 2016). In the context of university brand personality and supportive outcomes, Balaji *et al.* (2016) suggest self-brand connection (SBC) as a moderator that can close the attitude-behaviour gap. Consumers with high levels of self-brand connection identify strongly with the brand and hold positive attitudes towards the brand. These consumers are also more likely to engage in brand supportive behaviours as it allows them to communicate their identification with the university to others (Balaji *et al.*, 2016). These supportive behaviours/ outcomes are illustrated in the model below.

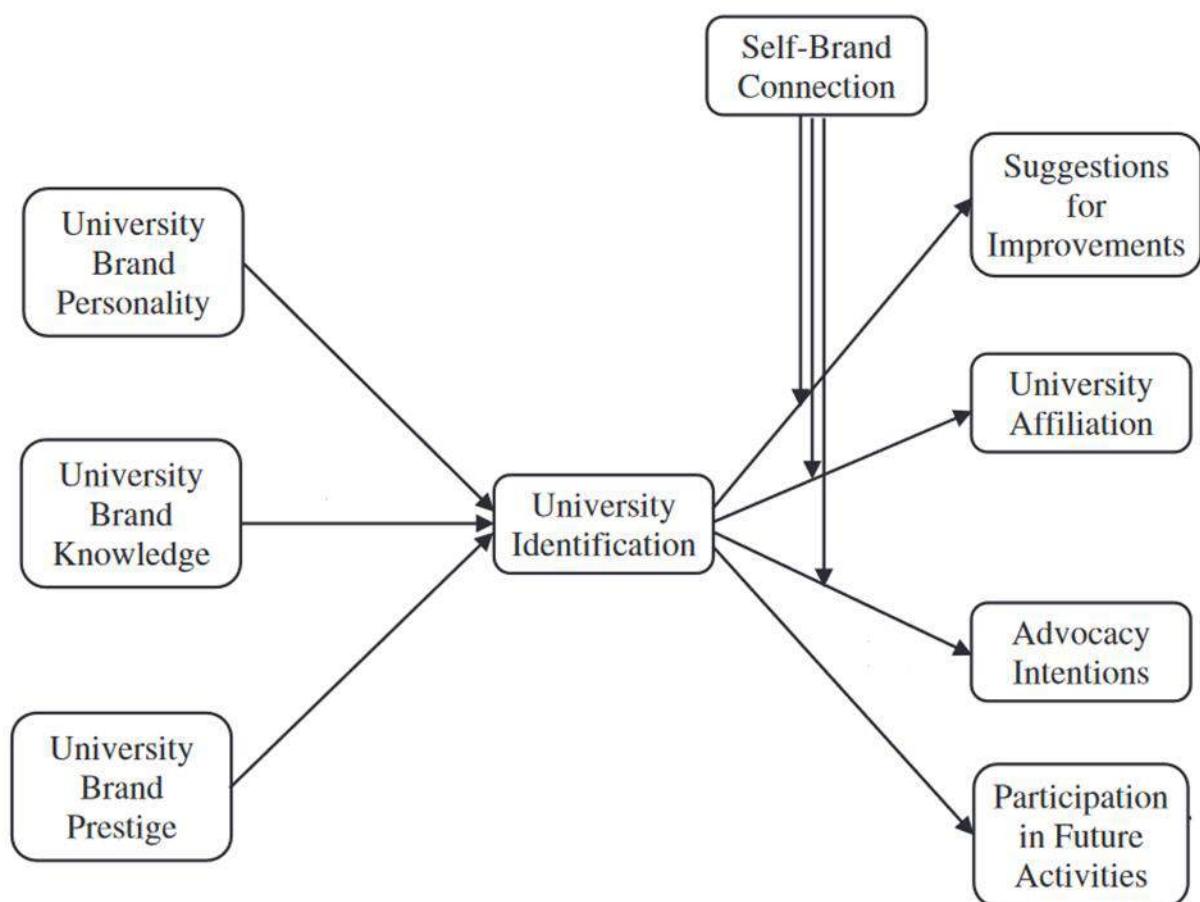


Figure 2: University Supportive Behaviours Model
Balaji *et al.* (2016: 3025)

Schnebelen and Bruhn's (2018) Emotional outcomes

The model developed by Schnebelen and Bruhn (2018) suggests some emotional outcomes such as brand happiness, brand evangelism, positive word-of-mouth and brand forgiveness. As communicated by Rauschnabel *et al.* (2016) university brand personality can create an emotional attachment from consumers towards the brand. This emotional connection can result in favourable returns for brand managers (Khatoun and Rehman, 2021; Schnebelen and Bruhn, 2018; Watkins and Gonzenbach, 2013).

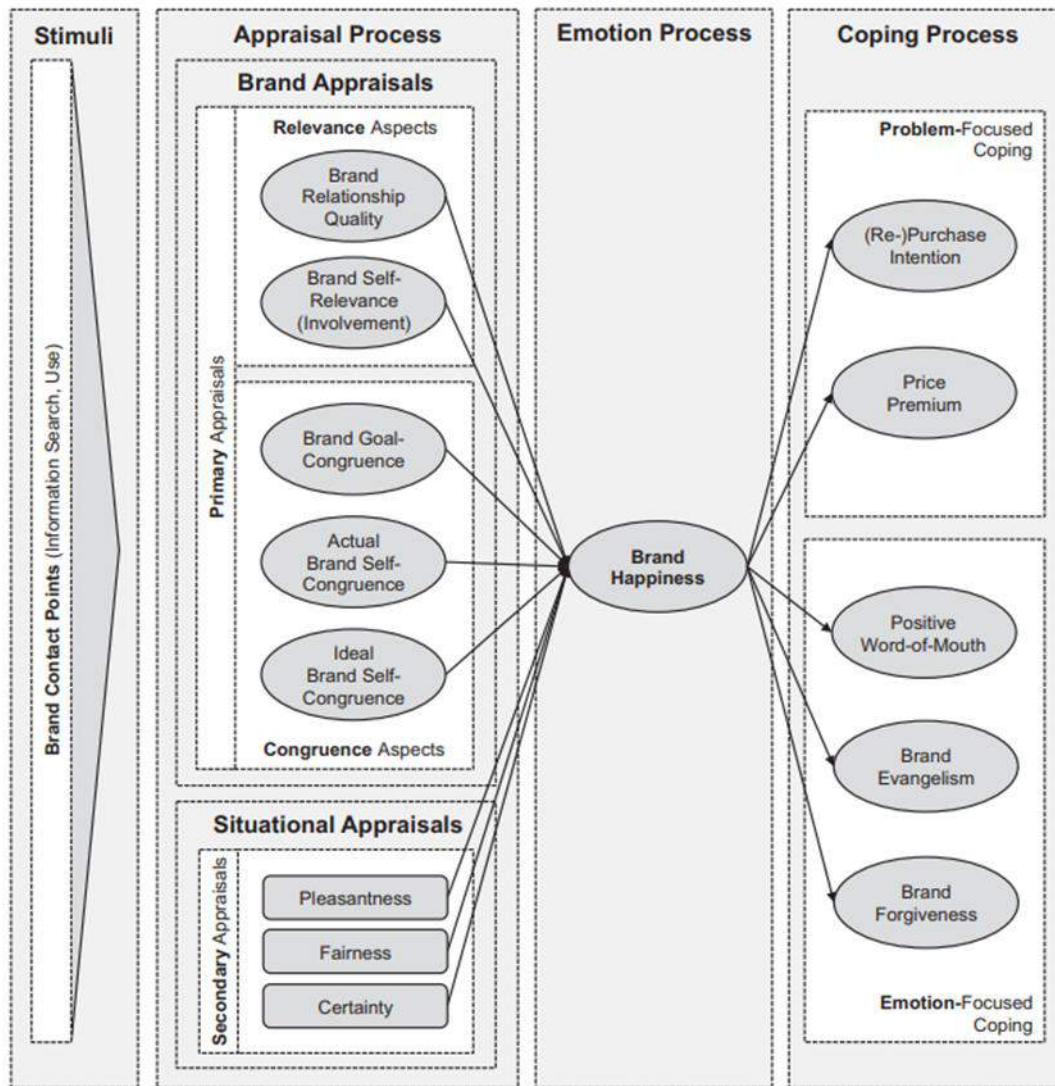
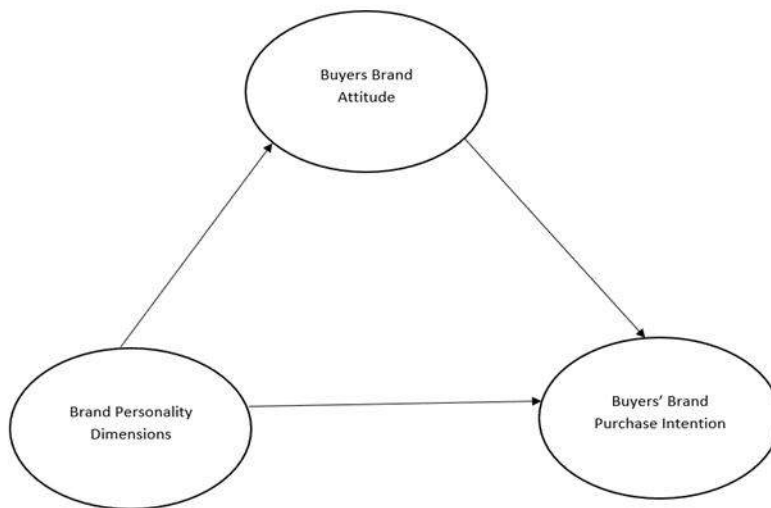


Figure 3: Appraisal Framework Of Brand Happiness (Schnebelen and Bruhn, 2018: 105)

RUP *et al.*'s. (2021) Model depicting the mediating role of brand attitude

Rup *et al.* (2021) suggest that brand attitudes mediate in the relationship between brand personality dimensions and desired behaviours from consumers. The authors allude that prior to certain outcomes being realised, the dimensions of prestige, sincerity, appeal, lively, conscientiousness and cosmopolitan would first impact brand attitude, which thereafter would influence various outcomes.



**Figure 4: Model Depicting The Mediating Role Of Brand Attitude
(Rup *et al.*, 2021: 128)**

Saeed *et al.* (2021) integrative model of antecedents and consequences of brand personality

In a comprehensive literature review on the antecedents, outcomes and theories related to brand personality in general, Saeed *et al.* (2021) summarised and categorised the consequences/outcomes of brand personality into four themes, namely: relational, cognitive, behavioural, and brand related. Out of the four categories of brand personality outcomes that Saeed *et al.* (2021) have identified, they found that relational consequences, such as brand trust and brand loyalty, behavioural consequences such as purchase intention, and brand-related consequences such as brand equity have been studied. Saeed *et al.* (2021) found that studies are lacking on the emotional and supportive outcomes of brand personality. The emotional outcomes are particularly important considering that brand personality is an emotional attribute that emanates from a brand and from which consumers are willing to distinctively respond to their liking of the brand personality (Rauschnabel *et al.*, 2016). Saeed *et al.*'s (2021) framework is indicated below.

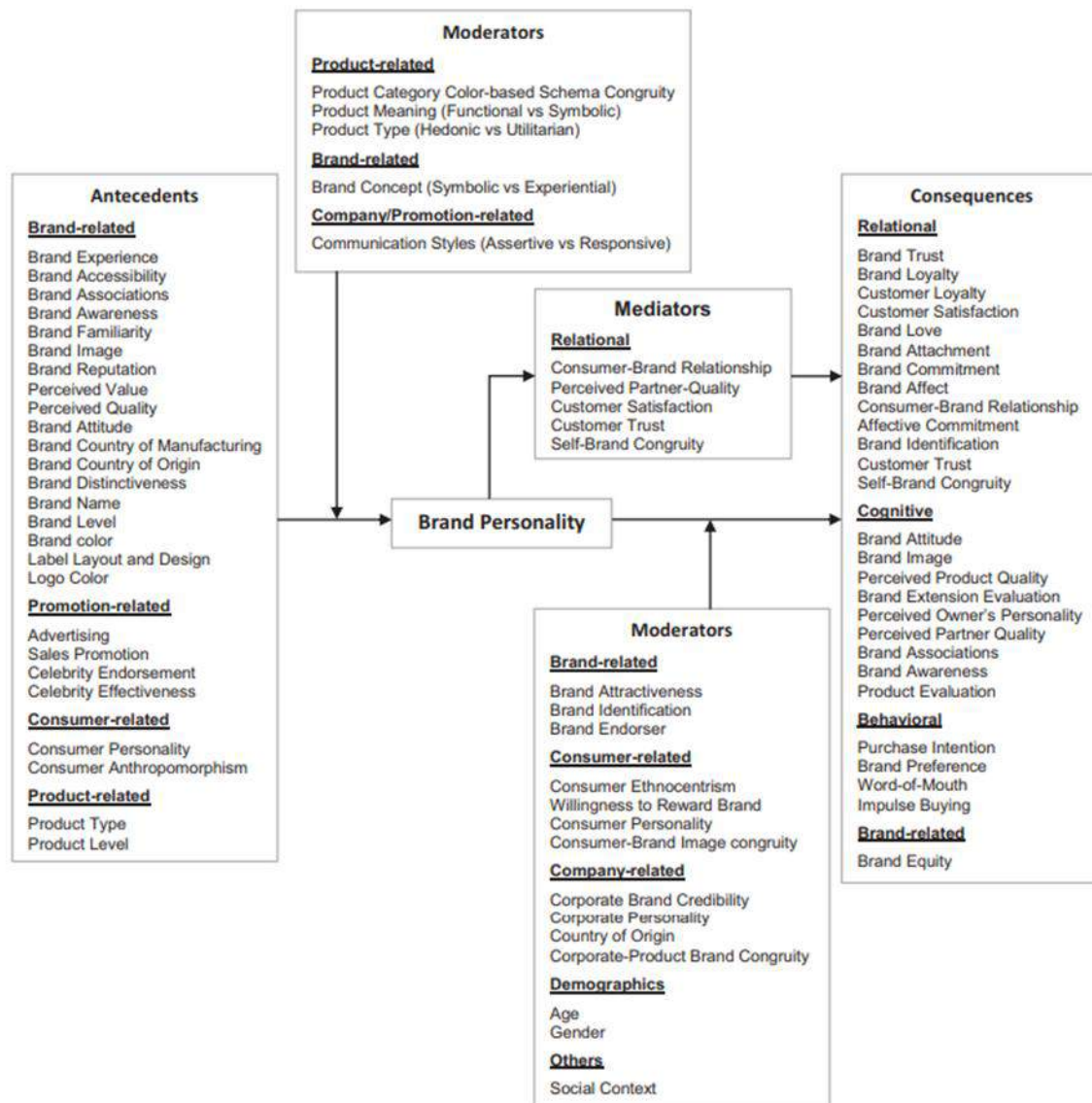


Figure 5: Integrative Model Of Antecedents And Consequences Of Brand Personality

Saeed *et al.* (2021)

Aaker's (1997) Brand Personality Dimensions

Considering the benefits of brand personality to consumers and brand owners, Aaker (1997) developed a scale to measure brand personality. The testing of the scale produces a five-factor model or dimensions namely, sincerity, excitement, competence, sophistication and ruggedness (Loureiro *et al.*, 2014).

Ahmed and Jan (2015) have noted that researchers have employed Aaker's brand personality scale in three directions, firstly the applicability of the scale across countries, secondly is the predictive effects of brand personality and thirdly is the antecedents of brand personality. Although Aaker's (1997) brand personality scale, which highlights various dimensions, has been widely accepted as the scale for measuring brand personality, the scale has certain limitations. Subsequent studies have questioned the scale's ability to be generalised and used across cultures and product categories (Ajeyalemi and Dixon-Ogbechie, 2020; Rauschnabel *et al.*, 2016) as more studies have concentrated on manufacturing sectors rather than service industries (Ahmed *et al.*, 2019). Additionally, Aaker's (1997) seminal paper was developed in the United States of America (USA) and therefore represented its population and culture, which promotes individualism as opposed to collectivism - which is more apparent in African and Asian communities. Moreover, studies have suggested that certain

dimensions such as ruggedness did not appear as part of brand personality, further questioning the use of Aaker's model in different countries (Ahmed *et al.*, 2019). Despite the limitations of this model, the third reason provides sufficient motivation for its adoption in this study.

Anthropomorphism Theory

Based on the intense competition within the industry and as means to capture audience attention and break through the clutter, marketers and advertisers have been encouraged to think innovatively about their marketing and branding strategies. One such way is to humanise a brand – a concept referred to as anthropomorphism (Lee and Oh, 2021). The application of anthropomorphism within marketing communication strategies is validated by Epley *et al.* (2007) who provide evidence to suggest that individuals effortlessly apply anthropomorphic descriptions to non-human agents.

The anthropomorphism theory includes three determinants, namely, elicited agent knowledge, sociality and effectance. The first determinant, elicited agent knowledge, explains the cognitive process of anthropomorphism, highlighting how customers make anthropomorphic judgements towards non-human agents (Lee and Oh, 2021). The sociality dimension focuses on the needs of people to develop connections with others, including the connection with non-human objects. The desire to achieve such relationships with non-human entities is motivated by the fact that customers are more likely to identify and acknowledge human-like traits in a non-human entity. The effectance determinant explains people's motivations to develop effective interactions with their situations by improving the non-human objects predictability while decreasing its uncertainty (Lee and Oh, 2021). Brands that are able to portray human-like characteristics are perceived more positively by consumers (Lee and Oh, 2021). Lee and Oh (2021) further communicate that when there is great uncertainty, and customers are unclear about situations i.e., deciding on which local brand to purchase, they crave anthropomorphism thoughts.

Consumer Brand Relationship Theory

The consumer brand relationship theory explains the relationship between a brand and a consumer. This is found on the assumption that in the minds of consumers, a brand can be humanised to the extent that the brand and the consumers become partners (Loureiro, 2013) The concept of consumer-brand relationship has been a matter of significance among academics in the marketing sphere. Loureiro (2013) states that numerous companies are starting to acquire information in relation to how consumers relate with brands, and the reasons behind why certain brands are preferred over others. The work of Fournier in relation to consumers and brands has been used as a steppingstone in extending, refining and adding new perspectives to the brand relationship theory (Bengtsson, 2003; Crespo *et al.*, 2022).

When analysing both brand personality and brand relationship theory, Avis *et al.* (2012) report that the underlying theories propose that brand personality and brand relationships influence consumer behaviour. Fournier (1998) brand relationship framework suggests that consumer brand relationship quality has a direct impact on whether a consumer will purchase a given brand. Using the consumer-brand relationship theory, Crespo *et al.* (2022) assert that when a good story is told about a brand, consumers build relationships with the brand and these create cognitive, behavioural and emotional responses or outcomes. Thus, it is expected that in the growing competitive higher education industry, the uniquely built brand personality dimensions will improve consumer-brand relationships and create emotional and behavioural outcomes through positive brand attitudes.

The Self-expression Model

The self-expression model is based on the premise that consumers use certain brands as means to reflect or portray their identity. The self-identity can be either the consumer's actual identity or their ideal identity (Aaker, 1996). Aaker (1996) also allude that even though a brand may not exhibit a strong brand personality, consumers may still use their products to express their identity, however stronger brands are known to play key roles in the self-expression process (Aaker, 1996; Phau and Lau, 2000)

The concepts of self-expression which is consistent with the self-congruity theory acknowledges that consumers have a positive attitude towards brands that are self-congruent and exploit these brands as a means to express themselves (Phau and Lau, 2000). The self-expression model can also become an extension of the self to such an extent where it becomes difficult to separate the user from the brand (Phau and Lau, 2000). Consumers often have strong associations with brands that meet their expectations (Tan et al., 2018) and are motivated to maintain relationships with brands that are able to communicate their self-image (Li et al., 2021).

Inasmuch as the terms brand attitude and self-brand connection are similar, and that an earlier study conducted by Ferraro et al. (2013) as communicated by Casidy et al. (2021) illustrate a reciprocal relationship between the two terms where consumers with a strong self-brand connection maintain a favourable view of the brand, Eelen et al. (2017) suggest that self-brand connection, and its favourable outcomes, is dependent on a brand's ability to reflect a consumer's identity. However, Sarkar et al. (2021) opine that this will depend on the moderating effect of brand attitudes.

Self-congruity Theory

Self-congruity is referred to as a match between a product's image and a person's actual self-image (Sirgy, 1985) and is known to positively impact consumer behaviour (Roy and Rabbanee, 2015). Roy and Rabbanee (2015) further suggest that self-congruity is an important concept for marketers to understand as it facilitates positive attitudes towards brands and can affect purchase intention, brand preference and brand loyalty. A consumer's motivation to express or position himself or herself in a certain way can be influential in their purchase of branded products and services. The purchase and consumption of branded products is not only to satisfy physical needs but also psychological needs where self-identity and one's individuality can be conveyed (Roy and Rabbanee, 2015). When the personality of a brand is congruent with consumers identity or values, especially social values, Chieng et al., (2022) found that it leads to brand attachment directly. However, according to Sarkar et al. (2021) and the attitude-behaviour theory, the brand-related outcome may depend on the brand attitudes. Whether these will apply in the university brand personality dimensions, need investigation.

Attitude-behaviour-context Theory

The attitude-behaviour-context (ABC) theory posits that consumers' behaviour is the outcome of the attitude and other contextual factors which include age, gender, culture, and personal interests. The theory also stipulates that a behaviour exhibited by a consumer may be linked to the expected benefits they may derive (Dhir et al., 2021). However, even when benefits are provided, which may be functional, symbolic and social congruency benefits from a brand, Zhang et al. (2018) contend that the behavioural outcomes will only be possible when positive attitudes have been developed. How much the attitude leads to the behaviour and the factors that will close the attitude-behaviour gap are questions that continually need answers. While Rup et al. (2021) suggest that brand attitudes mediate in the relationship between brand personality dimensions and desired behaviours from consumers, Balaji et al. (2016) assert that self-brand connection will act as a moderator before the attitude translates into the behaviour. These relationships can be presented in a conceptual model and a suggestion on how to close the attitude-behaviour gap made and tested.

3. Results and Findings

Sources for various constructs

Constructs	Sources
Prestige	(Rauschnabel et al., 2016)
Sincerity	(Rauschnabel et al., 2016)
Appeal	(Rauschnabel et al., 2016)
Lively	(Rauschnabel et al., 2016)
Conscientiousness	(Rauschnabel et al., 2016)
Cosmopolitan	(Rauschnabel et al., 2016)
Brand Attitude	(Rup et al., 2021)

Self-brand connection	(Balaji <i>et al.</i> , 2016)
Improvement suggestions	(Balaji <i>et al.</i> , 2016)
University affiliation	(Balaji <i>et al.</i> , 2016)
Participation in future activities	(Balaji <i>et al.</i> , 2016)
Brand forgiveness	(Schnebelen and Bruhn, 2018)
Brand happiness	(Schnebelen and Bruhn, 2018)
Brand preference	(Saeed <i>et al.</i> , 2021)
Brand evangelism	(Schnebelen and Bruhn, 2018)
Price premium for the brand	(Schnebelen and Bruhn, 2018)
Brand equity	(Saeed <i>et al.</i> , 2021)

4. Conclusion

This conceptual paper presents a framework that seeks to measure the behavioural and brand related, supportive, and emotional outcomes of university brand personality through the mediating role of brand attitude and the moderating effect of self-brand connection. Previous literature on brand personality commonly refers to the relational consequences, behavioural consequences and brand-related outcomes such as brand equity (Saeed *et al.*, 2021). However, Saeed *et al.* (2021) indicate further powers/ outcomes of university brand personality.

Therefore, the proposed conceptual model can be empirically tested amongst various higher education brands and in different markets and student groups. Doing so will provide marketers and higher education management with knowledge and scientific evidence to validate the implementation of various branding and marketing communication strategies.

5. Managerial Implications

5.1 Practical contribution of the study

The proposed conceptual model offers a notable contribution to future research on university brand personality and can be empirically tested to investigate the behavioural and brand related, supportive, and emotional outcomes of university brand personality. Marketers and university management could use the findings to develop appropriate branding and communication strategies as it will provide them with information on the relevant brand personality dimensions that impact the behavioural and brand-related, emotional, and supportive outcomes of university brand personality. As acknowledged by Su and Tong (2015), there is also great significance in understanding brand personality as it provides a platform for creating and building meaningful relationships with consumers, which ultimately can improve brand equity. Moreover, by investigating the moderating role of self-brand connection, scientific evidence can be obtained to close the attitude-behaviour gap.

5.2 Academic contribution of the study

While the concept of brand personality had existed prior, the seminal work of Aaker (1997) provided a scale to measure brand personality dimensions. Subsequently, this created a springboard for Rauschnabel *et al.* (2016) to develop a measurement theory that relates specifically to university brand personality and identified six university brand personality dimensions. However, Saeed *et al.* (2021) allude that relational consequences, such as brand trust and brand loyalty, behavioural consequences such as purchase intention, and brand-related consequences such as brand equity have been studied. However, it was suggested behavioural and brand-related outcomes need further study. For example, behavioural and brand-related outcomes such as brand evangelism and the willingness to pay a premium price for a brand, require examination in relation to brand personality. Additionally, Saeed *et al.* (2021) found that studies are lacking on the emotional and supportive outcomes of brand personality. The emotional outcomes are particularly important considering that brand personality is an emotional attribute that emanates from a brand and from which consumers are willing to distinctively respond to their liking of the brand personality (Rauschnabel *et al.*, 2016). The overall academic or theoretical contribution of the study is the development of a proposed conceptual model which enriches the model developed by Rauschnabel *et al.* (2016) and can subsequently be used by different higher education brands and among different sample groups.

Recommendations

As a conceptual study, this paper lacks empirical evidence to substantiate the relationships between the various constructs. It is recommended that future researchers test the validity of the proposed framework in various contexts and among different target groups. The empirical evidence obtained will potentially add new points of new discussion to the conversations surrounding university brand personality.

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Exploring Senior Citizens' Perceptions of E-Pharmacy Usefulness and Trust

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Keywords

E-pharmacy; COVID-19; South Africa; Perceived risk; Hedonic value; Utilitarian value; Satisfaction

Abstract

The success of an innovation like an e-pharmacy rests on its massive acceptance by consumers. However, research on this topic in developing countries like South Africa indicates that most older consumers still prefer to access their medication from physical healthcare stations. Research in this field has not adequately addressed the issue of what contributes to the usefulness of e-pharmacies and consumers' trust therein. This study applied the expectation model to understand the factors influencing e-pharmacies' usefulness perception and trust among 350 older South African consumers who have access to the internet and have used e-pharmacies previously. Structural equation modelling was utilised to validate the research measurement model and test the study's hypotheses. The findings suggest that the integrated proposed model provides a better explanation for e-pharmacies' usefulness. Furthermore, the findings suggest that perceived usefulness is influenced by confirmation and utilitarian value. Moreover, perceived usefulness has a significant influence on older consumers' trust in e-pharmacies.

1. Introduction

The internet has transformed our lives, communication, and buying habits and practices. As access to the internet grows, so does its use in healthcare. It is estimated that approximately 4.5% of all internet searches worldwide are related to healthcare queries or information (Srivastava & Raina, 2021). In addition, today's consumers use the internet for more than just reclaiming healthcare information, including self-diagnosis and obtaining various other healthcare-related services and products. E-pharmacy or online pharmacy refers to the trading of medications through a website and distributing them directly to customers (Srivastava & Raina, 2021). The growth of e-pharmacies in recent years has been fuelled by the easy availability of the internet, increased awareness of digital literacy, the shift from physical doctor-patient interaction to self-diagnosis, a surge in the ageing population experiencing difficulty visiting pharmacies, and an integrated e-commerce supply chain. Furthermore, the COVID-19 pandemic has positively impacted the market growth and transformed the fortunes of e-pharmacy companies owing to increased consumer switch from traditional buying to online purchases of general medications and medical devices, such as oximeters, thermometers, and health supplements. Economic Times (2021) reported that the number of households using e-pharmacy services increased by 2.5 times to 9 million during the pandemic. Moreover, the *Online Pharmacy Market-Global Outlook & Forecast (2020)* report confirmed that there is an exponential growth in the e-pharmacy industry in both developed and developing countries. As such, the global e-pharmacy

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market size is expected to reach USD169.3 billion by 2028 and to grow at a compound annual growth rate of over 20% during the 2019–2025 period (Business Wire, 2021). E-pharmacy offers benefits like convenience, time-saving, affordability, and ease in the availability of medicines (Business Wire, 2021).

Despite the benefits of e-pharmacies, evidence shows many consumers – especially those in African countries – still prefer to collect their medication from physical health facilities (Azevedo, 2017). According to Pharma Dynamics (2022:1), in South Africa “internet pharmacies that sell scheduled medication are still by and large considered illegal in our country, despite them having been in operation for nearly 20 years elsewhere in the world”. Nevertheless, only a limited number of studies have investigated the factors influencing the use of e-pharmacies in a developing country context (Anand, Baid, Navin & Ghosh, Arijit., 2021; Chordiya & Garge, 2019; Thalkari, , Karwa, & Gawli., 2018). Furthermore, researchers commonly cite consumer trust as the most significant factor influencing consumers’ use of innovations (Fittler, Vida, Káplár & Botz, 2018; Zhu, Liu, Kapucu and Peng (2020). This is particularly important in the context of e-pharmacies, as understanding the issues explaining consumer trust is critical to promoting the sustained success of this innovation and thus there is enormous room for contributions to this body of research.

Healthcare scholars have identified various studies on the use of health technologies by different demographic groups, especially older people (Berauk, Murugiah, Soh, Sheng, Wong & Ming, 2020; Klimova, 2016). However, limited research has examined the factors contributing to older consumers’ perceived usefulness and trust of e-pharmacies. Considering this gap in present literature, this study aims to identify older consumers’ perceptions of usefulness and trust towards e-pharmacy in a developing country, namely South Africa. Furthermore, prior research (Oghuma, Libaque-Saenz, Wong & Chang, 2016) has identified hedonic and utilitarian values as important drivers of consumer intentions to adopt and/or continue using innovations. Nonetheless, there is limited research examining the extent to which these values influence the usefulness of the innovation. To better understand how the hedonic and utilitarian values that consumers receive from e-pharmacies could explain their perceived usefulness with e-pharmacies, this study integrates hedonic motivation and utilitarian value constructs into the expectation-confirmation model (ECM) to determine how they serve as explanatory variables in e-pharmacy users’ perceptions of risk. Additionally, the conceptualisation and validation of e-pharmacies hedonic and utilitarian values provide new insights into how these factors influence older consumers’ perceived usefulness with e-pharmacies.

2. Literature Review

2.1. Overview of E-Pharmacies

Having recently emerged as a developing industry, e-health refers to the use of electronic health information and services via the internet and mobile technology. These online services enable consumers to obtain various healthcare support and facilities through the use of blogs, online communities, and integrated technology platforms like online healthcare consultation and online pharmacies. Consumers can effectively manage and improve their and their families’ healthcare needs and requirements by using online purchasing platforms (Anad et al., 2021). This shift from traditional to internet-based healthcare services has allowed consumers to better understand the various health conditions that exist and develop a proactive approach to their health (Rains, 2007). Nonetheless, there is an apprehension concerning the use of such services, which influences consumer acceptance and usage patterns. Researchers have argued that online health information lacks credibility and the expertise of those who provide it is questionable (Dutta-Bergman, 2003; Lemire & Wiebe, 2008). Furthermore, consumers have expressed a reluctance to use online health information and services due to concerns about the misuse of personal confidential information (Bansal, Gefen & Zahedi, 2010; Beldad, Jong & Steehouder,2010).

Online pharmacies, also known as e-pharmacies, are made possible by the processes of selling and purchasing pharmaceutical medicines over the internet and delivering them via the e-commerce supply chain. Medicines are classified as prescription medicines that require a doctor’s prescription to be dispensed, or non-prescription medicines (also known as over-the-counter medicines), which do

not need prescriptions. For the past few years, the digital pharmacy has been identified as the next disruptor of healthcare delivery. While hospitals, pharmaceutical companies, non-governmental organisations, other platform providers, and consumers recognise the promise and need for a digital interface, it lacks the motifs needed to accelerate implementation (Frost-Sullivan, 2020). Before COVID-19, more than 67% of people worldwide researched their health problems online, while nearly 59% used consumer health goods to treat acute conditions (Frost-Sullivan, 2020). Patients' use of non-prescription healthcare and health-monitoring technology has created an ecosystem where the journey into the digital sector is transitioning to consumer healthcare. Falling behind on internet skills may have long-term consequences for seniors. For example, more health appointments, services, and products are migrating online, as many of us experienced during the pandemic.

2.2. Benefits of E-Pharmacies

E-pharmacies are beneficial to both healthcare facilities and consumers. With the introduction of e-pharmacies, healthcare institutions have been able to enhance customer services and enjoy operational efficiencies by shifting the focus from dispensing medication to providing services requiring human interaction (Cho et al., 2016). The use of e-pharmacies has enabled some healthcare institutions to offer services timely, reduce queues, and meet their clients' expectations. Moreover, this innovation has enabled healthcare institutions to reduce their expenditure on hiring staff and purchasing office furniture, fittings, and stationery.

E-pharmacies are a technological advancement that can bridge the gap for consumers by providing them with affordable and easy access to medications delivered to their homes at the click of a button, as well as offering appropriate medical remedies (FICCI, 2016). Furthermore, instead of handwriting or calling in prescriptions, doctors and medical practitioners can use e-prescribing to write and send prescriptions electronically to participating pharmacies (Sonawane, Ramesh & Mahajan, 2020). Srivastava and Raina (2020) highlighted e-pharmacies' willingness to reach numerous consumers despite their lack of geographic location. E-prescribing has the potential to improve patient safety, pharmacy workflow, and prescriber-patient contact (Mahesh, Samuel, Bag & BG, 2020). E-pharmacies reduce the number of dealers in the long chain of drug distribution, saving money and time, while still providing lower-cost medication to end users (Moparty & Irene, 2020). Individuals who live far away from a traditional pharmacy as well as the elderly, disabled, and others who are unable to travel to a traditional pharmacy can benefit from the speed and convenience with which medications can be purchased online (Chordiya & Garge 2019).

2.3. Elderly Consumers and Technology Use Behaviour

Technology is believed to improve the elderly's daily lives and maintain their health efficiently. According to a report from the United Nations, the number of people aged 60 and over will increase by 56% between 2015 and 2030, growing from 901 million to 1.4 billion (Dugarova, 2017). This suggests that older consumers are becoming more important to economies. Innovative products, such as e-pharmacies enabling self-service, have been introduced by underscoring the benefits for older consumers. However, older consumers are still hesitant and have lower intentions to adopt compared to younger consumers. Park, Kim & Sen (2020) stated that older consumers are resistant to new technology and do not want to change their lifestyles. Nevertheless, the COVID-19 pandemic has changed older consumers' behaviour towards the use of technology. Research shows that older consumers' technology use accelerated during this period, as many suffered from isolation, loneliness, and being less mobile. As a result, older consumers have been using their devices and the internet as helpful tools. Moreover, research indicates that older consumers with smartphones have increased their usage.

According to the 2020 Euromonitor International report, the most popular weekly online activities embraced by people above 60 are: online browsing (81%), visiting online news sites (72%), visiting and updating social networking sites (60%), and using a banking service on a mobile phone (45%). Other weekly online activities, such as making in-store mobile payments (24%), visiting health-related or medical sites (23%), taking part in online video gaming (21%), online streaming of music (19%), and buying groceries online (13%), are less popular among the elderly. Furthermore, there has been an increase in the use of technology for health-related activities among older consumers, with

70% of the respondents admitting that they have used a remote consultation app, purchased medical supplies online, and been in contact with someone in the health sector – although there are still a somewhat smaller share of seniors doing this, compared to younger generations. Additionally, due to the COVID-19 pandemic, many of these older consumers realised the benefits of the digital world when they were forced to stay in contact with family and friends as well as to do their shopping online. This relatively wealthy age group became more familiar and comfortable with technology and the use of online services.

3. Conceptual Model and Research Hypotheses

Figure 1 demonstrates the relationships between the constructs in this study.

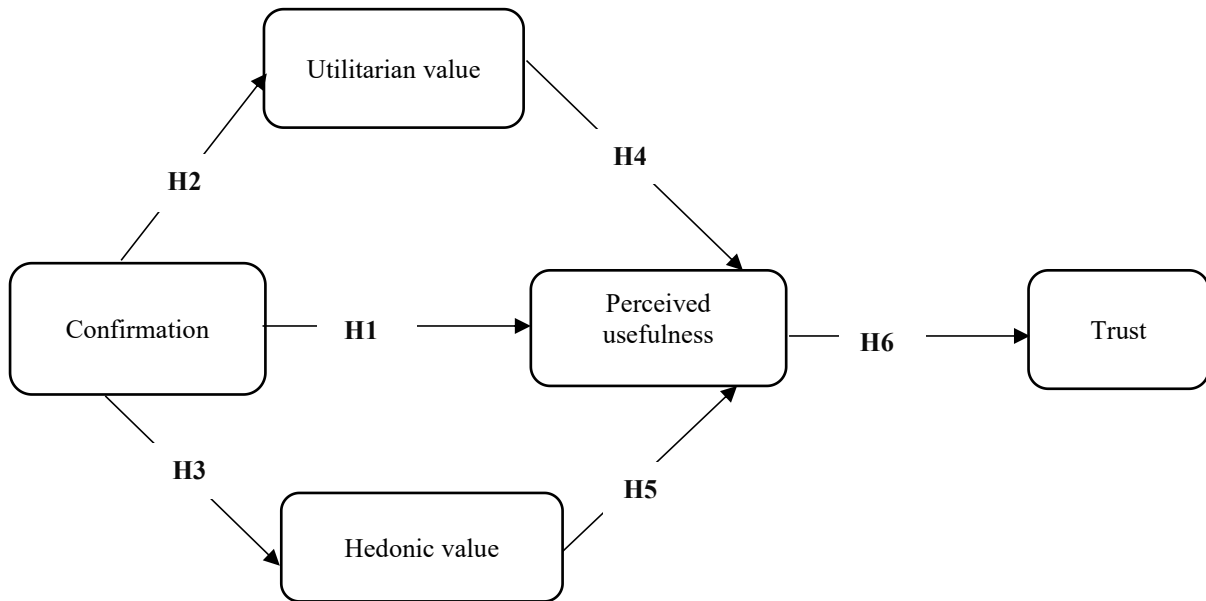


Figure 1: Conceptual Model
(Source: Author's compilation)

3.1. Confirmation

Confirmation refers to the level at which actual usage experience confirms consumers' initial expectations (Mogil & Macleod, 2017). In the e-pharmacy context, confirmation is described as the confirmation of users' initial expectations of e-pharmacy services. Mogil and Macleod (2017) stated that customer expectations serve as a benchmark against which current and future service encounters are measured. According to Brown, Venkatesh and Goyal (2014), users' degree of confirmation has a beneficial impact on their perception of technology's utility. Several studies (Bhattacharjee 2001a; Tam, Santos & Oliveira 2020; Zhou, 2017) underscore the significant role of confirmation on perceived usefulness, hedonic and utilitarian values (Oghuma et al, 2016) in various m-commerce contexts. As a result, this study suggests that:

- H1: Confirmation has a significant, positive influence on older consumers' perceived usefulness of e-pharmacies.
- H2: Confirmation has a significant, positive influence on older consumers' hedonic value.
- H3: Confirmation has a significant, positive influence on older consumers' utilitarian value.

3.2. Utilitarian Value

Utilitarian value is defined as the customers' overall assessment of the usefulness of goods or services based on the expectations of what is offered in exchange for what they pay. In e-pharmacies, utilitarian value is described as the judgement of functional benefits, such as the convenience of purchasing medication online any time and the lower costs associated with online purchases. In an e-pharmacy context, utilitarian value is described as the view of functional benefits, such as time-saving, discounts, the convenience of buying medication online, and product features. In e-commerce

literature, utilitarian value has been identified as an important variable in determining technology usefulness (Kautish & Sharma, 2018; Keszey, 2020). Kautish and Sharma (2018) argued that most consumers choose mobile shopping for utilitarian reasons, such as time-saving, price-saving/discounts, service convenience, and merchandise selection/assortment. Based on this argument, this study proposes that:

- H4: Utilitarian value has significant, positive influence on consumers' perceived usefulness of e-pharmacies.

3.3. Hedonic Value

Hedonic value is defined as a complete assessment (i.e., judgement) of the costs and benefits of experiences, such as entertainment and amusement. In this context, hedonic value is defined as the pleasurable experience of using e-pharmacies. Research shows that consumers usually shop online for fun (Şener, Ateşoğlu & Coşkun, 2018). Entertainment is a hedonic element of e-commerce that is used to retain customers' attention and create a positive view of the brands/products (Picot-Coupey, Krey, Huré & Ackermann, 2021). The relationship between online shopping activities and hedonic value has been analysed in marketing literature (Edem Amenuvor, Owusu-Antwi, Basilisco & Seong-Chan, 2019). Hedonic pleasure increases online shoppers' satisfaction and usefulness of a website or a shopping app, resulting in customers spending more time browsing for other items. Thus, this study suggests that:

- H5: Hedonic value has a significant, positive influence on consumers' perceived usefulness of e-pharmacies.

3.4. Perceived Usefulness

Perceived usefulness is defined as "the extent to which a person believes that a system enhances his or her performance" (Davis, 1989: 320). From an e-pharmacy perspective, if users feel that using an online pharmacy is useful, they will have trust in it. Empirical research supports the positive impact of perceived usefulness on users' trust (Amin, Rezaei, and Abolghasemi, 2014; Chinomona, 2013; Wilson, Ket & Tan, 2021), arguing that when customers believe that a new technology gives them added value, they put trust in it. In a study to examine the role of perceived usefulness towards trust of online consumers in China, Wilson et al. (2021) found that perceived usefulness has a positive influence on users' trust. Hence, this study proposes that:

- H6: Perceived usefulness has a significant, positive influence on users' trust of e-pharmacies.

4. Methods

4.1. Measurement

The study employed an electronic questionnaire. The construct-measurement items were adapted from previous related studies. The measurement items for confirmation, perceived usefulness, and trust were adapted from Bhattacharjee (2001a). All the primary constructs were measured with reflective items adapted from Arnold and Reynolds (2003), Babin, Darden, & Griffin (1994), and Chiu, Fang, Cheng & Yen (2013). To measure this, this study applied a Likert scale ranging from 1 ("strongly disagree") to 7 ("strongly agree").

4.2. Sampling, Data Gathering, and Sample Characteristics

The study's population was defined as South African consumers aged 50 years and older who had previously used an e-pharmacy at least once. Since no sample frame was available, participants were chosen using a non-probability sampling technique known as convenience sampling. The first page of the online questionnaire had a consent form clarifying the aim of the research and the rights of the participants. Thereafter, a screening question asked potential respondents if they were above 50 years old and had used the e-pharmacy before. Those who answered "yes" to the screening question were guided to the rest of the online survey, while those who answered "no" were thanked for their time but denied participation because they did not meet the inclusion criterion. Self-administered online

questionnaires were used to collect the data. Based on the gender distribution of the sample, there were 176 (52.2%) females, 150 (44.5%) males and 10 (3%) who indicated “other”. In total, 69 (20.5%) participants reported having a household income of ZAR5 001–ZAR10 000. Of the sample, 210 (62.3%) participants were African, 34 (10.1%) were coloured, 25 (7.4%) were Indian/Asian, 65 (19.3%) were white, and a further three people (0.9%) selected “other”. In terms of age, 71.5% of the sample were aged 50–60, 21.7% were aged between 61–70, and 1.2% were aged over 70. Eighteen people chose not to disclose their age.

5. Data Analysis and Results

5.1. Validation of Scale

The validity of the reflective measurements and the formative measures was conducted to determine the reliability and validity of the proposed measurement model. The measurements’ validity was evaluated using convergent and discriminant validity. The convergent validity was evaluated using standardised factor loadings, Cronbach’s alpha, composite reliability (CR), and average variance extracted (AVE). The results presented in Table 1 indicate that factor loadings were greater than 0.7. The Cronbach’s alpha for the internal consistency of reliability and the CR estimates all exceeded the 0.7 threshold, and the AVEs for each of the constructs are all greater than 0.5 (Hair, Sarstedt, Ringle, & Gudergan, 2018). As a result, the reflective constructs were proven statistically to be acceptable and reliable.

Table 1: Convergent Validity of the Constructs

Confirmation: CR = 0.8990, AVE = 0.7480, Cronbach’s alpha = 0.8330	
CON1 My experience with using an online pharmacy was better than what I expected.	0.866
CON2 The service level provided by an online pharmacy was better than I expected.	0.891
CON3 Overall, most of my expectations from using the e-pharmacy were confirmed.	0.837
Perceived usefulness: CR = 0.9090, AVE = 0.7700, Cronbach’s alpha = 0.8500	
PU1 E-pharmacies would be useful for my medication collection.	0.887
PU2 E-pharmacies would enable me to collect my medication quickly.	0.839
PU3 E-pharmacies will make things easier for me.	0.904
Trust: CR = 0.8610, AVE = 0.7860, Cronbach’s alpha = 0.7860	
TR1 I have confidence in third parties to protect me against any potential risks (e.g., leaking of personal information) of online pharmacies.	0.782
TR2 I am sure that I cannot be taken advantage of (e.g., leaking of personal information) because of using an online pharmacy.	0.827
TR3 I am confident that the e-pharmacies provide correct medication.	0.853
Hedonic value: CR = 0.8540, AVE = 0.6620, Cronbach’s alpha = 0.7490	
HV1 To me, using an online pharmacy is very pleasant/fun.	0.836
HV2 Online pharmacies are fun and enjoyable	0.807
HV3 I get excited when I received my medication from the online pharmacy	0.797
Utilitarian value: CR = 0.8650, AVE = 0.7870, Cronbach’s alpha = 0.9170	
UV1 Using an online pharmacy saves time.	0.877
UV2 Using an online pharmacy enables quick service.	0.900
UV3 Using an online pharmacy enables me to get my medication more easily	0.885

Discriminant validity was confirmed using the heterotrait-monotrait (HTMT) criteria because the HTMT ratios of correlation realised for the constructs are less than the strict threshold (Henseler, 2018) guidelines. The HTMT construct values were measured against the threshold of 0.85 (correlation value). The results in Table 2 indicate that all construct values are below the 0.85 threshold, thus confirming discriminant validity.

Table 2: Discriminant Validity – HTMT Criteria

		1	2	3	4	5
1	Confirmation					
2	Hedonic value	0.780				
3	Perceived usefulness	0.764	0.728			
4	Trust	0.560	0.797	0.524		
5	Utilitarian value	0.713	0.874	0.828	0.610	

5.2. Structural Model and Hypotheses Testing

5.2.1. Collinearity Diagnostics

The results of the collinearity diagnostics are presented in Table. The variance inflation factor (VIF) values ranged from 1 (hedonic value, utilitarian value, and trust) to 2.247 (perceived usefulness). These estimates are below the critical VIF threshold of 5, suggesting that collinearity does not pose a threat to the structural model analysis.

Table 3: Collinearity Assessment: VIF

	Confirmation	Hedonic value	Perceived usefulness	Trust	Utilitarian value
Confirmation		1	1.819		1
Hedonic value			2.322		
Perceived usefulness				1	
Trust					
Utilitarian value			2.247		

5.2.2. Hypotheses Testing

The analysis of the structural model was also accomplished using the partial least squares structural equation modelling (PLS-SEM) technique via SmartPLS 3. The results of the PLS-SEM of the structural model analysis are presented in Table 4 and Figures 2 and 3.

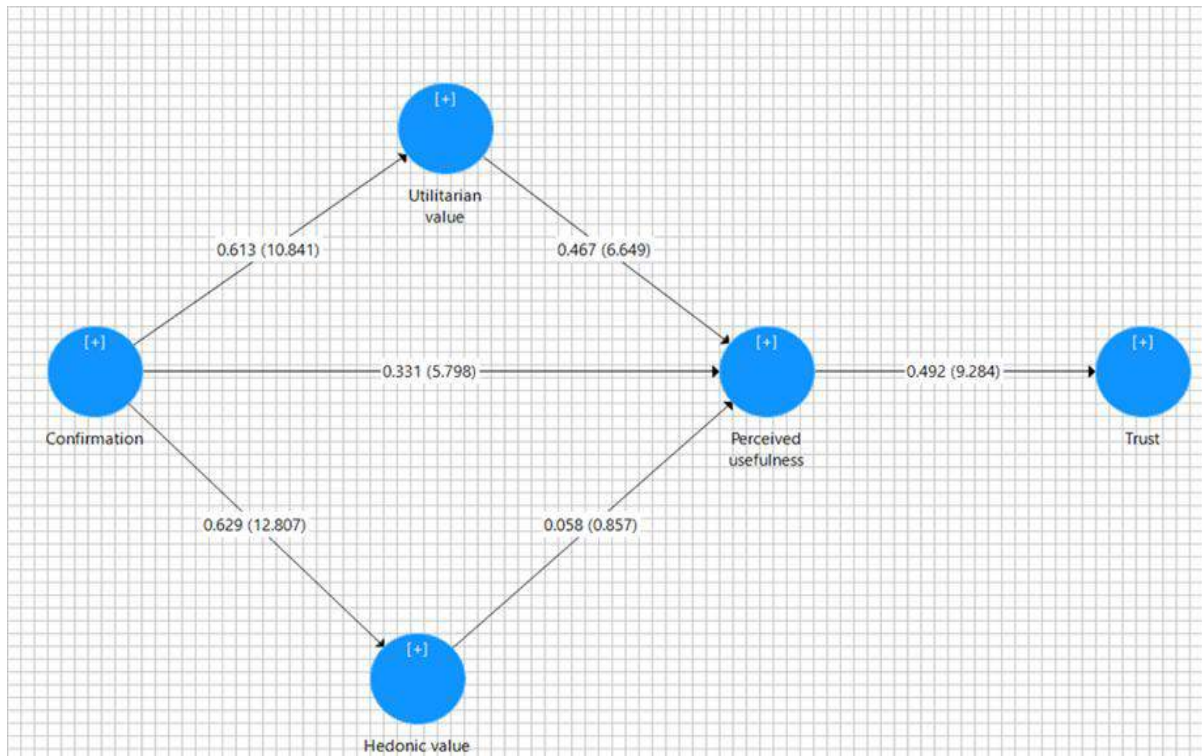


Figure 2: Structural Model with Path Coefficients with p-Values

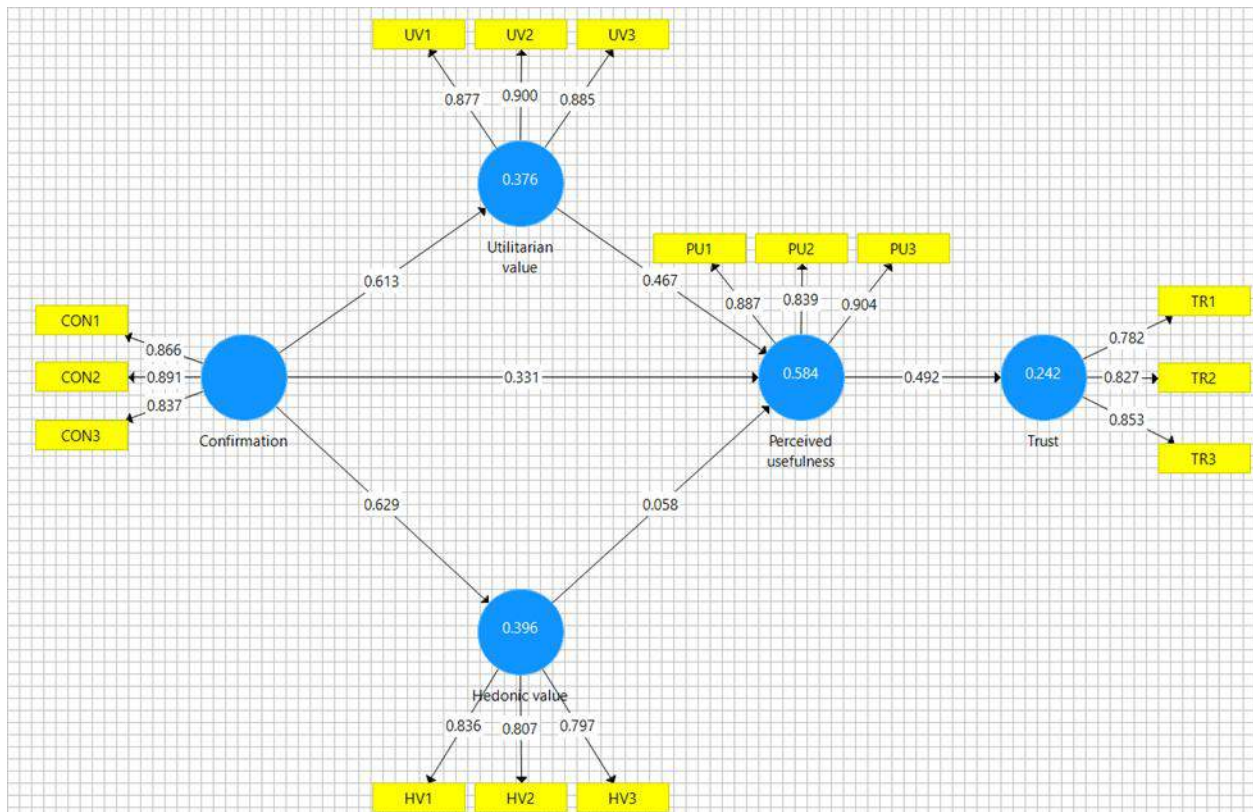


Figure 3: Structural Model Analysis with Path Coefficients and R2 Estimates

Table 4: Summary of the Results of the Hypotheses Testing

	Path coefficient	t statistics (O/STDEV)	p-values
Confirmation -> Perceived usefulness (H1)	0.331	5.766	0.000
Confirmation -> Hedonic value (H2)	0.629	12.561	0.000
Confirmation -> Utilitarian value (H3)	0.613	10.651	0.000
Utilitarian value -> Perceived usefulness (H4)	0.467	6.600	0.000
Hedonic value -> Perceived usefulness (H5)	0.058	0.837	0.403
Perceived usefulness -> Trust (H6)	0.492	9.147	0.000

6. Results Discussion

The results confirm a positive and significant relationship between confirmation and perceived usefulness, providing support for H1 ($\beta = 0.331$, $t = 5.766$, $p < 0.000$). This is consistent with the arguments under the ECM (Bhattacharjee, 2001b) and aligns with the results of previous research (Oghuma et al., 2016; Tam et al., 2020). These findings mean that if e-pharmacy users' expectations are confirmed, they will find e-pharmacies to be useful. The results of this study further indicate that there is a strong and positive relationship between confirmation and hedonic value, providing support for H2 ($\beta = 0.629$, $t = 12.561$, $p < 0.000$). These findings are consistent with researchers (Oghuma et al, 2016), implying that customers' expectations of the hedonic value of using mobile shopping are confirmed. This finding is in line with that of Oghuma et al. (2016), proving that a significant relationship exists between confirmation and perceived enjoyment. Furthermore, the results of this study confirm that confirmation is positively associated with utilitarian value, providing support for H3 ($\beta = 0.613$, $t = 10.651$, $p < 0.000$). These results are in line with extant research (e.g., Oghuma et al., 2016), where a positive relationship between utilitarian value and confirmation has been noted consistently. These findings imply that e-pharmacy users' expectations of time-saving, price-saving/discounts, service convenience, and merchandise selection/assortment are confirmed.

Furthermore, the study's findings indicate that utilitarian value and perceived usefulness are positively associated, thus providing support for H4 ($\beta = 0.467$, $t = 6.600$, $p < 0.000$). These results are consistent with prior research (e.g., Evelina, Kusumawati & Nimran, 2020) and denote that if

consumers find e-pharmacies to be helpful in providing functional benefits for their health needs, they are more likely to perceive them as useful. However, the findings show that the relationship between hedonic value and perceived usefulness is not significant, thus H5 is not supported ($\beta = 0.058$, $t = 0.837$, $p > 0.01$). These findings are inconsistent with the findings of Inani et al. (2020) but align with those of Basilisco and Seong-Chan (2019). This proves that older consumers are not looking for fun/pleasure when using e-pharmacies. Consequently, hedonic features do not make e-pharmacies useful to this customer segment. Lastly, the findings confirm a significant positive relationship between perceived usefulness and trust, which supports H6 ($\beta = 0.492$, $t = 9.147$, $p < 0.000$). These findings are consistent with the results of Wilson et al. (2021) and denote that if consumers feel that e-pharmacies are useful, they tend to trust the innovation.

7. Managerial and Theoretical Implications

This study's empirical findings provide the basis to actively bolster older consumers' perceptions of e-pharmacies' usefulness and promote their trust with e-pharmacies. The analysis from the structural model resulted in two factors that influence e-pharmacies usefulness, namely utilitarian value and confirmation. The conclusion drawn from the findings is that older citizens generally perceive e-pharmacies to be useful if their initial expectations are met. Furthermore, they perceive e-pharmacies as useful because of the utilitarian features associated with the use thereof. Since utilitarian value is so significant, e-pharmacy service providers should prioritise providing basic utilitarian value before focusing on other attributes of the e-pharmacy website. This can be achieved by offering accurate, useful product information and the acquisition of desired products. Consequently, for e-pharmacy service providers to increase the utilitarian appeal, they should invest more resources into developing e-pharmacy sites characterised by rich product information of medication, medical records, online medical consultation, convenience of buying medication any time and anywhere, and availability of various medications for purchase. The study further underscores the significance of usefulness to promote trust of e-pharmacies. This implies that consumers will trust e-pharmacies if they believe that they are helpful and assist them in overcoming their health-related issues. Thus, e-pharmacy retailers have a responsibility to emphasise the benefits and usefulness of e-pharmacies if they aim to gain the trust of older consumers. This can be achieved by advertising e-pharmacies as a useful innovation that is aimed at solving customer problems. E-pharmacy service providers could introduce awareness campaigns where older consumers are informed about e-pharmacies, its benefits, and how it will make their lives easier compared to the traditional health system.

The findings of the study make significant contributions to e-commerce research. First, the proposed integrated research model provides a fairly good explanation of e-pharmacies' usefulness and has a robust predictive power as the factors together explain 58.4% of the variance. This is higher than the variance explained in study of Joo and Choi (2016), which was 20%. Second, as far as is known, this is the first study to explore the usefulness of e-pharmacies from the perspective of an emerging African economy (i.e., South Africa) using an integrated model that combines theoretical factors from literature on ECM, utilitarian value, hedonic value, and trust. Lastly, in the ECM, confirmation is the only variable predicting usefulness. The findings of this study confirm utilitarian value as an additional important explanatory variable of perceived usefulness. The addition of this variable plays a significant role in increasing the predictive power of usefulness ($R^2 = 58.4\%$) over that of the original ECM (i.e., 21%), which only had confirmation as a predictor of usefulness. Therefore, this study significantly adds value to literature by incorporating utilitarian value as a vital variable with the ability to explain usefulness and increase the predictive power of perceived usefulness in the ECM.

8. Limitations and Recommendations for Future Research

While this empirical study makes several contributions to a better understanding of e-pharmacies' perceived usefulness, it has a number of limitations, proposing that there is a need for further research. First, the study only investigates positive predictors of e-pharmacies' usefulness and trust, and ignores the potential barriers that exist. Future studies should investigate the negative factors that might influence the trust and usefulness of this innovation and the trust of consumers. Further research could integrate negative factors, such as the perception of privacy risk, into the model. Second, this study

was conducted among older consumers in South Africa. To better generalise findings, future research could duplicate the study in other countries and in different age groups.

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Understanding Consumer Adoption of Podcast Marketing

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Keywords

podcast marketing,
podcast adoption,
information adoption
model, source
credibility

Abstract

This study investigated the factors that influence the adoption of podcast marketing among consumers in Gauteng Province, South Africa. A conceptual model with theoretical roots in the information adoption model (IAM) was proposed and tested using data acquired from 382 customers who were users of podcast marketing. A partial least squares structural equation modelling technique was used to assess the validity of the measurement model and to test the hypotheses proposed for the research. The results suggested that the extent to which consumers find a podcast to be useful had a significant and positive impact on their adoption of podcast marketing. The source's credibility also had an impact on the adoption of podcast marketing, and the argument's quality also exerted a significant positive influence on the adoption of podcast marketing among consumers. The implications of these findings, both managerial and scholarly, are highlighted in the paper.

1. Introduction

Communication has proved not only to be a fundamental aspect of marketing, but also instrumental in the success of a company (Brunello, 2013; Mkhize & Ellies, 2020). The new communication tools that have emerged through the development of technology are referred to as 'digital communication tools', and include Instagram, Twitter, Facebook, and other online social networks that people use, as well as virtual platforms such as websites and microblogs (Cizmeci & Ercan, 2015; Fraccastoro, Gabrielsson & Pullins, 2021). One of the less-researched platforms that has gained a lot of popularity in the past ten years is podcasts. These are information-based online broadcasts that are made available for live listening or downloading and that recent studies have shown continue to grow in popularity (Samuel-Azran, Laor & Tal, 2019). Podcasts are thus digital media files that consist of audio recordings that are usually compiled and released as a series. Organisations use podcasts to describe their businesses and products or offer any other information that may interest their customers (Gokhale, 2016).

Several investigations have been carried out on podcasting in diverse areas of specialisation. For example, Chang and Cevher (2007) explored the conceptual models of podcast marketing in the advertising sector, while Mou and Lin (2015) investigated the adoption of podcasts from the perspective of the theory of planned behaviour in the field of education. Samuel-Azran *et al.* (2019) researched the socio-demographics of podcasts in the high-technology industry, while Rockhill, Pastore and Johnston (2019) investigated the effectiveness of podcasts in the field of sports management. Such previous studies have illuminated the concept of podcast marketing and made a meaningful contribution to theory development. However, there is limited research on understanding the consumer adoption of podcast marketing, particularly from a developing country perspective. Therefore, the aim of this study is to investigate the factors that lead to the consumer adoption of podcast marketing.

2. Problem Investigated

Podcast marketing is continually attracting interest from a variety of scholars (Chang & Cevher, 2007; Zahay & Fredricks, 2009; Mou & Lin, 2015; Rockhill *et al.*, 2019; Samuel-Azran *et al.*, 2019). An analysis of the literature reveals that, thus far, most studies have focused on the reasons for users to listen to podcasts (Gay, Bemrose-Fetter, Bracey & Cain, 2007), the role of podcast marketing in

specialised advertising (Chang & Cevher, 2007), student learning (Harris & Park, 2008; Rockhill *et al.*, 2019) and behavioural intention (adoption) (Mou & Lin, 2015) in different market areas.

However, scholars have not given much attention to understanding consumers' adoption of podcast marketing in developing countries (Saeed, Yang & Sinnappan, 2010; Bezbaruah & Brahmabhatt, 2022). Indeed, to the present author's knowledge, no such study has been conducted thus far in South Africa. Understanding the drivers of consumers' adoption of podcast marketing is important for promoting the widespread acceptance of the technology. Nonetheless, most studies on podcast marketing have focused on the profile of customers using podcast marketing or on the evolution of content marketing that leads to podcast marketing (Gokhale, 2016; Samuel-Azran *et al.*, 2019). Therefore, this study addressed two gaps: first, it illuminated the factors that influence consumers' adoption of podcast marketing in the context of developing countries, specifically South Africa; and second, this study sought to apply the information adoption model (IAM) in the podcast marketing technology sphere. Previous scholars have used other models (Kang & Gretzel, 2012; Mou & Lin, 2015; Merhi, 2015; Ho, Chou & Fang, 2016) than the IAM.

The following research question was thus formulated to bridge these gaps:

- What are the factors that influence consumers' adoption of podcast marketing?

3. Research Objectives

3.1. Research aim

The aim of this study was to determine the factors that influence consumers' adoption of podcast marketing in South Africa.

3.2. Research objectives

The following objectives were formulated to address the aim of this study:

- To examine the factors influencing South African consumers' adoption of podcast marketing, using the information adoption model (IAM).
- To examine the validity of the IAM in the podcast marketing technology domain.

4. Hypotheses

The following hypotheses were formulated for the study:

- H1: Source credibility is significantly and positively related to podcast marketing adoption.
- H2: Source credibility is significantly and positively related to the usefulness of information.
- H3: Usefulness of information is significantly and positively related to podcast marketing adoption.
- H4: Argument quality is significantly and positively related to podcast marketing adoption.
- H5: Argument quality is significantly and positively related to the usefulness of information.

5. Literature Review

Two sections cover this area: the theoretical background, and a research model and the relationship between the constructs.

5.1. Theoretical Background

The theoretical background of this study was rooted in the information adoption model (IAM) (Sussman & Siegal, 2003). According to this model, the usefulness of information is consequential in determining users' adoption of technology. The model also posits that the usefulness of information mediates between influence outcome (the adoption of technology) and the constructs of argument quality and source credibility. Based on this theory, we proposed a conceptual model (Figure 1) that posits that the source credibility of information and the argument quality will influence the information usefulness of the podcast. The conceptual model further posits that the use of information

will influence the adoption of podcast marketing. Last, the model posits that source credibility and argument quality will influence the adoption of podcast marketing.

5.2. Research Model and Relationship between Constructs

5.2.1. Research Model

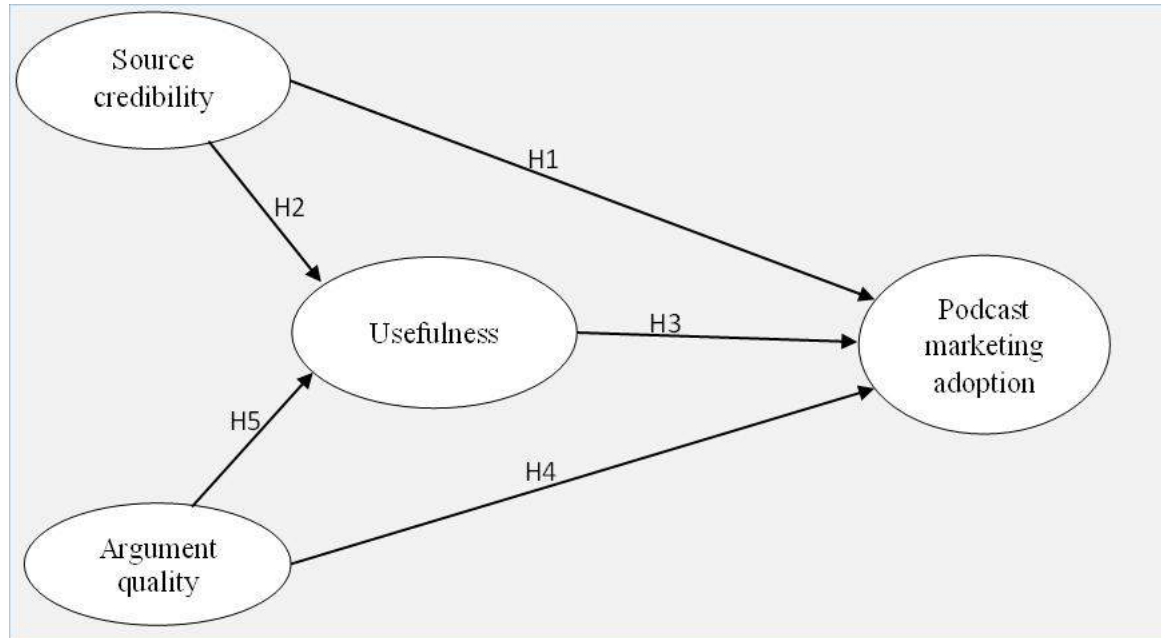


Figure 1: Proposed research model

5.2.2. Relationship between Constructs

The relationships between these constructs and the hypotheses (presented in section 4 above) are discussed below.

Source credibility and podcast marketing adoption

‘Source credibility’ refers to the degree to which a source of information is regarded as believable, competent, and trustworthy by those receiving that information (Jamil & Qayyum, 2021). According to Abu-Taieh, AlHadid, Masa’deh, Alkhaldeh, Khwaldeh and Alrowwad (2022), source credibility is one of the most influential factors in information adoption. Numerous studies have consistently shown a significant and positive relationship between source credibility and podcast adoption (Ayeh, Au & Law, 2013; Ayeh, 2015; O’Reilly, MacMillan, Mumuni & Lancendorfer, 2016; Bezbaruah & Brahmabhatt, 2022). A study by Ismagilova, Slade, Rana and Dwivedi (2020) found that the source credibility of electronic word-of-mouth (eWOM) communications significantly influences information adoption. Thus Hypothesis 1 (presented in section 4 above) is proposed.

Source credibility and usefulness

Based on the study of Wu and Wang (2011), source credibility indicates how much the message’s recipient believes in the sender. Furthermore, they suggested that, if the source has credibility, consumers will believe the message. Thus credibility is how much the message reflects reality as evaluated by the consumer. Accordingly, various studies have established a significant and positive relationship between source credibility and usefulness (Ayeh et al, 2013; Kang & Namkung, 2019; Lee, 2021; Srimulyo, 2021). A study by Jamil and Qayyum (2021) among YouTube users (both influencers and consumers) found source credibility to be significantly and positively related to usefulness. Therefore, Hypothesis 2 (presented in section 4 above) is proposed.

Usefulness and podcast marketing adoption

According to Bansah and Agyei (2022), ‘usefulness’ relates to the degree to which a person believes that using a particular system would enhance his or her job performance. Tavitiyaman, Zhang and

Tsang (2022) suggested that usefulness is one of the major motivations of informational technology acceptance. Researchers have consistently demonstrated that the usefulness of information leads to the intention to use and to the adoption of technology (Merhi, 2015; Hussain, Ahmed, Jafar, Rabnawaz & Jianzhou, 2017; Nayanajith, 2021; Bansah & Agyei, 2022). A study by Wei and Ram (2016) of employees in a case study global company found usefulness to be significantly and positively related to podcast marketing adoption. Thus Hypothesis 3 (presented in section 4 above) is proposed.

Argument quality and podcast marketing adoption

‘Argument quality’ refers to the quality or strength of the information received. When the information has strong arguments, recipients of that information will develop a positive attitude towards it (Mendes-Filho & Tan, 2009). Arguments that are supported by data provide an informative basis and reasons for a person to accept them (Kim & Kim, 2019). Xu and Yao (2015) found that argument quality positively influences adoption. Furthermore, researchers have consistently demonstrated that a strong argument quality leads to the adoption of information or technology (Wang, Liu & Fan, 2011; Hussain *et al.*, 2016; Tseng & Wang, 2016; Shankar, Jebarajakirthy & Ashaduzzaman, 2020). A study by Zhang, Li and Fan (2019) of online health communities in China found that argument quality was significantly and positively related to adoption. Thus Hypothesis 4 (presented in section 4 above) is proposed.

Argument quality and usefulness

Aghakhani, Oh and Gregg (2017) posited that argument quality leads to the usefulness of information. Further research has established a significant and positive relationship between argument quality and usefulness (Chang, Yu & Lu, 2015; Cheng & Ho, 2015; Li, 2015; Shen, Zhang & Zhao, 2016). In a study of electronic word-of-mouth (eWOM), Rofianto, Kornelys and Rifkhansyah (2017) found that the higher the quality of information or argumentation is perceived to be, the more useful that information or argument will be to its recipients. Last, Zhu, Chang and Luo (2015) investigated the influence of consumer-to-consumer (C2C) communication on consumers’ purchase decisions in online communities and found argument quality to be significantly and positively related to usefulness evaluation. Therefore, Hypothesis 5 (presented in section 4 above) is proposed.

6. Research Methodology

6.1 Measurement

A self-administered, paper-based questionnaire was the main measurement instrument used in this study. The questionnaire comprised two sections. The first section contained questions on demographic information of the respondents such as age, education level, income, and podcast use. These variables were measured on nominal and interval scales. The second section of the questionnaire consisted of multi-item scales measuring the constructs of interest in the study, using a seven-point Likert scale with anchors ranging from 1 “Strongly Disagree” to 7 “Strongly Agree”. All of the scales were selected and adapted from the study of Bhattacharjee (2001).

Prior to fielding, the questionnaire was pre-tested on a convenient sample of 45 respondents to ascertain the clarity of the instructions and the wording of the questions/statements. The results of the pilot test indicated that the respondents generally understood the questionnaire’s instructions and wording.

Reliability analysis was conducted with the pilot sample to determine the internal consistency of the items in measuring each construct. The results of this analysis showed that Cronbach’s alpha for all of the constructs was above the 0.7 threshold, thus indicating that the measurement items for the constructs were internally reliable. With this positive feedback, the questionnaire was finalised for the data gathering.

6.2. Sampling and data gathering

The population of the study was defined as South African consumers in general. To meet the selection criteria, the potential participants had to be 18 years or older, had to be residents in Gauteng at the time of the survey, and had to have listened to a podcast. A non-probability convenience sampling

technique was used to select the participants. Trained research assistants approached potential participants in their homes and in public parks and workplaces. The research assistants first introduced themselves, and then explained the purpose of the study and the ethical measures implemented to protect anonymity, confidentiality, and the right to withdraw from participation. Participants were also informed about their rights, including their freedom to withdraw from the study without any negative consequences. Willing participants were then given a copy of the questionnaire to complete. Of the questionnaires collected, 382 usable responses were realised.

7. Results and Findings

A partial least squares (PLS) structural equation modelling technique using Smart PLS 3 software was the main data analysis tool used (Ringle, Wende & Becker, 2015). As recommended by Anderson and Gerbing (1988), the measurement model was assessed to determine the validity of the measurement instrument, and then the structural model was analysed to test the hypotheses.

7.1. Measurement model analysis

The validity of the measurement model was assessed to determine its convergent validity and discriminant validity. In assessing the former, the standardised factor loadings, composite reliability, and average variance extracted (AVE) were observed. According to Hair, Hult, Ringle, Sarstedt and Thiele (2017), to achieve convergent validity, the factor loadings should exceed 0.7, the composite reliability should be greater than 0.7, and the AVE should exceed 0.5.

The results of the convergent validity assessment of the scale are presented in Table 1 below. The standardised factor loadings ranged from a minimum of 0.854 to a maximum of 0.970. These values were greater than the 0.7 threshold (Hair *et al.*, 2017). Similarly, the minimum estimated value for the composite reliability was 0.928 – thus above the 0.7 cut-off point. Last, the AVEs ranged from a minimum of 0.764 to a maximum of 0.933, and so were above the recommended threshold of 0.5 (Bagozzi & Yi, 1988). The results thus confirmed the convergent validity of the measurement model.

Table 1: Results of the convergent validity of the measurement model

Constructs	Indicators	Loading	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Argument quality	AQ1	0.854	0.897	0.928	0.764
	AQ2	0.881			
	AQ3	0.900			
	AQ4	0.861			
Podcast adoption	Adoption1	0.905	0.899	0.937	0.832
	Adoption2	0.925			
	Adoption3	0.907			
Source credibility	SC1	0.883	0.913	0.938	0.792
	SC2	0.868			
	SC3	0.909			
	SC4	0.899			
Usefulness	PU1	0.964	0.976	0.982	0.933
	PU2	0.962			
	PU3	0.966			
	PU4	0.970			

Following the confirmation of the convergent validity of the measurement model, its discriminant validity was assessed using the heterotrait-monotrait (HTMT) technique. The HTMT criteria suggest that, to obtain discriminant validity, the HTMT ratio of correlations should be less than either the conservative estimate of 0.850 or 0.900 (Henseler, Ringle & Sarstedt, 2015). Based on the results

presented in Table 2, all of the HTMT ratios of correlations obtained for the current study were less than 0.900, thus providing further evidence to support the discriminant validity of the constructs that were used. The results of the discriminant validity analysis are presented in Table 2.

Table 2: Discriminant validity of the measurement model (HTMT technique)

		1	2	3	4
1	Argument quality				
2	Podcast marketing adoption	0.413			
3	Source credibility	0.453	0.394		
4	Usefulness	0.120	0.329	0.252	

Once the convergent and discriminant validity of the measurement model had been confirmed, the structural model was assessed to test the hypotheses.

7.2. Structural model analysis

The structural model was also analysed using Smart PLS 3. A bootstrapping technique using 5,000 resamples was used to determine the significance of the path estimate. The results of the structural model analysis are presented in Figures 2 and 3 and Tables 3 and 4. Prior to testing the structural model, the threat of collinearity between the independent constructs was assessed using the VIF values. The results showed that the VIF values ranged between 1.061 and 1.257. Given that these values were less than the critical threshold of 3, collinearity did not raise any critical issues for the constructs. Next, the R2 of the endogenous constructs and the path coefficients along the respective p-values and t-values for the path significance were assessed. The results of the hypotheses are presented in Table 3 and Figures 2 and 3. The results showed that the respective exogenous constructs explained 5.7% and 24.1% of the variance in usefulness and podcast marketing adoption respectively.

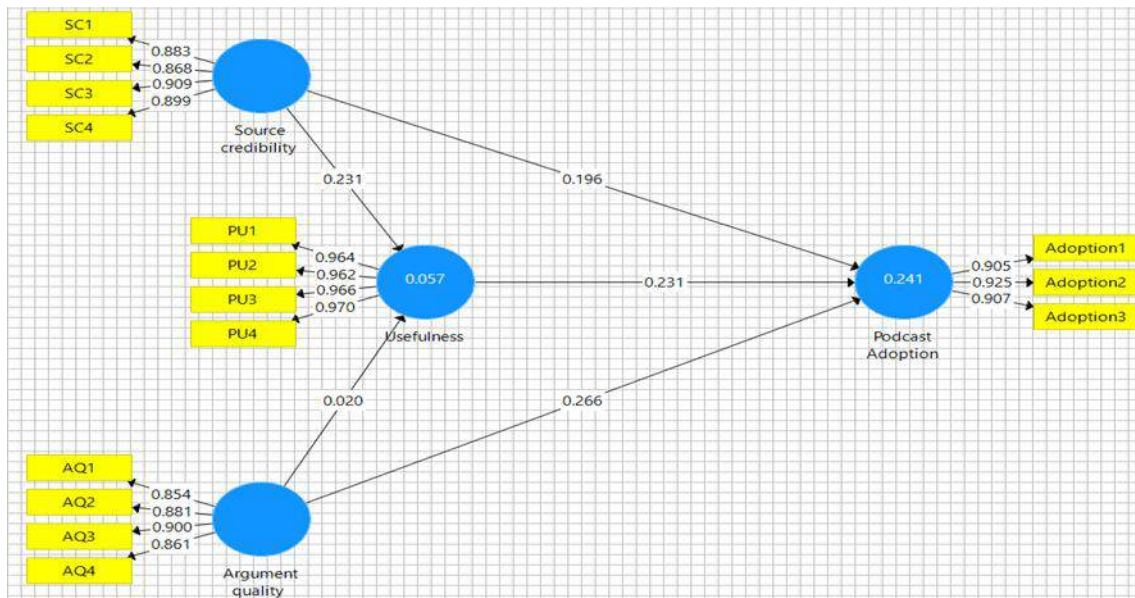


Figure 2: Factor loadings, path coefficients, and R2 values

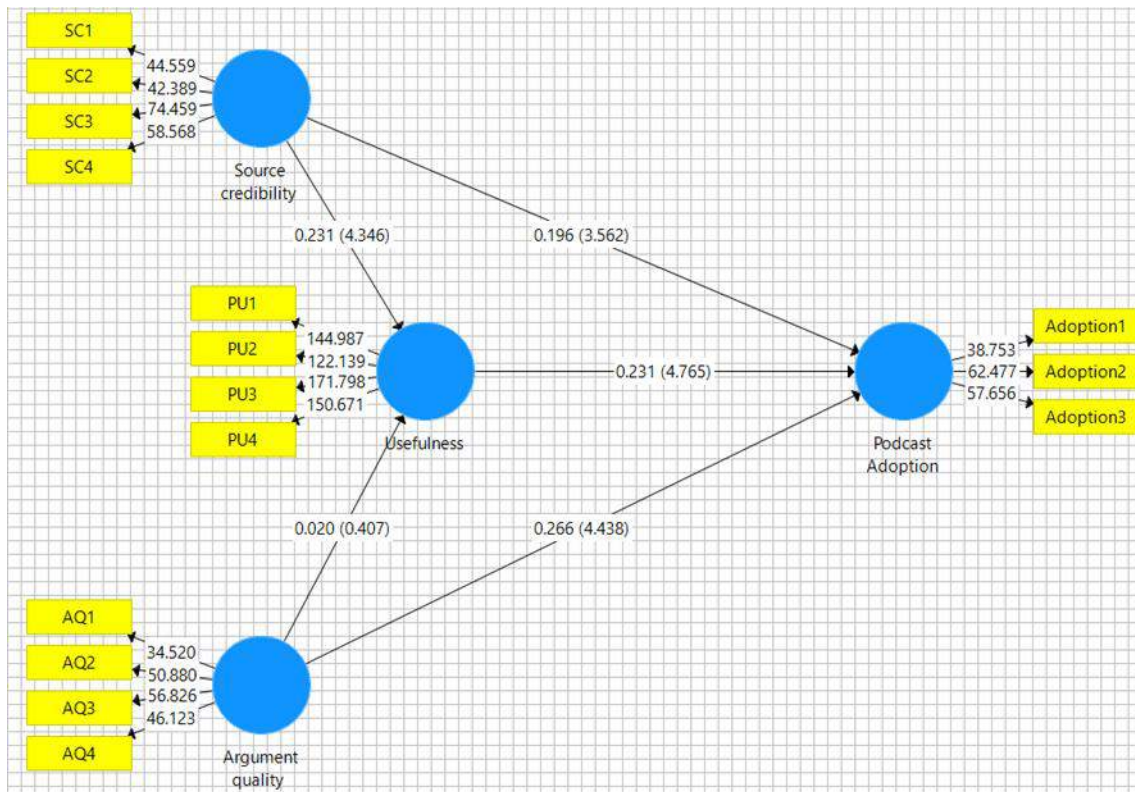


Figure 3: Results of PLS model estimation of bootstrapping for path significance

Table 3: Results of hypotheses testing

	Path coefficient	T-value	Bias corrected confidence 95%		f ²
Source credibility → Podcast marketing adoption	0.196***	3.562	[0.094; 0.310]	Supported	0.040
Source credibility → Usefulness	0.231***	4.346	[0.126; 0.329]	Supported	0.047
Usefulness → Podcast marketing adoption	0.231***	4.765	[0.135; 0.325]	Supported	0.066
Argument quality → Podcast marketing adoption	0.266***	4.438	[0.137; 0.369]	Supported	0.078
Argument quality → Usefulness	0.020 ^{ns}	0.407	[-0.070; 0.117]	Not supported	0.000

***p<0.001, **p<0.01, *p<0.05, ns=non-significant

In respect of the path coefficients, the results showed that source credibility had a significant and positive relationship with podcast marketing adoption ($\beta = 0.196$, $t=3.562$, $p < 0.001$); therefore, Hypothesis 1 was supported. Similarly, the results suggested that source credibility had a significant and positive relationship with usefulness ($\beta = 0.231$, $t=4.346$, $p < 0.001$); thus Hypothesis 2 was supported. With regard to Hypothesis 3, usefulness had a significant and positive relationship with podcast marketing adoption ($\beta = 0.231$, $t=4.765$, $p < 0.001$), therefore supporting Hypothesis 3. Furthermore, the results showed that argument quality had a significant and positive relationship with podcast marketing adoption ($\beta = 0.266$, $t=4.438$, $p < 0.001$); thus Hypothesis 4 was supported. Contrary to previous research, this study found that argument quality had no significant relationship with usefulness ($\beta = 0.020$, $t=0.407$, $p > 0.05$), and so Hypothesis 5 was not supported.

8. Managerial Implications

The aim of the study was to establish the factors that lead to users' adoption of podcast marketing. The findings established that the source credibility of information is positively associated with users' adoption of podcast marketing. This finding is consistent with prior research (O'Reilly *et al.*, 2016; Ismagilova *et al.*, 2020; Abu-Taieh *et al.*, 2022; Bezbaruah & Brahmabhatt, 2022), which found a significant and positive association between source credibility and the adoption of information. The results of this study have thus suggested that the source credibility of information is likely to influence the adoption of podcast marketing. Similarly, the findings have shown that the source credibility of information is positively associated with its usefulness. This finding corroborated those of earlier studies (Wu & Wang, 2011; Kang & Namkung, 2019; Jamil & Qayyum, 2021; Lee, 2021), which found a significant and positive relationship between source credibility and usefulness. This result has suggested, therefore, that podcast marketing that provides credible sources is most likely to be useful to its users.

The findings have also indicated that podcast marketing adoption is positively influenced by the usefulness of the information provided by podcast marketing. This finding has confirmed those of previous studies (Hussain *et al.*, 2017; Nayanajith *et al.*, 2021; Bansah & Agyei, 2022; Tavitiyaman *et al.*, 2022), which found a significant and positive association between usefulness and system adoption. This result of the present study has demonstrated, therefore, that users who find podcast marketing information useful are likely to adopt podcast marketing.

In the same breath, the findings have shown that argument quality positively links with podcast marketing adoption. This finding has validated those of earlier studies (Tseng & Wang, 2016; Kim & Kim, 2019; Zhang *et al.*, 2019; Shankar *et al.*, 2020;), which found a significant and positive relationship between argument quality and adoption. This result has suggested, therefore, that users who perceive the argument to be of high quality are likely to adopt podcast marketing.

Contrary to the proposed hypothesis (H5), the findings have shown that there is no significant positive relationship between argument quality and the usefulness of information. Aghakhani, Oh and Gregg (2017) suggested that argument quality leads to usefulness of information, and several scholars established a significant and positive relationship between argument quality and usefulness (Chang *et al.*, 2015; Li, 2015; Zhu *et al.*, 2016; Rofianto *et al.*, 2017). However, this study has found that argument quality has no significant relationship with usefulness. This means that, even if the quality of the argument is strong, there is no certainty that the users of podcast marketing will find it useful.

The findings of this study have implications for business organisations that are interested in increasing the adoption rate of their podcast marketing. The results of this study, which have demonstrated that usefulness can lead to adoption, emphasise that, even though usefulness is a mediator of adoption, both source credibility and argument quality have a direct, significant, and positive influence on podcast marketing adoption. Therefore, marketers should improve the quality of their arguments and/or information. This means that management should ensure that the information provided through podcast marketing is thoroughly researched. All arguments advanced should be backed by data and sources. Personal opinions should be clearly declared and labelled. In instances when the information or argument lacks sufficient data to back it up, disclaimers should be clearly stipulated. Furthermore, the sources of information should be credible. Marketers can increase source credibility by using vetted sources; they should prioritise sources who are experts in their respective subject matter. This could be achieved by ensuring that the host of the podcast topic is knowledgeable enough to command authority in that specific matter.

The findings of this study have made scholarly contributions in two domains: First, this is one of the first studies to shed light on the factors influencing consumers' adoption of podcast marketing in the context of a developing country, paying special attention to South Africa. Scholars so far have not given much attention to understanding consumers' adoption of podcast marketing in developing countries. Second, previous studies that have applied the IAM have mostly paid attention only to the construct of usefulness being a mediator between source credibility and podcast marketing adoption,

as well as, between argument quality and podcast marketing adoption. In effect, they have investigated podcast marketing adoption as influenced by usefulness. This study has investigated source credibility directly influencing podcast marketing adoption, as well as argument quality directly influencing podcast marketing adoption.

9. Conclusion

This study examined several factors that influence consumers' adoption of podcast marketing. The factors that were analysed were source credibility, argument quality, and usefulness of information. The study was theoretically grounded in the information adoption model (IAM). The findings suggested that usefulness has a positive influence on podcast marketing adoption, and that source credibility has a positive influence on podcast marketing adoption. Last, the study found that argument quality is significantly related to podcast marketing adoption.

The findings of this study contribute to the literature by addressing the deficiency of research on podcast marketing, particularly in emerging markets. The study further provides empirical validation of the IAM in the digital media innovation domain from the perspective of a developing country. Considering that the original IAM was developed and tested on a sample of professionals of a multinational public accounting firm in their North American operations, this validation in a digital media innovation domain in the context of an emerging African country is significant in validating this model beyond its original context.

The study has some limitations that open up opportunities for future research. First, businesses use other digital marketing communication tools such as blogs, wikis, and video chats, while the current study only focused on podcasts. Future research could extend this scope by analysing other digital marketing communication tools. Second, the current study focused only on consumer markets (B2C). Given that there is a significant difference between B2C and business-to-business (B2B) markets, future research could expand to podcast marketing adoption by B2B markets.

Acknowledgements

Special thanks go to Prof, DK Maduku of the University of Johannesburg for the support and encouragement to the author.

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Determinants of Consumers' Intention to Continue Using Mobile Food Ordering Apps

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Keywords

Perceived usefulness; reliability; attitude; perceived ease-of-use; mobile food ordering apps

Abstract

Although mobile food ordering apps are becoming common platforms that South African restaurants, like others elsewhere, are using to provide services to their customers, it is not clear whether customers intend to continue using the platforms. By integrating reliability – a dimension of service quality – into the technology acceptance model (TAM), the current study assesses the factors influencing customers' intention to continue using mobile food ordering apps. A survey strategy was used to obtain data from 385 customers who had previously used mobile food ordering platforms. The data was analysed using the partial least squares structural equation modelling technique. The study's findings showed that perceived usefulness and reliability influence the attitudes towards using mobile food ordering apps. Moreover, consumers' attitude towards using mobile food ordering apps have a significant impact on their intention to continue using the app. The findings further indicated that reliability significantly moderates the impact of usefulness on attitude. Such a greater perception of reliability strengthens the impact of perceived usefulness on attitude.

1. Introduction

Technological advances such as online food ordering services are rapidly transforming the traditional restaurant industry and people's dining cultures (Cho, Bonn & Li, 2019). The mobile food delivery app is one such technological innovation in the restaurant industry. The app is a platform for ordering food via smart mobile phones (Ray, Dhir, Bala & Kaur, 2019). This food delivery app innovation is fuelled by the increasing number of smartphones and greater internet connectivity, enabling users to access information efficiently and quickly without any limitations of time and space (Lee, Sung & Jeon, 2019; Roh & Park, 2019). In the restaurant industry, mobile food ordering apps are developed to give consumers remote access to multiple restaurants to order their favourite meals (Natarajan, Balasubramanian & Kasilingam, 2018; Ramesh, Prabhu, Sasikumar, Devi, Prasath & Kamala, 2021). Such apps offer online-to-offline mobile services that connect restaurants and customers effortlessly. In addition, customers can easily and conveniently use their smartphones to order food from their preferred restaurants to be delivered to their homes or offices with just a few simple clicks (Cho *et al.*, 2019; Zhao & Bacao, 2020).

It is important to note that mobile food delivery apps are categorised into two types: restaurant-owned apps and multiple-restaurant apps that deliver food from a range of restaurants (Riley, 2020; Yeo, Goh & Rezaei, 2017). In South Africa, well-known restaurants with their own mobile food ordering apps are KFC, Nandos, Debonairs Pizza, and Steers, whereas popular multiple-restaurant apps serve Mr D Food and Uber Eats (Riley, 2020). According to Pigatto, Machado, Dos Santos Negreti and Machado (2017), ordering food through apps provides consumers with several advantages, such as the ability to read reviews and ratings, view menus, choose between different payment options, see the estimated delivery time, and track the delivery in real time.

2. Problem Investigated

Previous studies have acknowledged that consumers have different preferences and tastes when it comes to using mobile food ordering apps (Kang & Namkung, 2019; Cho *et al.*, 2019). In addition, various factors can influence their perception of the service quality that is offered, which in turn could

affect their attitudes towards their intentions to use specific mobile food delivery apps. However, no relevant study has yet examined the determinants of consumers' intention to continue using mobile food ordering apps in the South African context. Nor, has any South African research to date analysed how perceived usefulness, perceived ease-of-use, and reliability affect the user's attitude towards mobile food delivery apps and how users' attitudes affect the intention to continue using mobile food delivery apps. Therefore, gaps remain in the literature on the impact of perceived usefulness, perceived ease-of-use, and reliability on the intention to continue using mobile food ordering apps and how reliability mediates the relationship between perceived usefulness and attitude.

3. Research Objectives

The aim of this study was to examine the determinants of consumers' intention to continue using mobile food ordering apps. In order to achieve that aim, the following objectives were defined:

- To examine the influence of perceived usefulness on attitude towards using food ordering apps
- To examine the influence of perceived ease-of-use on attitude towards using food ordering apps
- To examine the influence of reliability on attitude towards using food ordering apps
- To examine the influence of attitude on intention to continue using mobile food ordering apps
- To examine the moderating role of reliability on the relationship between perceived usefulness and attitude towards using food ordering apps

4. Hypotheses

The following hypotheses were formulated for the study:

H₁: *There is a significant and positive relationship between attitude and intention to continue using.*

H₂: *There is a significant and positive relationship between perceived ease-of-use and attitude.*

H₃: *There is a significant and positive relationship between reliability and perceived usefulness.*

H₄: *There is a significant and positive relationship between reliability and attitude.*

H₅: *There is a significant and positive relationship between perceived usefulness and attitude.*

H₆: *Reliability positively moderates the relationship between perceived usefulness and attitude.*

5. Literature Review

This section comprises the study's theoretical background and the proposed research model, including the relationship between the constructs.

5.1. Theoretical background

The present study was theoretically rooted in the technology acceptance model (TAM) (Davis, 1989), which was integrated with the reliability dimension of service quality. The TAM consists of two key constructs – perceived usefulness and perceived ease-of-use – that serve as predictors of an individual's attitude to adopting and using a technology. The TAM further asserts that a person's attitude towards the technology's use influence their intention, and that this intention results in use behaviour. The TAM has been widely applied in previous studies to predict consumer behaviour regarding the use of different technologies; and the findings of these studies across various contexts and domains have generally provided robust support for the TAM. A study by Koenait, Maziriri and Chuchu (2021) revealed that the perceived usefulness of a mobile banking application stimulated attitudes towards the use of mobile banking applications. However, in the context of online streaming, Camilleri and Falzon (2021) used the TAM in order to “[understand] motivations to use online streaming services”, and discovered that individuals' perceptions of usefulness and ease-of-use significantly influenced their intentions to use such technology. Similarly, Su, Nguyen, Nguyen, Luu and Nguyen-Phuoc (2022) adopted the TAM to examine the factors that affect consumers' loyalty to mobile food delivery apps, and discovered that perceived usefulness and perceived ease-of-use were among the factors that positively influenced customer loyalty towards mobile food delivery apps. These studies have provided validation for the TAM as a valid theoretical basis for the present study.

As indicated earlier, the service quality dimension of reliability was integrated into the TAM to assess the extent to which it enhanced the prediction of perceived usefulness. Reliability is acknowledged as one of key factors in service quality to be used to measure the adoption of new technology (Prasad & Aryasri, 2009; Wengrowicz, Dori & Dori, 2014; Verma, 2020).

5.2. Research Model And Relationship Between Constructs

The next section comprises a detailed discussion of the proposed research model and of the relationships between the constructs in the study.

5.2.1. Research model

Consistent with previous literature, the study proposed a model (Figure 1) that posits that perceived usefulness, reliability, and perceived ease-of-use have significant and positive effects on attitudes, which in turn has a positive effect on the intention to continue using mobile food ordering apps. Furthermore, it was proposed that reliability positively mediates the relationship between perceived ease-of-use and attitude.

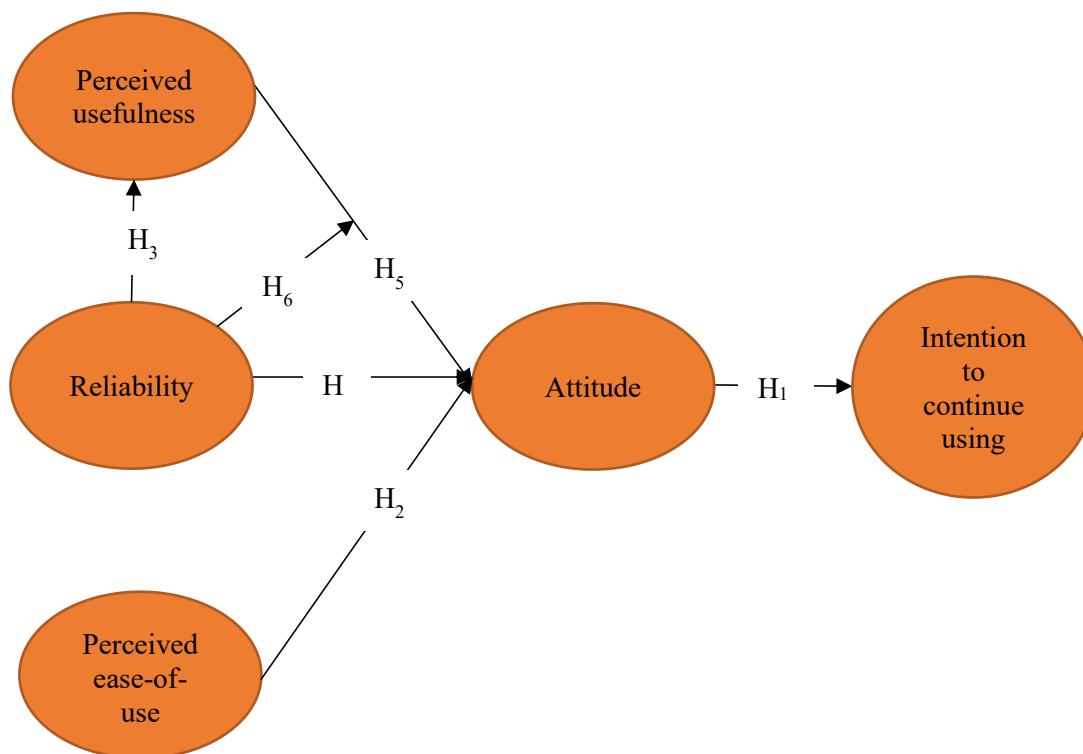


Figure 1: Proposed research model

The relationships between the constructs in the model are discussed in the paragraphs that follow.

5.2.2. Relationships between constructs

Perceived usefulness

Perceived usefulness (PU) is defined as “to the degree to which an individual believes that adopting the technology would improve his or her task performance” (Davis, 1989:320). Lee, Lee and Jeon (2017) explain that perceived usefulness is a factor that significantly affects the use of mobile food ordering apps. For instance, food delivery apps’ usefulness is expected to be convenient for users regardless of their location and the time that they order food (Lee & Jeon, 2016). Perceived usefulness is also found to have a positive relationship with customers’ attitudes when it comes to their intention to use food delivery app services (Yeo *et al.*, 2017). Okumus and Bilgihan (2014) found that perceived usefulness is among the factors that influence consumers’ attitude after examining smartphone users’ intention in ordering food through apps. Similarly, several studies found that perceived usefulness had a significant and positive relationship with attitude (Law, Kwok & Ng, 2016; Yeo, Tan, Teo & Tan, 2021).

Perceived ease-of-use

Davis (1989:320) defined perceived ease-of-use as “the degree to which a person believes that using a particular system would be free of effort”. Perceived ease-of-use was defined by Ozturk, Bilgihan, Nusair and Okumus (2016) as the provision of the appropriate information gathered from using technology such as mobile applications. In the context of the current study, perceived ease-of-use reflected how easy it is for consumers to use food orders apps. Previous studies conducted by Morosan (2011), Salehi-Esfahani and Kang (2019), and Zhang, Seo and Ahn (2019) found that perceived ease-of-use had a strong effect on consumers’ attitudes towards the adoption and use of technology in accessing hospitality and tourism services. Similarly, Ray *et al.* (2019) showed that perceived ease-of-use influenced customers’ intention to continue using food ordering app services.

Reliability

Parasuraman, Zeithaml and Berry (1994) defined reliability as the level of emotions linked with the consumer’s belief that the company would deliver as promised, and that the consumer could trust the company with which they traded. In the context of mobile food ordering apps, reliability depends on the service provider’s ability to deliver the right order at the right time and so satisfy the customer (Azizul, Albattat, Shahrman & Irfan, 2019). A study by Ilham (2018) revealed that consumers develop a positive attitude towards using mobile food ordering apps that consistently provide quality services. Providing accurate, detailed, and reliable information was found to have an impact on consumers’ attitudes towards the use of mobile apps to order food (Lee *et al.*, 2019). Reliability was found to be a significant factor in influencing individuals’ attitude to the adoption of food delivery services during the Covid-19 pandemic (Hong, Choi, Choi & Joung, 2021). Moon and Armstrong (2020) highlighted that customers who perceive technology such as mobile applications to be useful and reliable develop positive attitudes, likely leading to future usage.

Attitude

According to Fishbein and Ajzen (1975), attitude is defined as “an individual’s positive or negative feelings about performing the target behavior”. Attitude was described by Hwang, Lee and Kim (2019) as an important evaluative criterion that an individual develops when using mobile food ordering apps, and that can affect their intention to continue using it (Belanche, Flavián & Pérez-Rueda, 2020). Previous studies have found that customers who perceive mobile food ordering apps to be useful tend to develop more positive attitudes towards using such apps (Cho *et al.*, 2019; Gârdan, Epuran, Paştiiu, Gârdan, Jiroveanu, Tecău and Prihoancă, 2021; Song, Ruan & Jeon, 2021). The results of a study by Troise, O’Driscoll, Tani and Prisco (2021) revealed that consumers’ intention to continue using mobile food ordering services is influenced by their positive attitudes towards mobile apps that exceed their expectations. Similarly, a recent study by Al Amin, Arefin, Alam, Ahammad and Hoque (2021) showed that attitudes had a significant impact on the behavioural intention to continue using mobile food delivery apps during Covid-19. Kang and Namkung (2019) examined customers’ decision-making when purchasing food product through the use of technology, and found a positive relationship between attitude and the behavioural intention to use it.

6. Research Methodology

Measurement

The data was collected using a structured paper-based questionnaire. A multi-item scale, adapted from prior related literature and modified appropriately for this study, was used to measure the constructs. Perceived usefulness, which consisted of five items, and perceived ease-of-use, which consisted of three items, were adapted from Davis (1989). The intention to continue using, with four items, was adapted from Mouakket (2015). Reliability, with three items, was adapted from Stevens, Knutson and Patton (1995). Attitude had four items, and was adapted from Yeo *et al.* (2017). All of the items were measured as reflective items on their corresponding constructs with a five-point Likert scale ranging from 1 ‘strongly disagree’ to 5 ‘strongly agree’.

The measurement instrument (a questionnaire) was tested in a pilot study involving 60 respondents. An online self-administered questionnaire was used: a link created in Google Forum was shared via emails to potential respondents. The main purpose of the pilot study was to assess the appropriateness

of the questionnaire's contents, instructions, and structure. The responses received were positive; so only slight changes, such as correcting spelling errors and rephrasing some words, were made to improve the quality of the final questionnaire to be used to collect data.

Sampling and data collection

In this study, the target population were consumers over the age of 18 years who resided in Gauteng Province, South Africa and who had used mobile food delivery apps in the month prior to the survey. When collecting the data, non-probability convenience and judgmental techniques were used owing to the unavailability of a sampling frame. Participation in the survey was completely voluntary, and participants were informed that they could withdraw from the study at any point without detrimental consequences.

The questionnaire used for the data collection was created using Google Docs. Thereafter, a link to the online questionnaire was generated and embedded in an email inviting the respondents to participate in the study. The first page of the questionnaire had a consent form that stated the conditions of participation, which had to be read by participants before they could take part in the study. Those who completed the online questionnaire were encouraged to share the link with anyone in their network who met the participation criteria. The data was collected over a period of three months (May to July) in 2020. A total of 385 usable responses were obtained.

7. Data Analysis And Results

The data was analysed using the partial least squares structural equation modelling (SEM) technique, employing SmartPLS 3 software. This technique was considered appropriate because the goal of the research was to predict the determinants of consumers' intention to continue using mobile food ordering apps. This was in line with the predictive orientation of PLS-SEM (Hair, Hult, Ringle & Sarstedt, 2017). The measurement model was examined to check its validity, and the structural model was evaluated to validate the significance of the proposed hypotheses.

Measurement model analysis

To examine the validity of the measurement model, its convergent and discriminant validity were established. To examine convergent validity, standardised factor loading, composite reliability, and average variance extracted (AVE) were used. For a measurement model to possess convergent validity, the standardised factors loading should exceed 0.708, the composite reliability estimates should be greater than 0.7, and the AVEs for the constructs should exceed 0.5. The results of the convergent validity test presented in Table 1 show that all of the standardised factor loadings exceeded the 0.708 threshold, with 0.739 (ATT2) being the lowest. Moreover, the composite reliability estimates obtained for the study's constructs far exceeded the 0.7 threshold, with 0.861 – for the construct 'confirmation' – being the lowest. Finally, the AVEs for the constructs also exceeded the 0.5 cut-off point. These results supported the convergent validity of the measurement model.

Table 1: Convergent Validity Of The Measurement Model

		Loading
Attitude: α =0.807; CR= 0.898; AVE= 0.634		
ATT1	I like the idea of using mobile food ordering/delivery apps.	0.809
ATT2	I think that using mobile food ordering/delivery app is a good idea.	0.816
ATT3	I think that using mobile food ordering/delivery apps is pleasant.	0.739
ATT4	I think that using food ordering/delivery apps would be a wise idea	0.818
Perceived ease-of-use: α =0.774; CR= 0.898; AVE= 0.815		
PEU1	Learning how to use the mobile food ordering/delivery service app is easy for me.	0.894
PEU4	Overall, I find it easy to use the mobile food ordering/delivery apps.	0.912
Intention to continue using: α =0.845; CR= 0.907; AVE= 0.764		
INT1	I intend to continue using the mobile food ordering/delivery app in the future.	0.885
INT2	I am willing to continue using the mobile food ordering/delivery apps in the near future.	0.873
INT3	I am likely to continue using mobile food ordering/delivery apps in the near future.	0.864
Reliability: α =0.757; CR= 0.861; AVE= 0.673		
REL1	The features provided by the mobile food ordering/delivery app are dependable.	0.799
REL2	The capabilities provided by the mobile food ordering/delivery app are reliable.	0.800
REL3	The food ordering/delivery app behaves in a highly consistent way.	0.861
Perceived usefulness: α =0.828; CR= 0.886; AVE=0.66		
PU1	Using food ordering/delivery apps enables me to accomplish the task of buying food more quickly.	0.827
PU3	Using food ordering/delivery apps is a more effective way of buying food.	0.792
PU4	I find the food delivery service mobile app to be useful.	0.811
PU5	Overall, I would find using a mobile food ordering/delivery app to be advantageous	0.821

The next step in the analysis of the measurement model was to assess its discriminant validity. The Heterotrait-monotrait (HMTMT) technique (Henseler, Ringle & Sarstedt, 2015) was applied. The HTMT criteria for confirming discriminant validity suggest that, to obtain discriminant validity, the HTMT ratio of correlations should be less than a conservative estimate of either 0.85 or 0.90 (Henseler *et al.*, 2015). According to the results presented in Table 2, all of the HTMT ratios of correlations obtained for this study were less than 0.900, thus providing evidence to support the discriminant validity of the constructs that were used.

Table 2: HTMT ratio of correlations

		1	2	3	4	5
1	Attitude					
2	Ease-of-use	0.660				
3	Intention to continue using	0.858	0.561			
4	Reliability	0.819	0.637	0.659		
5	Usefulness	0.877	0.784	0.661	0.793	

After confirming the convergent and discriminant validity of the measurement model, the relationships between the constructs in the structural model analysis were examined.

Structural model analysis

After confirming the validity of the measurement, the structural model was examined to determine the significance of the proposed hypotheses and to explain the variance in the dependent variable (intention to continue using) using the significant independent variables. As a first step in assessing the structural model, collinearity among the independent constructs in the model was examined using VIF. Hair *et al.* (2017) suggested that collinearity is not a critical issue if the VIF estimates are below

3. The results obtained for the present study showed that the VIF estimates ranged from 1.00 to 2.475. Given that these were below the threshold of 3, it was concluded that collinearity was not a critical threat to the study. Having ruled out the threat of collinearity, the size and significance of the path coefficients and the R2 of the predicted constructs, as well as the effect size (f^2) of the paths, were examined. These results are presented in Figures 2 and 3.

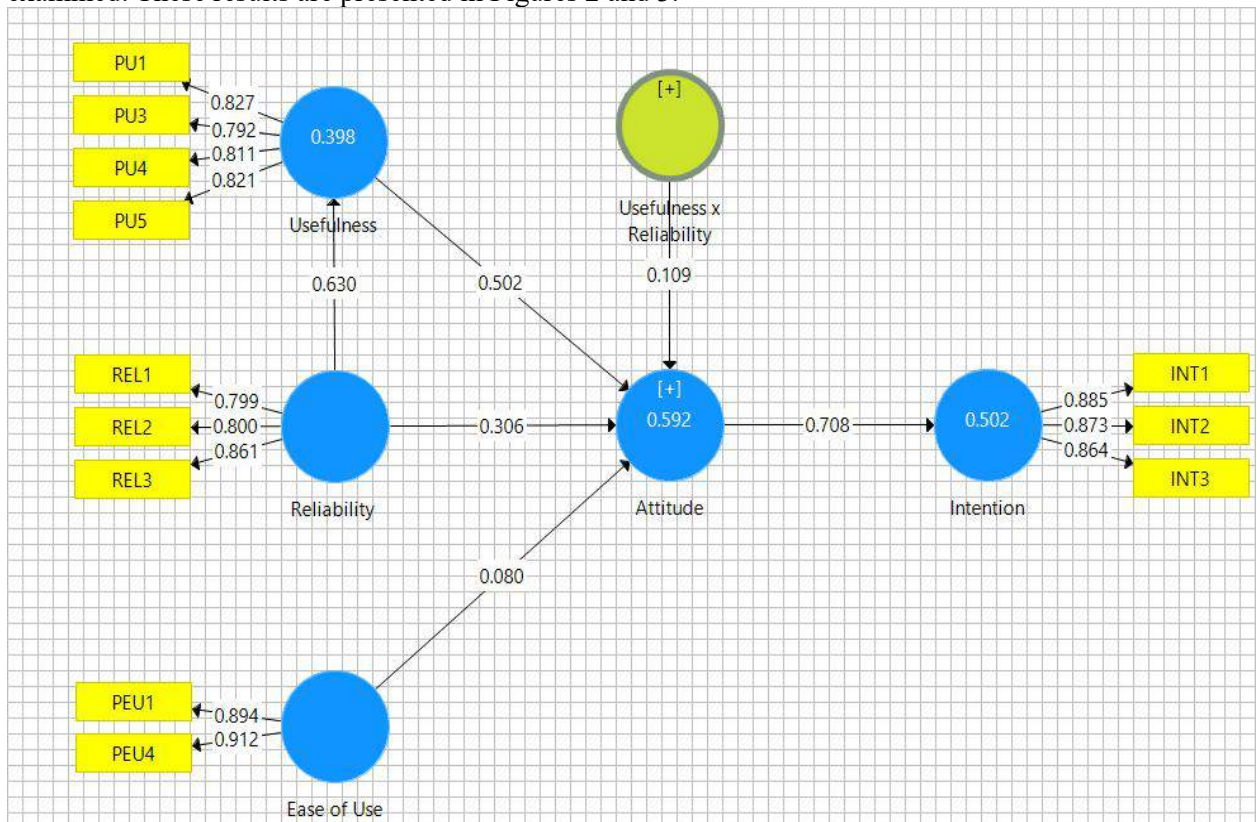


Figure 2: Path estimates with R2 values

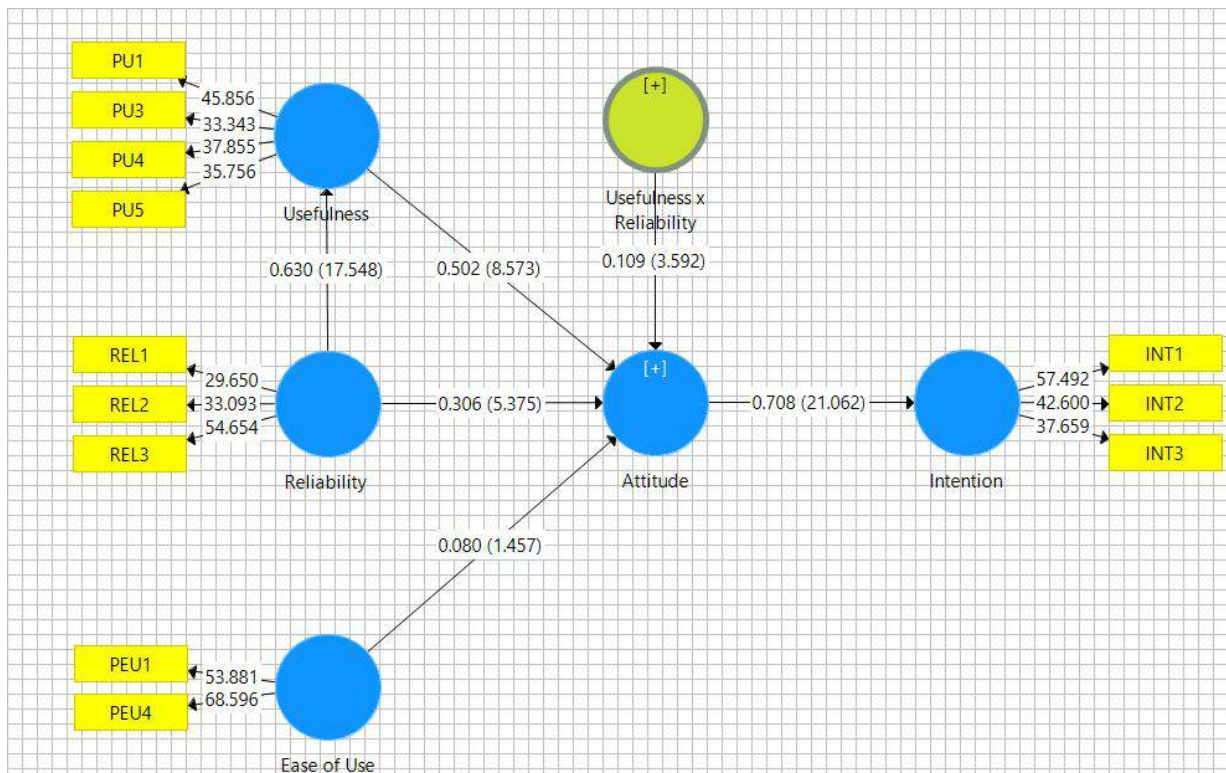


Figure 3: SmartPLS results of path estimates with t-values

Table 3: Path estimates

		Path coeff.	T Statistics	P Values	Result	f2
H1	Attitude -> Intention	0.708	21.062	0.000	Supported	1.008
H2	Ease-of-use -> Attitude	0.080	1.457	0.146	Not supported	0.009
H3	Reliability -> Usefulness	0.630	17.548	0.000	Supported	0.66
H4	Usefulness -> Attitude	0.502	8.573	0.000	Supported	0.285
H5	Reliability -> Attitude	0.306	5.375	0.000	Supported	0.135
H6	Usefulness x Reliability -> Attitude	0.109	3.592	0.000	Supported	0.032

According to the results of the hypothesis testing, attitude had a significant and positive impact on consumers' intention to continue using mobile food ordering apps ($\beta=0.708$; $t=21.062$; $p<0.001$), providing support for H1. The effect size for this relationship was large. The results showed further that consumers' perception of the ease of using food delivery apps was not significantly related to their attitude ($\beta=0.080$, $t=1.457$; $p<0.001$). Therefore, H2 was not supported. However, the results showed that reliability had a significant and positive impact on consumers' perception of the usefulness of food delivery apps ($\beta=0.630$; $t=17.548$; $p<0.001$), thus providing statistical support for H3. The effect size for this significant relationship was large. Similarly, the results showed that perceived usefulness was strongly associated with customers' attitude to using food delivery apps ($\beta=0.522$; $t=8.573$; $p<0.001$); thus H4 was statistically supported. The effective size for the impact of perceived usefulness on attitude was also large. Conversely, the findings showed that consumers' perception of the reliability of food delivery apps was significantly related to their attitude ($\beta=0.306$; $t=5.375$; $p<0.001$), thus providing statistical support for H5. The effective size of the reliability → attitude link, however, was negligible, while consumers' perception of how reliable the food delivery apps are partially mediated ($\beta=0.109$; $t=3.592$; $p<0.001$) the relationship between perceived usefulness and attitude.

In respect of the R2, reliability explained 39.8% of the variance in perceived usefulness and 59.2% of the variance in attitude. Perceived usefulness and confirmation – which are significant predictors of satisfaction – explained 58.8% of the variance in the construct. Last, attitude explained 50.2% of the variance in the intention to continue using the apps. The relatively high R2 values provided validation for the antecedents in predicting their respective outcome variables. To explain further the significant moderating impact of reliability on the relationship between perceived usefulness and attitude, a simple slop analysis (Figure 4) was performed. The results showed that higher reliability reinforced the impact of perceived usefulness on attitude.

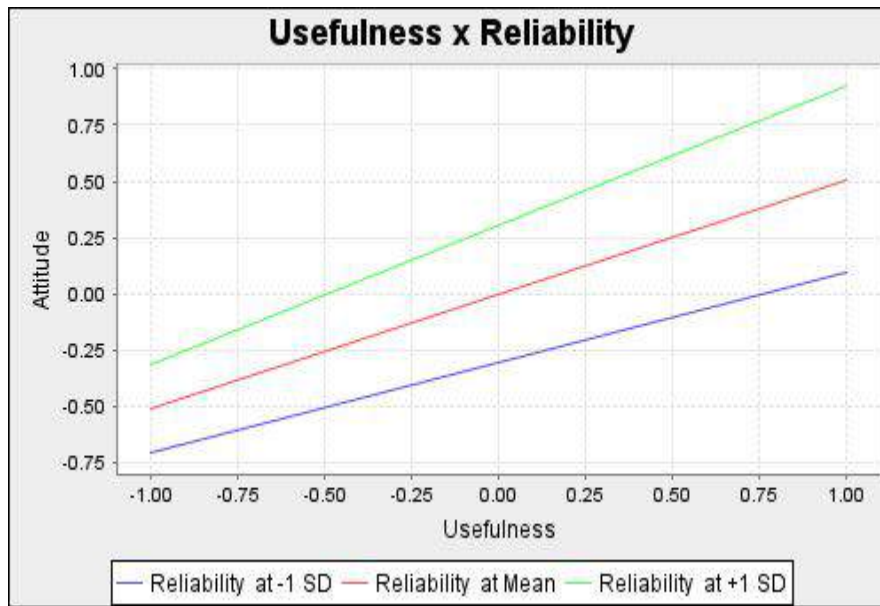


Figure 4: Moderating effects of reliability on the relationship between perceived usefulness and attitude

8. Discussions and Managerial Implications

The purpose of this study was to examine the determinants of consumers' intention to continue using mobile food ordering apps. Its findings showed that attitude had a strong impact on consumers' intention to continue using mobile food ordering app services. This finding supported prior results (Kang & Namkung, 2019; Al Amin *et al.*, 2021; Gárdan *et al.*, 2021), which revealed that the user of mobile food ordering apps who had a positive attitude intended to continue using those apps, provided that items were occasionally updated. This implied that the attitude of mobile food app users must be monitored, since it influences their intention to continue using the apps. Therefore, restaurants and developers of food delivery apps should provide occasional promotional strategies, such as festive season or Easter savings or coupons, to frequent users of food delivery apps in order to reinforce their existing positive attitudes towards their intention to continue using the apps. At the same time, similar offers could be made to new and potential users to encourage them to start using those apps.

The findings further revealed that consumers' perception of the ease of using food delivery apps had no positive impact on attitude, contradicting the results of previous studies by Ray *et al.* (2019) and Zhang *et al.* (2019), which found that perceived ease-of-use had a significant impact on consumers' attitudes towards the adoption and use of apps such as those for mobile food ordering. This implies that the users of mobile food ordering apps are now familiar with how they operate, and that there is nothing exciting, new, or complicated to learn about the apps they use. This might be an opportunity for restaurants and app developers to add exciting functions that would make the apps easy to use and to expand the services into new markets, such as rural areas, where the use of mobile food delivery apps is not popular.

The findings indicated that reliability had a statistically substantial and positive impact on both attitude and users' perception of how useful food delivery apps are. This result confirmed the findings of previous studies (Moon & Armstrong, 2020; Hong *et al.*, 2021) that mobile food ordering app service providers who delivered on their promises were perceived to be useful. According to the results, such perceptions positively influence the attitudes of mobile app users who are able to fulfil their need for food. This finding suggested that users of mobile food ordering apps perceived those services to be dependable and hassle-free and as very smart, effortless, and efficient. In addition, Shokouhyar, Shokoohyar and Safari (2020) emphasised that delivering what is ordered the first time gives customers the assurance that they can rely on the service provider, which also positively influences their attitude. It is recommended, therefore, that mobile food delivery apps be regularly maintained to ensure that consistent information is exchanged with their users, who depend on such

apps to order food. Such an approach would have a positive influence on users' attitudes and perception of usefulness.

The findings suggested that perceived usefulness was positively related to attitude, which is in line with the results of other studies (Lee *et al.*, 2017; Yeo *et al.*, 2017). This implies that users of food delivery apps who can easily find various food items from different restaurants perceive such apps to be helpful. It is recommended, therefore, that such apps be designed in such a way that ordering food is informative and helpful, practical, and convenient for users who have little time to cook their own meals (Zanetta, Hakim, Gastaldi, Seabra, Rolim, Nascimento, Medeiros & Da Cunha, 2021). That kind of design would be likely to have a positive impact on the attitudes of mobile food ordering app users. It is also recommended that the functions of mobile food delivery apps be able to recommend items such as combos which take less time to be prepared and delivered quickly to consumers. In a similar study, Wen, Pookulangara and Josiam (2021) suggested that mobile food delivery apps offer the innovative strategy of bundling orders from different restaurants that are reasonably close to one another without any extra cost to users.

The findings also showed that reliability positively moderated the relationship between perceived usefulness and attitude. This result emphasised the importance of reliability in improving the impact of usefulness on attitude. In practical terms, the findings of this study might be valuable to marketers of both restaurants and food delivery apps as they formulate relevant strategies, since factors such as perceived usefulness and reliability influence consumers' attitudes towards using such apps.

9. Conclusion

By integrating reliability into the TAM, the current study examined the factors that influence South African consumers' use of mobile food ordering apps. Data was obtained from 385 users of food delivery apps. The study found that both perceived usefulness and reliability had a positive relationship with attitude. However, perceived ease-of-use was statistically proven not to have any impact on attitude, whereas attitude was found to have a significant impact on the intention to continue using such apps. The study's findings also highlighted the significant moderating impact of reliability on the relationship between perceived usefulness and attitude, such that reliability reinforces the impact of usefulness on attitude. Future research could expand the scope of this study to include other provinces in South Africa, using probability sampling, different data collection methods, and longitudinal designs to obtain the in-depth views of a wider population.

Acknowledgements

The author acknowledges the level of support and guidance of Professor Daniel Kofi Maduku at the University of Johannesburg.

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Drivers of Grocery Retail Customers' Engagement With a Loyalty Program and the Grocery Retailer Brand

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Keywords

Loyalty program engagement; brand engagement; behavioural drivers; grocery retailer

Abstract

Advances in technology and more robust competition have necessitated grocery retailers to adopt various strategies to increase customer engagement and connections. Many grocery retailers try improving customer brand engagement and relationships through loyalty programs. Although grocery retailers in South Africa have done well in attracting new loyalty program members, the challenge is to engage them long-term. This paper uses a quantitative, descriptive design to investigate the drivers of grocery retail customers' engagement with a loyalty program and the grocery retailer brand. Self-administered questionnaires were distributed through social media platforms to respondents who used at least one grocery retailer's loyalty program three months before data collection. IBM SPSS and AMOS were used to analyse data from 299 suitable questionnaires. The findings from the multiple regression analysis showed that six customer behavioural drivers of loyalty programs in a specific hierarchical order all impact loyalty program engagement positively, which in turn enhances grocery customers' engagement with the grocery retailer brand.

1. Introduction

The grocery retail sector has changed significantly due to customer behavioural changes and heightened competition in economically challenging times. Resultantly, many South African grocery retailers have started to rely on loyalty programs to engage customers in long-term relationships. Brink, Heyns, and Kilbourn (2019) support this notion by stating that grocery retailers find it challenging to build and maintain loyalty in the quest for strengthened customer engagement and relationships with increasingly demanding customers. Customer engagement is central to strengthening long-term customer relationships, as put forward by Brodie, Hollebeek, Jurić, and Ilić (2011). Accordingly, based on Vivek, Beatty, and Morgan (2012), this study defines customer engagement as the extent of a customer's connection with and participation in a firm's activities and offerings from both the firm and the customer. Septianto, An, Chiew, Paramita, and Tanudharma (2019) confirm that a way to encourage customer engagement with brands is for firms to invest in loyalty programs. Not only to drive repeat purchases but to induce perceived value and reinforce relationships with the firms (Chaudhuri, Voorhees & Beck, 2019).

Furthermore, loyalty programs offer customers social benefits and financial incentives through their relationship with the company (Bruneau, Swaen, & Zidda, 2018). According to Xie and Chen (2013), the strengths and achievability of loyalty programs have been covered widely in academic literature. In addition, according to Chen, Mandler, and Meyer-Waarden (2021), customer loyalty programs are considered an obvious marketing solution to enhance long-term customer relationships in customer loyalty literature, specifically in the retail sector. However, there appears to be an inadequate understanding of customer engagement with loyalty programs. Bruneau et al. (2018) echo Henderson, Beck, and Palmatier's (2011) findings and confirm that using loyalty cards or redeeming points insufficiently explains loyalty program engagement. Consequently, a clear need arises to explore the

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behavioural dimensions that impact grocery retailer customers' loyalty program engagement and, hence, their customer brand engagement.

1.1. Problem Statement

Against this background, four problems appear to ground the paper. First, the average South African belongs to almost nine loyalty programs - including the Smart Shopper card of the grocery retailer, Pick n Pay's as one of the most used (Thukwana, 2021). With customers being part of so many loyalty programs, the question arises of the genuine engagement of grocery store customers with their loyalty programs and their engagement with the grocery stores' brands. Bruneau et al. (2018) note the seeming lack of customers' loyalty program engagement. They call on retailers to use interactive technologies to better engage with loyalty program members and map their customer journeys to optimise customer brand engagement with the grocery retailer.

Secondly, Haramse (2019) argues that even though customers belong to many loyalty programs, they have become more selective about the specific loyalty programs they engage with. An opportunity, therefore, arises to study the behavioural dimensions that drive grocery store customers' loyalty program engagement. Thirdly, despite evidence that loyalty programs are ideal for relationship marketing, Kim, Steinhoff, and Palmatier (2021) call for less fragmented and more comprehensive perspectives of studying loyalty programs. Fourthly, by determining loyalty program engagement and customer brand relationships with grocery stores it could add to Lo, Im, Chen, and Qu's (2017) findings: that through customer brand relationships, loyalty programs can strengthen customer advocacy, increase the share of wallet and purchase frequency, lower expenses to acquire new customers, and lower switching.

1.2. Research aim and objectives

1.2.1. Research aim

To investigate the drivers of grocery retail customers' engagement with a loyalty program and the grocery retailer brand.

1.2.2. Research objectives

- To investigate the demographic profile of respondents participating in the study. This objective is to provide background information relating to the purpose of the study.
- To determine whether a significant and positive relationship exists between the drivers of grocery retail customers' (proactively using a loyalty card, point redemption, altered customer buying behaviour, information sharing, openness to information and active search for information) and loyalty program engagement.
- To determine the hierarchical order of the drivers of grocery retail customers on grocery stores' loyalty program engagement.
- To establish whether a significant and positive relationship exists between grocery retail customers' engagement with a loyalty program and the grocery retailer brand.

2. Literature Review

First, the literature review provides a summary of customer engagement theory and expectancy-value theory as the grounding theories concerning the aim of the study. Second, the focus shifts to describing the key constructs and their relation to customer engagement. This leads to an explanation of the interrelationship between these constructs. Then, the corresponding hypotheses illustrate the proposed linkage between the constructs in this study. This section concludes with the proposed conceptual framework.

2.1 The theoretical underpinning of expectancy-value theory

Being part of a loyalty program provides customers benefits such as cash back, discounts, upgrades to certain products or services or other promotional options. The expectancy-value theory of Fishbein and Ajzen (1975) offers a theoretical basis for understanding the behavioural drivers of loyalty

program grocery retail customers' loyalty program engagement in this study. According to Mai and Liao (2021), expectancy-value theory suggests that motivation is a result, among others, of expectations or beliefs and values which are linked to the relative, subjective appeal of an outcome. More specifically, Gvili and Levy (2018) argue that the expectancy-value theory proposes that individual customers' expected benefit from an action affects their behaviour. The expected use, or what Fishbein and Ajzen (1975) refer to as "the utility", is a result of two aspects, namely the belief that an object (behaviour) has a particular attribute and the consideration of this attribute (Gvili & Levy, 2018). In the expectancy-value theory, the objects' attributes establish the attitude toward the object and consecutively confirm individual customers' intention to act in a specific way, which results in the consequent behaviour (Henning, Hennig-Thurau & Feiereisen, 2012).

Furthermore, Inzlicht, Shenhav, and Olivola (2018) argue that effort is usually expected in customer engagement in attaining some goal. The attractiveness (linked to value) and achievability (linked to expectancy) parts of goals are central to primary theoretical analyses of motivation (Kruglanski, Jasko, Chernikova, Milyavski, Babush, Baldner & Pierro, 2018). Furthermore, Eccles and Wigfield (2002) added to the expectancy-value theory to include the importance of mental processes. They distinguished the two essential parts (attractiveness and achievability) as determining factors of the intensity of the customer's motivation. Therefore, Kruglanski et al. (2018) argue that attractiveness or achievability determines the probability of completing the engagement, specifically regarding engagement tasks.

Therefore, based on the expectancy-value theory, this study proposes that the behavioural drivers of loyalty program customers are antecedents of loyalty program engagement which shape customer brand engagement.

2.2 The theoretical underpinning of customer engagement theory

Earlier research indicates that loyalty programs are fruitful platforms for fostering customer brand engagement (Itani, Kassar & Loureiro, 2019). Similarly, Bijmolt, Krafft, Sese and Viswanathan (2018) illustrate how loyalty programs can encourage customer engagement. Therefore, to examine customer brand engagement by grocery store customers in this study, this study firstly draws on customer engagement theory.

To contextualise customer engagement theory, it is valuable to focus on its development briefly. This theory originates in Morgan and Hunt's (1994) commitment trust theory, which paved the way for relationship marketing theory (Bhattacharjee, Pradhan, & Swani, 2022). The critical premise of relationship marketing theory, according to Grönroos (2019), is the central purpose of firms to establish positive customer relationships to influence customers' preferences and persuade them to buy on a long-term basis promoting productivity, effectiveness, efficiency, and cooperation. Bhattacharjee et al. (2022) claim that firms' objectives advanced from relationship marketing to customer engagement over time. Pradhan, Malhotra and Moharana (2020) argue that "engagement" has gained prominence in the marketing field. Pansari and Kumar (2017) affirm that customer engagement is undoubtedly central to contemporary marketing, having developed from relationship marketing. These scholars proposed customer engagement theory, "the process of engaging a customer follows relationship formation and that the tenets of relationship marketing are subsumed in engagement theory" (Pansari & Kumar, 2017, 300). So, Kim and King (2021) argue that the significance of customer engagement exists in insight into dynamic, interactive customer-brand interactions, such as how customers engage in loyalty programs. The discussion now shifts to the key constructs in this study: loyalty program engagement, behavioural dimensions of loyalty program engagement and customer brand engagement.

2.3 Customer brand engagement

France, Merrilees and Miller (2016) maintain that customer brand engagement literature indicates growth in engagement knowledge between the customer and the brand. One of the typical features of a loyalty program is that it enables data collection about the loyalty program customers (Belli, O'Rourke, Carrillat, Pupovac, Melnyk, & Napolova, 2022), therefore providing an opportunity to gain

knowledge of the link between the loyalty program customer and the retail brand. Customer brand engagement, an adaptation of the customer engagement concept (Hollebeek, 2011), is explained by Dessart, Aldás-Manzano, and Veloutsou (2019) as the level of a customer's behavioural, cognitive, and emotional contributions, in particular, interactions with a brand. Hollebeek, Glyn and Brodie (2014) define customer brand engagement as "a customer's positively valence brand-related cognitive, emotional and behavioural activity during or related to focal consumer or brand interactions". Similarly, according to the seminal work of Brodie et al. (2011), customer brand engagement is a "psychological state" comprising "proactive, interactive customer relationships". Research in customer brand engagement conceptualisations also focuses on engagement as customer behaviour (Van Doorn, Lemon, Mittal, Nass, Pick, Pirner and Verhoef, 2010), whereas Boden (2019) views it as a loyalty-building process.

Both the brand and the customer play an essential part in creating and sustaining customer brand engagement, but this strongly depends on an actionable firm-led platform (France, et al., 2016), such as a loyalty program. Pratomo and Magetsari (2018) proved that a customer's engagement with a brand is not only an interaction process between the customer and a brand but a fundamental enabler to developing customer brand relationships. Before discussing loyalty program engagement as an enabler of customer brand relationships, it is necessary to recognise the concept of loyalty programs.

2.4 Loyalty programs

According to Chen, Mandler and Meyer-Waarden (2021), loyalty programs were introduced in the airline and retail industries in the 20th century. Based on the work of Bombaij and Dekimpe (2020) and Steinhoff and Palmetier (2016), a loyalty program encompasses an integrated approach to personalised marketing activities with marketing communications that offer both tangible and intangible rewards. Loyalty programs help retailers to induce customers' perceived value, encouraging customers to enrol and stay with the loyalty program and enhancing their buying behaviours and relationship with the retailer (Chen, et al., 2021). Loyalty programs are predominantly used in industries that monitor customer behaviour to improve promotions and where loyalty stakes are high (Wu, Sun & Yada, 2020), such as petrol stations, airlines, and supermarkets.

Furthermore, He, Tian and Wang (2019) argue that loyalty programs are also used to support firms in overcoming challenges such as engaging and retaining existing customers. Therefore, Mafa (2019) argues that a firm's communication of its value offering to customers significantly influences customer engagement. Thus, how a firm communicates its value offerings to customers will affect customers' engagement with the firm (Mafa, 2019:23). The effective use of loyalty programs can, according to Corbishley (2017), result in the saving of costs because of higher customer retention. Furthermore, according to Thaver (2019), customers joining loyalty programs are more likely to become brand loyal to the firm. Corbishley (2017) further argue that loyalty programs have developed a platform for retailers to advance customer brand engagement. Similarly, Filipe, Marques, and Salguero (2017) found that customer engagement in loyalty programs enhances long-term customer brand relationships.

However, to assess the effectiveness of loyalty programs, Meyer-Waarden and Benavent (2009) propose that the two-way relationship of the loyalty program should be considered to move beyond the exclusive firm-focused perspective. Therefore, Bruneau et al. (2018) identify the necessity to use loyalty program engagement to address customers' relational responses to determine their active contribution to and presence in this relationship – a gap that this study aims to address.

2.5 Loyalty program engagement

To create a contextualised understanding of loyalty program engagement, it is essential to understand a few perspectives that ground the meaning of engagement for this study. First, engagement, for this study, entails active participation (Vivek, Beatty, & Morgan, 2012) and active interactions (Kumar, Aksoy, Donkers, Wiesel, & Tillmanns, 2010), as well as behavioural manifestations (Bijmolt, et al., 2010). Secondly, the engagement process is a sequence of combined states of engagement, which is a) context-dependent, b) individual, c) can be studied at unique complexities or intensities, and d) at

different points in time (Brodie, et al., 2011). Thirdly, engagement is considered in this study to involve not merely motivation but is rather typified by customers' behaviour, differentiating engagement, involvement, and commitment (Bruneau, et al., 2018). Therefore, as de Villiers (2015) argue, commitment refers to a conscious decision to *be* in a specific relationship, while engagement implies *behaviour to remain* in the relationship. Lastly, customer engagement for this study follows Mollen and Wilson's (2010) argument that customer engagement exceeds involvement but instead entails a dynamic brand relationship.

Research on loyalty program engagement focuses predominantly on a comparison between loyalty program members and non-members to evaluate the effectiveness of the loyalty program, which, according to Bruneau et al. (2018), a) fails to differentiate between engaged and unengaged loyalty program members and b) fails to determine loyalty program members who never engage in the loyalty program. There are, however, some scholars who refer more specifically to loyalty program behaviours. One study focuses on loyalty program members' reward redemption behaviour (Dorotic, Biumolt, & Verhoef 2012). Evanschitzky (2012) explored loyalty program members' card usage as an indicator of loyalty toward the program. Steinhoff and Palamatier's (2016) study focuses on participation in the loyalty program, and the resultant rewards received. Therefore, this study can contribute to loyalty program engagement literature in determining the relationship between several loyalty program behavioural drivers (proactively using a loyalty card, point redemption, altered customer buying behaviour, information sharing, openness to information and active search for information).

Next follows the definitions of the selected loyalty program behavioural drivers for this study:

- *Proactively using a loyalty card*: This refers to proactively using the loyalty program card when a customer makes a purchase (Bruneau, et al., 2018).
- *Point redemption*: This is when loyalty program customers redeem their benefit points for abstract or tangible rewards (Meyer-Waarden, Benavent, & Castéran, 2013; Meyer-Waarden, 2015).
- *Altered customer buying behaviour*: The willingness of the loyalty card customer to adjust buying behaviour, for example, buying more or other products to earn more loyalty points (Bruneau, et al., 2018).
- *Information sharing*: Loyalty program customers share their experiences with others (positive or negative), such as telling friends and relatives about the grocery store and its loyalty program (Bahri-Ammari, 2012).
- *Openness to information*: Loyalty program customers are receptive/open to targeted marketing of a given product, loyalty program or the firm (i.e., grocery store (Santos & Castelo, 2018)).
- *Active search for information*: Loyalty program customers actively investigate information regarding the firm (the grocery store) and its products to create a good purchase decision and increase their product knowledge or keep them informed about the grocery store and its loyalty program (Sangwan & Agarwal, 2019).

3. Conceptual model

The proposed model for this study is based on expectancy-value theory and customer engagement theory and seeks to determine the interrelationships between the loyalty program behavioural drivers (pro-actively using a loyalty card, point redemption, altered customer buying behaviour, information sharing, openness to information and active search for information) and loyalty program engagement, and the relationship between loyalty program engagement and customer brand engagement.

Figure 1 illustrates the proposed conceptual model to uncover the relationships between the proposed constructs in this study.

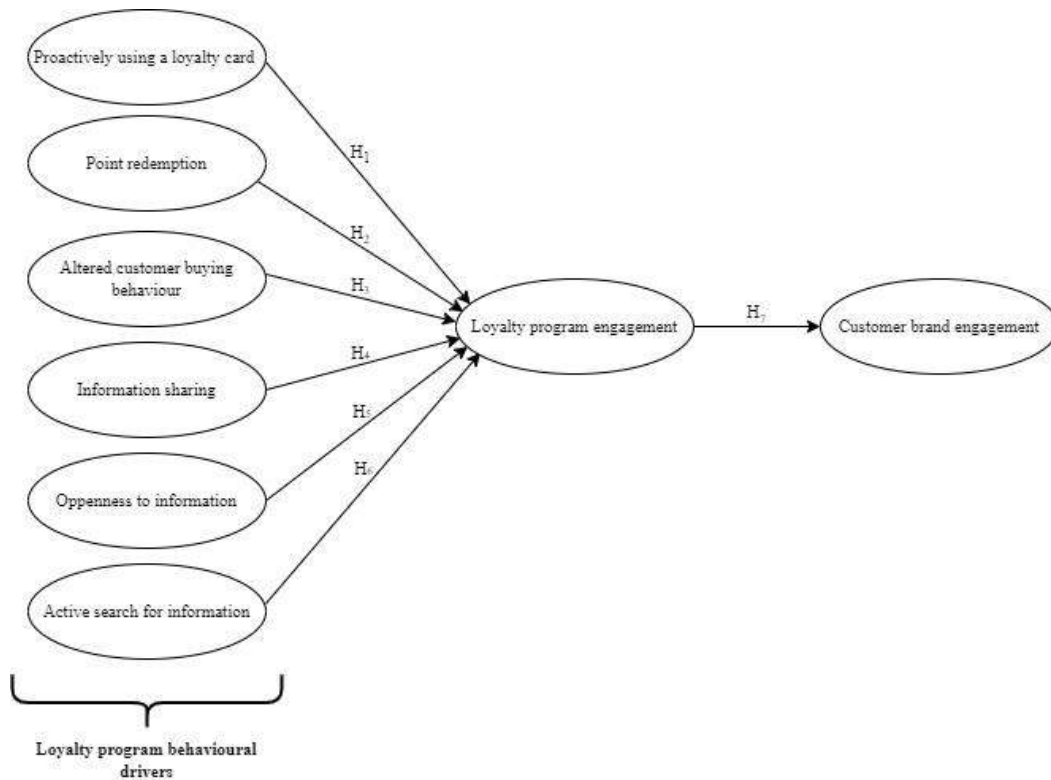


Figure 1: Conceptual model
Source: Own conceptualisation

4. Hypotheses formulation

This section explores the interrelationships between behavioural drivers, loyalty program engagement, and customer brand engagement.

4.1 The impact of loyalty program behavioural drivers on loyalty program engagement

Studies by So, King, and King (2021), Van Doorn et al. (2010), and Bombajj and Dekimpe (2020) confirm that various customer behavioural or firm-related marketing strategies can act as drivers that impact the intensity of customer brand relationships. This section explores the interrelationships of loyalty program behavioural drivers and loyalty program engagement.

4.1.1 The impact of proactively using a loyalty program card and loyalty program engagement

Most loyalty programs are developed to promote increased loyalty program use, where increased customer purchases lead to increased rewards (Liu, 20017). Bazargan, Karray and Zolfaghari (2021) confirm that customer retention, one of the central goals of loyalty programs, is ensured through repeat purchases, specifically, loyalty program cards. According to Meyer-Waarden (2015), loyalty program customers tend to make repeated purchases to ensure maximum value is derived from using the loyalty program card. However, Hupfeld and Speed's (2017) study found a reduction in loyalty program card usage, predominantly based on customers' forgetfulness in bringing their loyalty program cards with them when shopping, as well as some customers who viewed the scanning of the loyalty cards as a tedious process. Even so, Harmse (2019) concluded that the proactive use of loyalty program cards was a valid measure to determine loyalty program engagement. Accordingly, the following hypothesis is put forward:

H₁: Proactively using a loyalty program card has a significant, positive impact on loyalty program engagement by grocery retail customers.

4.1.2 The impact of point redemption on loyalty program engagement

According to Bombaij and Dekimpe (2020), retailers do not only vary in their decisions to implement a loyalty program or not but even more so in how it is implemented. In this regard, Nasir, Lola and Deraman (2019) confirm that most loyalty programs share the practice of customers receiving redeemable points when loyalty program cards are used. Notwithstanding, Bies, Bronnenberg and Gijbrecs (2021) found a general decrease in loyalty point redemption. Also, some studies identified why loyalty points are not redeemed regularly (Nasir, et al., 2019). Consequently, Hollebeek, Das and Shukla (2021) argue that loyalty program points that are not redeemed result in minimal customer engagement. Hence, the following hypothesis is offered:

H₂: Point redemption in loyalty program programs has a significant, positive impact on loyalty program engagement by grocery retail customers.

4.1.3 The impact of altered customer buying behaviour on loyalty program engagement

Rewards in loyalty programs can stimulate customers' buying behaviour (Wu, Sun, & Yada, 2020). Chen et al. (2021) state that loyalty program buying behaviour can be explained through customers' buying frequency, the frequency of their retail visits, and repeat purchase percentage. Retailers can benefit significantly from understanding customers' buying behaviour in loyalty programs and how it can affect further engagement (Minnema, Bijmolt, & Non, 2017). Harmse (2019) confirms that loyalty programs can significantly affect how and when loyalty program members buy. Interestingly, a study by Liu, Ansari and Lee (2020) found that the loyalty status of customers influences their buying behaviour and that delayed rewards increase loyalty program engagement. Thus, the subsequent hypothesis is proposed:

H₃: Altered customer buying behaviour in loyalty programs has a significant, positive impact on loyalty program engagement by grocery retail customers.

4.1.4 The impact of information sharing buying behaviour on loyalty program engagement

According to Bruneau et al. (2018), information sharing regarding loyalty programs refers to customers spreading information about loyalty programs through various traditional or online mediums, contributing to loyalty program engagement. Liu and Jo (2020) found that customers who are genuinely dedicated to a loyalty program could become advocates for the loyalty program and the firm through positive word-of-mouth. Therefore, this could increase loyalty program engagement and ultimately engage with the loyalty program's brand. Furthermore, Dwivedi, Wilkie, Johnson and Weerawardena (2016) argue that some customers were found to create groups to share information regarding specific loyalty programs, reinforcing the socialisation of the brand and promoting loyalty program engagement. Against this background, the following hypothesis is put forward:

H₄: Information sharing about loyalty programs has a significant, positive impact on loyalty program engagement by grocery retail customers.

4.1.5 The impact of openness to information on loyalty program engagement

Customers who actively process loyalty program information from retailers, for example, by reading an email related to the loyalty program, suggest, according to Bruneau et al. (2018), that receptiveness to information also represents loyalty program engagement. Ruthven (2019) explains that openness to information points to an individual's willingness to act rather than provisionally preserving the information. Therefore, Heubner (2018) found that customers in a contemplative state of mind can become progressively more open to information that impacts the practicality of their conclusions and, considerably, more accurate in assessing their viewpoints to attain their objectives, thereby being mindful not to ignore information that can be helpful later. Therefore, the next hypothesis is put forward:

H₅: Openness for information has a significant, positive impact on loyalty program engagement by grocery retail customers.

4.1.6 The impact of active search for information on loyalty program engagement

Customers who are actively searching for information to ensure they are updated regarding information about a loyalty program are considered by Bruneau et al. (2018) to be actively engaged in the loyalty program. Hollebeek et al. (2020) claim that searching for loyalty program information involves, for example, visiting the loyalty program kiosk in the retailer, finding out about a particular promotion for loyalty program members online, or searching for information on a retailer's website to learn more about the loyalty program. Bruneau et al. (2018) also found that customers viewed the search for information about loyalty programs as more effortful and time-consuming. This is why customers engage less frequently in active pursuits for information on loyalty programs. As a result, the following hypothesis is suggested:

H₆: Openness for information has a significant, positive impact on loyalty program engagement by grocery retail customers.

4.2 The impact of loyalty program engagement on grocery retailer brand engagement

Retailers must offer customers shopping experiences that resonate with their value exchange needs, as it assists in driving customer brand engagement (Hollebeek, et al., 2014). Focusing on engaging loyalty programs could be one example of contributing to the customers' value exchange needs, thereby providing opportunities to enhance customers' engagement with the brand. According to Aluri, Price and McIntyre (2019), the central purpose of loyalty programs is increased customer brand engagement. Subsequently, the following hypothesis is suggested:

H₇: Loyalty program engagement has a significant, positive impact on customer brand engagement by grocery retail customers.

5. Methodology

5.1 Research design and method

The nature of the research design for the study was descriptive and quantitative. In the absence of a list of the population, a non-probability convenience sampling method was applied in the study to choose the respondents. A total of 299 grocery retail customers in South Africa completed the research instrument. The proposed sample size was deemed adequate based on Malhotra's (2020) recommendation of a minimum sample range of 200 to 450. Respondents had to be between 18 and 65 years old and have at least one grocery store loyalty program card at a South African grocery retailer that was used in the three months before the collection of data. Data collection was influenced by the South African government's Covid-19 restrictions and regulations at the time, which required using social media platforms (Facebook, WhatsApp and LinkedIn) for data collection purposes. Respondents accessed the self-administered questionnaire through a Google Form link on social media platforms, which ensured anonymity in the responses.

5.2 Research instrument

The self-administered questionnaire included an introduction to the study, the study's objectives, the respondents' rights (including informed consent) and the instructions to complete the questionnaire. The inclusion criteria, as explained above, were also included for confirmation. This paper forms part of a more extensive study on loyalty programs, which included additional constructs such as loyalty, satisfaction, and a green orientation to loyalty programs. The respondents' demographic information was obtained in section A of the questionnaire to align with the study's first objective. A five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5), was used in the remainder of the questionnaire. All the measurement variables selected were proven to be valid and reliable. The items in section B, which focused on loyalty program engagement and the behavioural drivers thereof, as well as customer brand engagement, were measured by the scale of Bruneau et al. (2018). All scales were adjusted to represent the study's context. *Face validity* was attained by using the existing scales from the survey of Bruneau et al. (2018), which were proven to be valid and reliable. A pilot study was also done to confirm that the intended items were measured.

5.3 Data collection and analysis

The data collection stretched over five weeks, while reminders were regularly placed on social media platforms to encourage respondents to complete the questionnaire. In total, 299 respondents completed the survey. The cleaned data were entered into the statistical package IBM SPSS and AMOS version 26.0, which revealed that only 291 of the 299 collected questionnaires could be used due to incompleteness. IBM SPSS was used to analyse the research data and calculate the frequency and descriptive statistics, as well as Cronbach's alphas to measure data reliability and mean values of each construct and construct reliability.

6. Results and findings

6.1 Demographic profile and grocery retailer customer patronage practices

The respondents in the sample were 47.8 per cent male and 52.2 per cent female. Several respondents held an undergraduate degree (44.3 per cent), followed by those who completed matric (32 per cent). When completing the questionnaire, most respondents were full-time students (41.9 per cent), while 36.8 per cent were employed full-time. Most of the respondents were in the 18- to 28-year-old category (72.8 per cent), and the majority indicated their ethnicity to be African (58.8 per cent). Almost half of the sample stated that they purchased from grocery retailers "as needed" (49.5 per cent). Pick n Pay (54 per cent), Woolworths (18.9 per cent), and Checkers (18.6%) were the preferred grocery retailers to shop from where respondents used their loyalty program cards.

6.2 Descriptive statistics

This section presents information regarding the descriptive results of the investigated constructs in the study. Four statements' scores were reversed, namely "I wait for the cashier to ask for my card before presenting it to them", "I forget to take out my loyalty card when I make my purchases at this grocery store", "When I am disappointed by the loyalty program, I talk about it with my close friends and relatives", and "When I receive communication linked to the loyalty program (email, SMS, flyer etc.), I delete it or throw it away immediately".

6.2.1 Grocery store customers' loyalty program behavioural drivers

Table 1: Descriptive statistics for grocery store customers' loyalty program behavioural drivers

Item	Mean	Std. dev.
Proactively using a loyalty card	3.58	1.21
I present my loyalty card to the cashier when they ask for it	4.51	0.85
I wait for the cashier to ask for my card before presenting it to them	2.92	1.35
I present my loyalty card to the cashier, even when they don't ask for it	4.15	1.25
I forget to take out my loyalty card when I make my purchases at this grocery store	2.44	1.28
I spontaneously take out my loyalty card when I'm paying for my purchase	3.90	1.32
Point redemption	3.69	1.36
When I receive a reward to use with my next purchase, I make an effort to return to this store to benefit from it	3.59	1.37
I do what I need to do to redeem my loyalty points and receive my reward	3.96	1.29
When I reach a certain point threshold, I go specifically to this store to get my reward	3.52	1.43
Altered customer buying behaviour	3.54	1.28
I am ready to purchase other products than I have planned to get more advantages offered by the loyalty program	3.49	1.30
I am ready to purchase other brands that I have planned to get more advantages offered by the loyalty program	3.61	1.23
I am ready to buy more products to get more advantages offered by the loyalty program	3.52	1.30
Information sharing	3.50	1.35
When I am disappointed by the loyalty program, I talk about it with my close friends and relatives	3.31	1.48
If I am satisfied with the loyalty program, I recommend it to my close friends and relatives	3.88	1.24
I try to convince my close friends and relatives to become members of this loyalty program	3.33	1.33
Openness to information	3.18	1.27
When I receive communication linked to the loyalty program (email, SMS, flyer etc.), I delete it or throw it away immediately	2.96	1.28
When I receive communication linked to the loyalty program (email, SMS, flyer etc.), I open it immediately	3.11	1.26
When I receive communication linked to the loyalty program (email, SMS, flyer etc.), I take some time to read it	3.47	1.27
Active search for information	3.00	1.35
I look for information about the loyalty program (on the Internet or in-store)	2.94	1.40
I closely follow the accumulation of my loyalty points	3.05	1.31
I keep up with news concerning this loyalty program	2.95	1.33
In the store, I take the new magazines or leaflets with information about the loyalty program	2.89	1.45
I keep informed about the offers of this loyalty program	2.97	1.33
When I receive an offer as a loyalty program member, I am curious, and I look for more information	3.22	1.26

The highest average mean across the grocery store customers' loyalty program behavioural drivers is point redemption (3.69). If point redemption is so prominent for loyalty program members, the consequence from a grocery retailer perspective is that ease of point redemption lowers the possibility of switching behaviour and can create a customer lock-in effect (Alshurideh, Gasaymeh, Ahmed, Alzoubi, & Kurd, 2020), which contributes to the customer brand engagement and consequently drive the grocery retailer's business. The grocery store customers' behavioural driver with the lowest average mean was customers' active search for information (3.0). Although customers' active search for information appears to be the lowest driver of loyalty programs, Hauker and Fjellander (2019) indicate that a lack of actively searching for information about a brand or product might be a consequence of information overload. Their research found that information overload, regardless of

its context, has proven to be influential in three ways, namely a) choice overload, b) the interface design of technological products, and c) a potential source of passive loyalty – indicating customers who stay with a brand without being committed. This implies that grocery store retailers should consider designing loyalty program communication more strategically to relieve loyalty program information overload and to find innovative ways to excite their customers into wanting to know more about the loyalty program, thereby improving loyalty program engagement.

6.2.2 Loyalty program engagement

Table 2: Descriptive statistics for loyalty program engagement

Item	Mean	Std dev.
Loyalty program engagement	3.82	1.52
I would recommend this loyalty program to others	3.90	0.96
I have a strong preference for this loyalty program	3.76	1.03
I like this loyalty program more so than other loyalty programs	3.69	3.13
I intend to interact with this grocery store again during the next two weeks	3.95	0.97

The means related to loyalty program engagement ranged from 3.69 to 3.95, and the standard deviation was between 0.96 and 3.13. The standard deviation of the scale item, “I like this loyalty program more so than other loyalty programs”, indicated a standard deviation of 3.13. Therefore, this item was excluded from the data set. The scale item “I intend to interact with this grocery store again during the next two weeks” stands interestingly in contrast to the demographic question regarding respondents’ frequency of their grocery purchases, where almost half of the respondents indicate they buy merely ‘as needed’ from the grocery store. Then again, as per the definition of customer loyalty program engagement by Bruneau et al. (2018), the concept refers to customers’ behavioural drivers (manifestations) toward a company’s loyalty program *beyond the purchase*.

6.2.3 Customer brand engagement with the grocery retailer

Table 3: Descriptive statistics for customer brand engagement with the grocery retailer

Item	Mean	Std dev.
Customer brand engagement	3.40	1.14
I like to know more about the grocery store brand of this grocery store	3.60	1.03
I pay a lot of attention to anything related to the grocery store brand of this grocery store	3.53	1.15
I keep up to date with things related to the grocery store brand of this grocery store	3.30	1.16
I spend a lot of my discretionary time with this grocery store	3.29	1.24
I am passionate about the grocery store brand that runs this grocery store	3.27	1.12

The means for customer brand engagement with the grocery retailer ranged from 3.27 to 3.60, with the standard deviation ranging between 1.03 and 1.24. Respondents, therefore, revealed that they are engaged with the grocery retailers’ brands and are interested in becoming more engaged to acquire more information about their grocery retailers’ brands. Interestingly, this aligns with the result related to openness to brand information (one of the grocery store customers’ loyalty program behavioural drivers), with a mean of 3.18.

Tables 1 to 3 show that the constructs’ overall mean scores vary between 2.89 and 4.51. These scores are reasonably positive given the Likert scale (one representing “strongly disagree” and five “strongly agree”) that measured all constructs.

6.3 Confirmatory factor analysis

Confirmatory factor analysis commonly estimates the *convergent validity* of the measurement. In this study, convergent validity was established according to Fornell and Larcker’s (1981) and Malhotra, Nunan, and Birks’ (2017) guidelines. As indicated in Table 4, convergent validity was calculated by means of factor loadings and the average variance extracted (AVE), with a threshold of > 0.5

(Tabachnick, Fidell, & Ullman, 2007). Based on this threshold, the following items did not load onto the factors and were removed from the data set: PUC1, PUC5, PR2, CBE1, and CBE4.

Table 4: CFA – Factor loadings, AVE, CR and Cronbach Alpha

Items / Factor	Factor Loadings	AVE	CR	Cronbach's α
Proactively using a loyalty card.				
PUC2	0.790	0.569	0.798	0.679
PUC3	0.784			
PUC4	0.685			
Point redemption				
PR3	0.837	0.656	0.792	0.802
PR1	0.782			
Altered customer buying behaviour				
ABB2	0.812	0.625	0.833	0.830
ABB1	0.796			
ABB3	0.763			
Information search				
IS2	0.707	0.580	0.846	0.848
IS4	0.604			
IS3	0.504			
IS1	0.504			
Openness to information				
OI1	0.873	0.675	0.861	0.893
OI3	0.829			
OI2	0.759			
Loyalty program engagement				
LPE2	0.884	0.658	0.851	0.734
LPE1	0.870			
LPE4	0.661			
Customer brand engagement				
CBE2	0.838	0.560	0.790	0.808
CBE3	0.763			
CBE5	0.629			

The Cronbach Alpha reliability was used to assess the reliability of the factors which emerged from the factor analysis. Bougie and Sekaran (2019) put forward the following thresholds for the Cronbach Alpha values that deems a construct to be sufficiently reliable at 0.7, acceptable under 0.7, but weak below 0.6, and strongly reliable if the value exceeds 0.8.

Table 5 depicts the discriminant validity where the bolded values should exceed the correlation values (Malhotra, 2020). Fornell and Larcker's (1981) thresholds were used to demonstrate *discriminant validity* between the measurement constructs. Accordingly, the bolded values in Table 5 should exceed the reported correlation values.

Table 5: Component Correlation Matrix (Discriminant validity)

	PUC	PR	ABB	IS	OI	LPE	CBE
Proactively using a loyalty card	0.754						
Point redemption	0.328	0.810					
Altered customer buying behaviour	0.434	0.132	0.791				
Information sharing	0.153	0.362	0.426	0.761			
Openness to information	0.128	0.353	0.356	0.401	0.882		
Loyalty program engagement	0.226	0.278	0.391	0.482	0.068	0.811	

Customer brand engagement	0.120	0.245	0.513	0.533	0.340	0.485	0.748
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The results in Tables 4 and 5 point out that the measures for reliability and validity were met and surpassed in this study.

6.4 Regression analysis and results

Multiple regression analyses included the six predictor variables (proactively using a loyalty card, point redemption, altered customer buying behaviour, information sharing, openness to information and active search for information). Hair, Page and Brunsveld (2019) suggest that using the coefficient p-values to select variables to be included in the final model is accepted practice. The initial coefficient p-values of the six predictor values were proactively using a loyalty card (PUC) $p = 0.000$, point redemption (PR) $p = 0.000$, altered customer buying behaviour (ABB) $p = 0.000$, information sharing (IS) $p = 0.000$, openness to information (OI) $p = 0.000$ and active search for information (SFI) $p = 0.000$. Subsequently, with all six predictor variables' p-values < 0.005 , the new model could include all six predictor variables (Malhotra, 2020). Therefore, for the new model, the six-loyalty program behavioural drivers of customers, namely proactively using a loyalty card, point redemption, altered customer buying behaviour, information sharing, openness to information, and active search for information, significantly predict loyalty program engagement. Similarly, the initial coefficient p-value of loyalty program engagement (LPE) $p = 0.000$ significantly predicts customer brand engagement.

The new model's regression results revealed that the model explained 48.5 per cent of the variance, and the model significantly predicts customer brand engagement, $F=169.76$, $p=0.000$. Furthermore, proactively using a loyalty card contributed second most to the new model ($\beta=0.244$; $p=0.000$), and point redemption contributed most of the independent variables to the new model ($\beta=0.608$; $p=0.000$). Similarly, although slightly less, altered customer buying behaviour also impacted the model ($\beta=0.233$; $p=0.000$), and so did information sharing ($\beta=0.212$; $p=0.000$). Openness to information (OI) contributed the least to the new model ($\beta=0.005$; $p=0.000$), while actively searching for information (SFI), although to a lesser extent, also impacted the model ($\beta=0.181$, $p=0.000$). Moreover, loyalty program engagement contributed significantly to the new model ($\beta=0.485$; $p=0.000$). Additionally, multicollinearity was not a concern (proactively using a loyalty card, Tolerance=0.87, VIF=1.04, point redemption, Tolerance=0.67, VIF=1.38, altered customer buying behaviour, Tolerance=0.75, VIF=1.27, information sharing, Tolerance=0.61, VIF=1.64, openness to information, Tolerance=1.00, VIF=1.00 and active search for information (SFI) Tolerance=0.72, VIF=1.39 and loyalty program engagement, Tolerance=1.00, VIF=1.00). Finally, as per Hair et al. (2014) (χ^2/df 1.982, TLI 0.929, CFI 0.943 and RMSEA 0.218), adequate model fit results were obtained. This confirms that the adjusted model supports the data (Malhotra, 2020). Therefore, to illustrate the analysis results, Figure 2 indicates the adjusted conceptual model.

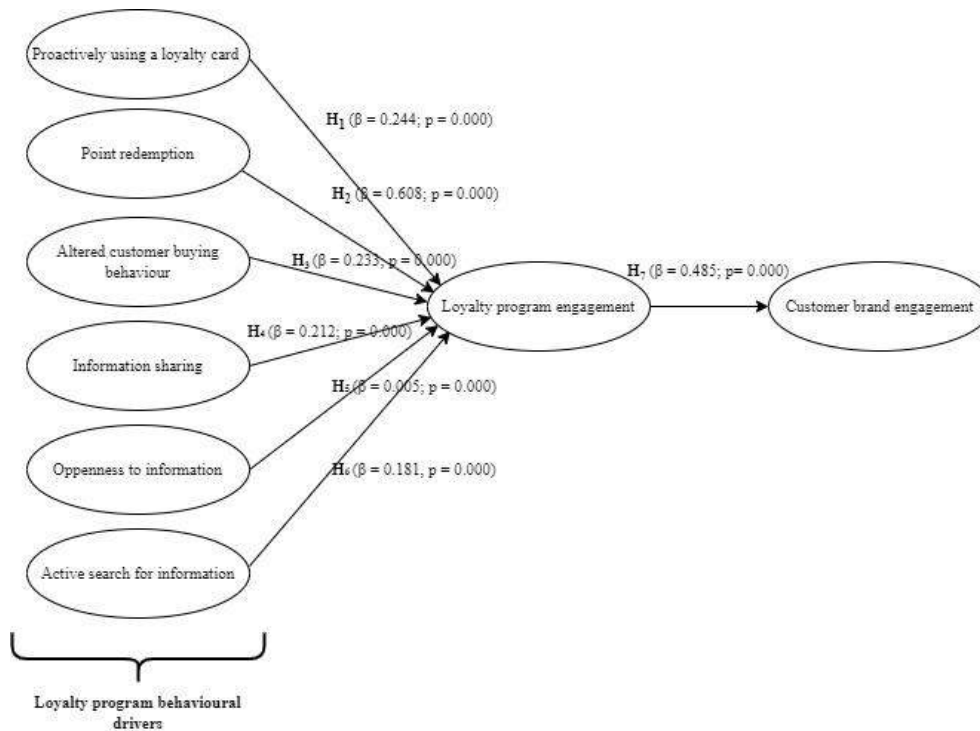


Figure 2: An adjusted conceptual model
Source: Own conceptualisation

Figure 2 indicates that point redemption is the most significant predictor of loyalty program engagement of grocery store retailers ($\beta = 0.608$; $p = 0.000$). This loyalty program behavioural dimension in the adjusted model is followed by Proactively using a loyalty card, having the second-largest influence on loyalty program engagement of customers of grocery store retailers. Loyalty program engagement is a significant predictor of customer brand engagement. Table 6 below points toward the results of the hypotheses testing.

Table 6: Hypotheses testing results

Hypothesis	Hypotheses testing result
H ₁ : Proactively using a loyalty program card has a significant, positive impact on loyalty program engagement by grocery retail customers.	Accepted
H ₂ : Point redemption in loyalty program programs has a significant, positive impact on loyalty program engagement by grocery retail customers.	Accepted
H ₃ : Altered customer buying behaviour in loyalty programs has a significant, positive impact on loyalty program engagement by grocery retail customers.	Accepted
H ₄ : Information sharing about loyalty programs has a significant, positive impact on loyalty program engagement by grocery retail customers.	Accepted
H ₅ : Openness for information has a significant, positive impact on loyalty program engagement by grocery retail customers.	Accepted
H ₆ : Openness for information has a significant, positive impact on loyalty program engagement by grocery retail customers.	Accepted
H ₇ : Loyalty program engagement has a significant, positive impact on customer brand engagement by grocery retail customers.	Accepted

7. Conclusion

This study investigated the drivers of grocery retail customers' engagement with a loyalty program and the grocery retailer brand. This study successfully addresses this aim and is aligned with previous customer brand engagement by applying the conceptualisation of loyalty program engagement as per Bruneau et al. (2018). Similarly, this study addresses loyalty program engagement to comprise various behavioural drivers which influence, specifically in this case, grocery retail customers' loyalty

program engagement. The study also expands the work of Bruneau et al. (2018) to reflect a different hierarchy of behavioural drivers, where the hierarchy is not entirely based on the different effort levels related to each driver. For example, in Bruneau et al.'s (2018) study, openness for information is second last in the hierarchy of effort in engaging with a loyalty program.

In contrast, in this study, it is the least significant behavioural driver of loyalty program engagement. However, the hierarchical order of the remaining behavioural drivers is the same as those suggested in the original study by Bruneau et al. (2018). This study also affirms that, as loyalty program engagement consists of various behaviours, loyalty program engagement has a significant and positive impact on customers' brand engagement with grocery retailers, which ultimately influences customer brand relationships (Brodie, et al., 2011). Furthermore, this study shows that traditional loyalty program measures, such as reading an email about the loyalty program or using the loyalty card (Raïes, Mühlbacher, & Gavard-Perret, 2015), when used in isolation, are not only insufficient to claim loyalty program engagement, but also to suggest customer brand engagement. Therefore, more involved, demanding behavioural drivers should also be included in a loyalty program engagement strategy to enable a deeper level of customer brand engagement in a balanced approach.

8. Managerial Implications

With almost all South African grocery retailers employing loyalty programs over the past few years, it is central for retailers to look beyond mere enrollments in their loyalty programs and shift their focus to loyalty program engagement. Failure to change to personalised contact after enrolment, not letting grocery retail customers know how the program works in simplistic ways and being explicit about the loyalty program's benefits will prevent grocery retailers from building genuine customer brand relationships.

In a big data world, grocery retailers are in a prime position to transform cold data about their customers into engaged relationships. Also, as Berry (2015) has pointed out, many firms still consider a loyalty program member as an engaged customer based on using the loyalty card and point redemption. However, Bruneau et al. (2018) warn against this misguided view of loyalty program usage and state that these limited efforts do not predict customer brand engagement. By monitoring a broader spectrum of customer behavioural drivers of loyalty program engagement, grocery retailers can, through their loyalty programs, induce higher levels of customer brand engagement. Ideally, as is evident from the hierarchical ordering of customers' behavioural drivers of loyalty program engagement, managers could take the bold step to identify engaged grocery retail customers to look at more demanding customer behavioural drivers to motivate customers to alter their grocery buying behaviour. In promoting such behaviours, managers could ensure closer loyalty program engagement, enhancing grocery customers' engagement with the grocery retailer brand.

Acknowledgments

The author acknowledges the honours student groups who assisted with the data collection.

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Investigating Marketing Factors That Influence Customer Loyalty in the Sports Betting Industry

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Keywords

Customer loyalty, loyalty programmes, trust, effective complaints handling, customer, sports betting industry

Abstract

This study was motivated by the current lack of empirical evidence to prove the relationship between factors influencing customer loyalty in the sports betting industry. The researcher was interested in investigating customer loyalty factors (bookmaker trust, effective complaints handling, loyalty programmes, effective communication, and customer satisfaction) that might have led to the uneven distribution of the market share among bookmakers in Gauteng.

A quantitative research approach was employed and the convenience sampling method used for this study comprised respondents that were provided on a database by Osmoz Consulting. A total of 385 valid responses from participants aged between 18 to 65 were collected using an online questionnaire and all racial groups were included regardless of their gender. A descriptive and standard multiple regression directed on IBM Statistical Package for Social Sciences (SPSS) was used.

This study found that all the five factors have a significant positive influence on customer loyalty. However, trust and effective complaints handling were the main factors influencing customer loyalty. Bookmakers are encouraged to focus on improving trust and ensuring effective handling of complaints. Management in the sports betting industry should invest more effort in ensuring that complaints are effectively handled, and trust between bookmakers and bettors is greatly improved. This research was done in Gauteng only and this is the main limitation to this study.

1. Introduction

Sports betting in South Africa has grown to become the second most popular mode of gambling after casinos (Sangoco, 2019). Nienaber (2016) says that reasons for the growth of the sports betting industry in South Africa are unknown and therefore cannot be attributed to marketing since the legal environment is not in favour of advertising and/or promotion of any gambling activities. The Gambling Act (2004) effectively renders most of the common traditional marketing factors proved to be effective in other countries legally inapplicable in South Africa.

Nonetheless, betting companies must do their best to build long-term customer loyalty with this industry's already available nomadic customers (Kotler et al., 2017). Customer loyalty is critical in the betting industry, especially since there is limited capacity for product differentiation and very little price elasticity involved (Griffiths et al., 2017; Hing, 2014). Therefore, the need for betting companies to influence customers to consciously decide to be loyal to one bookmaker becomes essential (Ferreira et al., 2016). Consequently, customer loyalty has become the fulcrum of sports betting marketing in South Africa. However, available literature and previous studies on this subject do not relate to the South African context due to legal constraints (Hanss et al., 2015; Griffiths et al., 2017).

Several studies have indicated that customer loyalty is driven by customer satisfaction (which is itself a result of service quality), communication, loyalty programmes, organisational trust (credibility), among many other factors (Toyin and David, 2011; Ferreira et al., 2016; Kotler et al., 2017; Khadka and Maharjan, 2017). Therefore, it has become evident that research must be undertaken to investigate and ascertain whether these same drivers have the same influence on customer loyalty in the betting industry,

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particularly in South Africa; the extant literature is scant in this regard. The main objective of this study is to investigate marketing factors that influence customer loyalty within the sports betting industry.

Customer Loyalty in the sports betting industry

Wohl (2018) discovered that betting companies mistake gambling problems (addiction) as loyalty, making it difficult to separate loyal customers from problem gamblers. Nevertheless, a study conducted in Italy by Calsova (2016) concluded that only less than 18% of bettors are loyal to one particular bookmaker, with over 70% having unstable or polygamous loyalty to different bookmakers, and about 10% not showing loyalty to any bookmaker. However, the study did not investigate further the factors that drive loyalty in this industry, and this current study sought to close that gap.

2. Literature Review

2.1 Loyalty Programmes and customer loyalty

Loyalty programmes according to Sharp and Sharp (1997), are structured marketing efforts which reward, and therefore encourage loyalty behaviour. These programmes are also referred to as rewards to customers which are meant to encourage them to return to stores where they frequently make repurchases as well as to be loyal (Investopedia 2018). customer loyalty programmes are not easy to develop and manage but if they are properly managed, they play a great role when it comes to driving customer loyalty.

In his definition, Toporek, (2012) reiterated that loyalty programmes use the psychological principles of reciprocity, commitment and loss aversion to increase the likelihood of customer loyalty. However, when it comes to the gambling industry, researchers have been silent concerning loyalty programmes, probably because gambling loyalty programmes are believed to generate harm to vulnerable individuals (Wohl, 2018).

Due to limited product differentiation in the sports betting industry, loyalty programmes give organisations a competitive edge (Dhamdhere, 2019). Loyalty programmes are widely believed to increase customer spending since they give customers a boost in motivation that in turn makes them want to spend more (Krenzin, 2018). Most bookmakers have rewards programmes that encourage players to stick around and stay loyal to them, at least for as long as the loyalty programmes exist (Onlinebettingsites, 2019). Though every rewards programme is unique, the one thing they all share is that the more you bet, the more you get in return.

However, a study by Zakaria, Rahman, Othman, Yunus, Dzulkipli & Osman (2014) shows that in a competitive industry, customers can be loyal to more than one brand since loyalty programmes have become ubiquitous. Interestingly, Calvosa (2016) also wrote that there is a limited number of customers who are exclusively loyal to one betting company, hence, most of them adopt a multi-brand-loyalty behaviour.

Though loyalty programmes have proved to work in many industries as indicated by the above discussion, the same have not been tested in the sports betting industry in South Africa, and this study sort to close this gap.

2.2 Trust and Customer loyalty

Brand trust is defined as the willingness of the average consumer to rely on the ability of the brand to perform its stated function and has been shown to be a key contributor to brand equity and customer loyalty and it has become a subject of much discussion amongst business, academia and the media over the past decade (Sallam and Sefnedi, 2017). Today's consumers have more options than ever when it comes to choosing among a huge mix of hundreds of brands and thousands of products and services and in such a fiercely competitive environment, brand trust has become an important competitive differentiator (Bedgood, 2019). Orzan, Platon, Ștefănescu, and Orzan (2016:145) believe that "underlying loyalty is always trust". Furthermore, brand trust leads to customer loyalty because trust creates exchange relationships that are highly valued, therefore, in this respect, it is important for a bookmaker to focus on building and maintaining trust since it represents the basis for long-term customer relationship.

However, this view on brand trust has not yet been previously studied in the sports betting industry, hence the need for this study.

There is a robust relationship between brand trust and brand loyalty (Chinomona, 2016) Upamannyu, Gulati, Chac and Kaur (2015), also discovered that there is a strong relationship between customer trust and repurchase intention, even though the relationship is much stronger when corporate social responsibility is used as a moderator.

In agreement with the other studies, safestbettingsites.com, (2019) suggests that for bookmakers to be reputable, they should make sure that winnings are paid in time, bonus agreements and any other agreements must be honoured and when it comes to disputes, customers must feel fairly treated. Hence, to gain customers' trust, companies need to ensure that products and/or "services offered match or exceed customer expectations" (Mbango & Phiri, 2015:86)

In their 2018-2021 publication, The British Gambling Commission points out that trust and transparency are still the most prominent concerns in the gambling industry. Machin (2019) believes that being a trusted and regulated bookmaker is critical for customer loyalty in the gambling industry and customers view payments are a cornerstone to trusting a betting company.

This study views trust as a positive relationship between a bookmaker and a customer which is based on the customer's belief that the bookmaker is reliable on its ability to fulfil the promises it makes.

2.3 Service quality and customer loyalty

Service quality analysis makes an impact on the development of the customer loyalty concept therefore service quality can be regarded as one of the most frequently analysed customer loyalty determinants. Spacey (2017) defines service quality simply as a subjective value of service to customers which is driven by needs, expectations and/or perceptions. It is a multi-dimensional construct commonly based on customer judgements about service supplier and customer interactions and service itself and it is seen as the difference between customers' expectations and perceptions of service with the view of building a competitive advantage (Iddrisua, Noonib, Fiankoc, & Mensahd, 2015).

The Gambling Commission of UK (2017) noted that the way a bookmaker handles complaints in the sports betting industry forms the basis of how its service quality is viewed by customers and stakeholders. Therefore, effective complains handling has become the basis for measuring service quality in the sports betting industry. Hsiao, Chen, Choy, & Su, (2016) noted that complaining is one of the options available to customers to express their dissatisfaction. A complaint is when a customer brings a problem to the attention of the company and expects some redress (2015). (SBIF, 2009). More generally, a complaint is an expression of dissatisfaction communicated to an organisation in regard to its products and/or services (Carvajal, Ruzzi, Nogales and Moreno, 2011).

From the above discussion, it has been proved that effective customer complaints handling has an impact on customer loyalty. However, this assertion needed to be thoroughly investigated in light with the sports betting industry in South Africa since there is limited literature in this regard.

2.4 Effective Communication and customer loyalty

Effective communication is the most important part of customer service and the real secret to effective customer communication lies in the ability to gauge customer's expectations and then respond appropriately, especially in this age of digital communication, when organisations may not be able to meet customers face to face (Patel, 2020). Mbango & Mmatli (2019) defines effective communication as the customers' perception of the extent to which an organisation interacts with them in a warm and personal way. It is believed that effective communication tools bring about a sense of satisfaction and friendship (Muhamedi Ariffin, 2017).

Kotler et al (2017) suggest that a company must carefully integrate its many communication channels to deliver a clear, consistent, compelling and even personalised message about the organisation and its brands. All points of contact between the customer and the bookmaker's content about its brand must be identified and more effort should be directed towards delivering a positive consistent message at each contact with the aim of tying together all the bookmaker's messages and images and align them with customer preferences (Linton & Shoenberger, 2019).

2.5 Customer satisfaction and customer loyalty

According to Pratiwi, Hana, & Rosmawati, (2019), customer satisfaction is an emotional state of consumers/subscribers gained after comparing the performance of a product or service that has been purchased with their expectations. Customer satisfaction has also been defined as the level of emotional reactions from service experience, thus, satisfaction is based on direct past experience, (Darmawan, Mardikaningsih, & Hadi, 2017). Mbango, (2018), define customer satisfaction as a feeling of pleasure, fulfilment and desire towards a service rendered and it is also viewed as the level of post-purchase dissonance.

Customers feel satisfied when they have positive feelings towards the concerned service or product and such positive feelings are derived from meeting or exceeding their wants, demands and expectations. Therefore, customer satisfaction, as noted by Ananda & Devesh (2018) and supported by Nobar & Rostamzadeh (2018), is a result of service quality and customer expectations, among other influencing factors; and is a positive driver of customer loyalty (Gong & Yi, 2018).

Available evidence showed that there is a significant relationship between customer satisfaction and customer loyalty (Leninkumar, 2017). Customer loyalty is considered a result of customer satisfaction.

2.6 Problem statement

The growth in the regulated gambling market, both online and brick and mortar shops, is accompanied by a continuous increase in the level of competition globally and South Africa (Calsova, 2016; Gauteng Gambling Board, 2019). This growth has necessitated the need to build long-term loyalty with customers who are always moving from one bookmaker to another. The sports betting industry is very competitive, with over one hundred and twenty bookmakers registered in Gauteng alone, making the customer loyalty phenomenon critical (GGB, 2019). There is limited capacity for product differentiation and very little price elasticity involved in this industry (Griffiths et al., 2017; Hing, 2014). Therefore, the need for bookmakers to influence customers to consciously decide to continue betting with one particular bookmaker becomes essential. Consequently, customer loyalty has become the fulcrum of sports betting marketing in the country, given the gap between the market-share leaders and competitors. However, studies that investigate factors influencing customer loyalty in the sports betting industry in South Africa are scarce (Nienaber, 2016). Therefore, this study aims to investigate these factors in South Africa.

3. Research Objectives

Primary objective

The primary objective of this study was to determine the customer service factors that influence customer loyalty in the sports betting industry in Gauteng, South Africa.

Secondary objectives

In order to achieve the aim of the study, the following secondary objectives were formulated:

- To determine the influence of loyalty programmes on customer loyalty within the sports betting industry.
- To determine the influence of trust (credibility) on customer loyalty in the sports betting industry.
- To determine how service quality, with particular reference to complaints handling, influences customer loyalty within the sports betting industry.
- To determine the influence of effective communication on customer loyalty in the sports betting industry.
- To determine the influence of customer satisfaction on customer loyalty within the sports betting industry.
- To determine the main factors influencing customer loyalty in the sports betting industry.

4. Research methodology

Since this research intended to investigate factors influencing customer loyalty in the sports betting industry, the use of a quantitative approach was more appropriate as compared to qualitative approach because the research relied on hypothesis testing and the researcher needed not to do intelligent guesswork, but to follow clear guidelines and objectives (Lichtman, 2013:4; Wright et al., 2016). Above

all, the main factor that motivated the choice of this approach is it guaranteed respondents anonymity, which is important since most gamblers are not comfortable having their gambling information exposed.

The research was based entirely on the positivism philosophy, which gives rise to quantitative methodology (Mukherji and Albon, 2014).

4.1 Sampling method

Given the unknown number of sports bettors in Gauteng, a less desirable non-probability sampling method known as convenience sampling was applied when collecting data. The researcher drew samples from a database of bettors and an online questionnaire was sent to these respondents via emails resulting in 404 responses being collected.

This was the best option for the research, especially given that the researcher had access to the bettors' database. The bettors willing to participate in the research provided their responses through an online questionnaire.

A total of 404 responses collected for this study from a targeted 1200 bettors. However, only 385 responses that met the desired criteria were considered for further analysis.

5. Data Analysis and interpretation

5.1 Scales/Mapping

The researcher intended to investigate the influence of five constructs on customer loyalty in the sports betting industry in Gauteng: loyalty programmes (LP), effective complaints handling (ECH), trust (Tr), effective communication (EC), and customer satisfaction (CS). Table 4.1 below shows the constructs and the question number on the questionnaire.

Table 1: Study constructs and items used to measure them

Construct (Latent)	# Items (Observed)/Qn. Number
Loyalty Programmes [LP]	8, 9, 10
Effective Complaints Handling [ECH]	11, 12, 13
Trust [TR]	18, 19, 20
Effective Communication [EC]	25, 26, 27
Customer Satisfaction [CS]	33, 34, 35

5.2 Case screening

Data collected from participants were captured, recorded, and screened for errors and missing values before the analysis. The reason for case screening was to proactively check the data for potential errors that could have a negative impact on the analysis. This process involved excluding cases that had missing values for item scale measures during the data collection process. Case screening also involved excluding those cases that did not qualify to be part of the final results and identifying cases where respondents did not engage with the questionnaire.

A total of 404 responses were collected for the study through an online questionnaire administered via emails.

5.3 Gender composition

Table 2 below shows the gender distribution of respondents in this study. Based on the findings of this study, 59.9% of the sports betting customers who participated in this research are male, 33.2% are female, and 6.8% preferred not to disclose their gender.

Table 2: respondents gender distribution

Q5. Please indicate your gender.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	127	33.0	33.2	33.2
	Male	229	59.5	59.9	93.2
	Prefer not to say	26	6.8	6.8	100.0
	Total	382	99.2	100.0	
Missing	System	3	0.8		
Total		385	100.0		

5.4 Age

Out of the sampled respondents 40.2% bettors were between the age of 31 and 40 years. The least contribution was from the ages between 18- and 20-years old, who only constituted 1.8%. Bettors between the ages of 41 and 50 made 30%. Below is the age distribution of the respondents whose responses were considered for further analysis in this current study.

Most of the bettors who took part in this study had matric as their highest academic qualification (43.3%). The least contribution came from bettors who had a degree as their highest qualification (99.2%).

5.5 Frequency of bookmakers

Most of the bettors (33.2%) place their bets with more than three bookmakers. About 32.4% place bets with exactly three bookmakers. Only a smaller percentage (5.7%) place bets with only one bookmaker, and 28.7% bet with exactly two bookmakers.

5.6 Favourite online bookmaker

Hollywoodbets is the favourite bookmaker amongst online bettors, with 46.6% of the bettors indicating that they place their online bets with this bookmaker. Supabets Gaming Group is the second favourite, with 24.4%, followed by Betway, with 22.6%. Topbet, which represented other bookmakers, has fewer bettors betting online with them (6.3%).

5.7 Favourite physical bookmaker

Supabets was the popular physical bookmaker among bettors in Gauteng, with 56.8% indicating that they place their physical bets with this bookie. Topbet, which represented other bookmakers, was the second favourite, scoring 31% of the total valid responses. Hollywoodbets and Betway were least preferred by bettors for physical betting.

6. Factors influencing Customer Loyalty in the sports betting Industry

The factors influencing customer loyalty (CL) in the sports betting industry were categorised into five: LP, ECH, trust (Tr), EC and CS.

Questions 8, 9, and 10 were intended to establish the relationship between LP and CL. The questions were designed to suit the CLI method of establishing the level of CL (Section 2.4.5.). Questions 11, 12, and 13 were designed to establish the relationship between ECH and CL. A similar format to the one for LP was also used for this construct and all other constructs under study. While questions 18 to 20 were intended to determine the relationship between trust (Tr) and CL, questions 25 to 27 were intended to establish the relationship between CL and EC. The relationship between CS and CL was measured from questions 33 to 35.

6.1 Corelation.

Table 3: Construct Correlation Matrix

		Correlations ^c					
		LP	ECH	TR	EC	CS	CL
LP	Pearson Correlation	--					
ECH	Pearson Correlation	.108*	--				
	Sig. (2-tailed)	0.034					
TR	Pearson Correlation	-0.089	.278**	--			
	Sig. (2-tailed)	0.082	0.000				
EC	Pearson Correlation	.404**	-.143**	0.035	--		
	Sig. (2-tailed)	0.000	0.005	0.494			
CS	Pearson Correlation	-0.021	.132**	.446**	.150**	--	
	Sig. (2-tailed)	0.686	0.009	0.000	0.003		
CL	Pearson Correlation	.538**	.443**	.550**	.592**	.621**	--
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	

*. Correlation is significant at the 0.05 level (2-tailed).
 **. Correlation is significant at the 0.01 level (2-tailed).
 c. Listwise N=385

Table 3 above indicates that CL and the marketing factors under study (LP, ECH, trust, EC and CS) are positively correlated. The strength of the relationship is robust at 96.1%, which means that LP, ECH, trust, EC and CS explain up to 96.1% of the variance of CL.

Table 4 below shows the unstandardised factor loadings, which are also interpreted as unstandardised regression coefficients. Also indicated in the same table are standardised factor loadings interpreted as correlations between the item and its factors. All tolerance values are > .70, and this is also good evidence for convergent validity.

Table 4. Regression Coefficients
Coefficients^a

Model		Unstandardized B	Coefficients Std. Error	Standardised Coefficients Beta	t	Sig.	95% Confidence interval for B		Collinearity Statistics	
							Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.076	.060		1.271	.205	-.042	.193		
	LPx	.235	.009	.296	25.776	.000	.216	.252	.781	1.280
	ECHx	.372	.010	.422	38.322	.000	.353	.391	.851	1.175
	TRx	.430	.011	.453	38.339	.000	.408	.408	.738	1.355
	ECx	.160	.008	.234	20.139	.000	.142	.145	.763	1.310
	CSx	.243	.009	.323	28.116	.000	.226	.226	.780	1.282

a. Dependent Variable: CL

The results in Table 5 below show that the model predicting CL is statistically significant. The $R^2 = 0.961$ suggesting that these predictors (LP, trust, CS, EC and ECH) explain up to 96.1% of the variance of CL.

Table 5. Model summary

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.980 ^a	.961	.960	.13053

a. Predictors: (Constant), CSx, LPx, ECHx, ECx, TRx

b. Dependent Variable: CL

Table 6 below shows the model fit indices obtained for this research. Some of the common model fit indices from table 6 were then measured against the thresholds proposed by Hair et al (2014). The results prove that the model fits the data and can be adopted to represent the factors influencing CL in the sports betting industry.

Table 6. Model fit indices

CMIN	314.38	
df	89	
P-value	0.000	
CMIN/df	3.532	<0.5
GFI	0.90	>0.9
AGFI	0.87	
NFI	0.87	
TLI	0.88	
CFI	0.90	>0.9
RMSEA	0.081	<0.08
PCLOSE	0.000	
SRMR	0.125	
AIC	376.4	
BIC	498.9	

The researcher confirms that the overall model Chi-Square (X²) at 314.38 with 89 degrees of freedom is correct. The p-value associated with this result is 0.000. This p-value is significant using a type I error rate of .05. The value for Root mean square error of approximation (RMSEA), is 0.081 which indicates a moderate fit index. This value appears quite fine though it is slightly above the .08 guideline for a model with 15 measured variables and a sample size of 385.

In addition, the standardised root mean square residual (SRMR) with a value of .125, way above the conservative cut-off value of .05, also provides the necessary support for model fit. Furthermore, both GFI (goodness of fit Index) and CFI (comparative fit index) values were 0.9 which was not bad at all given that they are equal to the minimum acceptable value. Therefore, the above values show a moderately fit model for the research.

The indicators in this study were caused by more than one factor and the error items were assumed to correlate and this resulted with a multi-dimensional model being considered for this research. Theoretically, when working with latent variables and reflective scores, constructing a CFA is ideal to assess if the data fit the proposed model. Below on figure 4. is a confirmed model for this research showing reflective scores for the factors under study. This model is relatively fit as proved by the statistical explanation above.

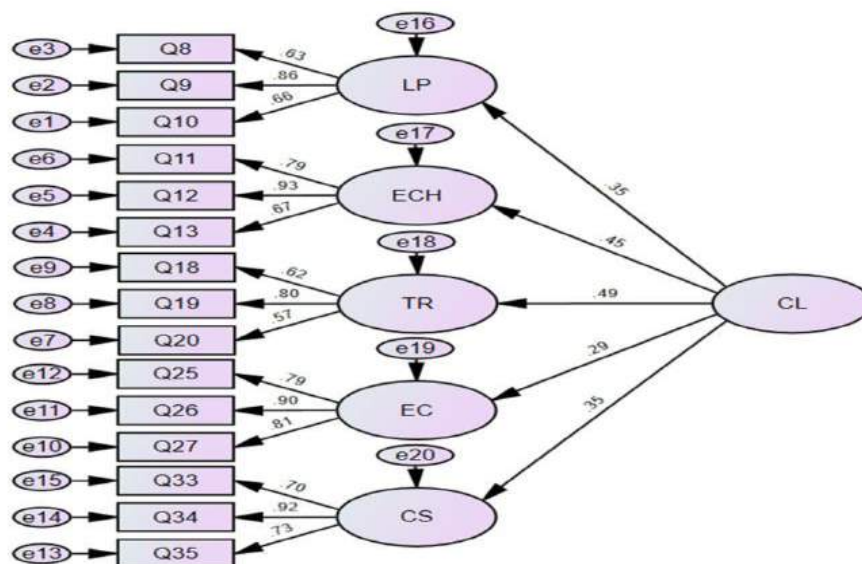


Figure 1: Sports Betting Confirmed CL Model

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Loyalty programmes

LP are structured marketing efforts that reward and encourage loyalty behaviour. These programmes are also referred to as rewards to encourage customers to return to bookmakers who they frequently place bets with. Chen (2019) and Schofield (2019) agree that although LP have several goals, which include to

increase business and sales, the main aim is to strengthen the relationship between the customer and the bookmaker so that customers keep coming back regularly.

Owing to limited product differentiation in the sports betting industry, LP is believed to give bookmakers a competitive edge (Dhamdhare, 2019). Most bookmakers have rewards programmes that encourage players to stick around and stay loyal to them, at least for as long as the LP exists (Onlinebettingsites, 2019). Although every rewards programme is unique, the one thing they all share is that the more you bet, the more you get in return.

Findings on LP indicate that most respondents are impartial about the influence of LP. Though LP has proved to play a significant role in influencing CL in other industries, the influence it has on CL in the sports betting industry is small as denoted by the standardised coefficient of 0.296, which was less than the acceptable cut of 0.300. However, the effect size can extend to medium if rounded off to 1 decimal place.

The findings from this study show that although LP influences customers loyalty, the effect is small in the sports betting industry as compared to other industries. Therefore, from these findings, it is concluded that LP only accounts for up to 29.6% of the changes in CL. Bettors do consider LP when deciding to be loyal to a bookmaker even though the effect is small.

7.2 LP recommendations

In every competitive industry, as proved by Zakaria et al. (2014), customers can be loyal to more than one brand since LPs have become ubiquitous. CL programmes appear less efficacious in achieving CL due to the multi-brand-loyalty in the sports betting industry. The mere focus by bookmakers on increasing the sensitivity to external rewards by bettors may result in a lack of emotional bonds with the bookmaker, which is much needed for CL to exist. While LPs improve customer relationships, they also lead customers to expect extraordinary efforts from companies as an entitlement.

The research findings show that there is a limited number of customers who are exclusively loyal to (place bets with) one betting company; hence, most of them adopt a multi-brand-loyalty behaviour. However, this can be countered by bookmakers thriving to create LPs that are unique and distinguishable such as percentage payback on losing bets. Modern LP must not just award points but must go beyond and appeal to bettors' need for deeper engagement and personalised experiences.

Furthermore, for LPs to be effective, they have to be tied to the brand's core values and then looped around what the bettor is looking for, not what the bookmaker thinks about the bettor's experience. Since this research shows that LPs have a small influence on CL in the sports betting industry in Gauteng, bookmakers can rather use them as a way of buying repeat purchases. However, the number of bettors who chose to remain neutral on loyalty programme statements (questions) prove that bettors have limited information about LP and how bettors can benefit from these programmes. EC on LP can assist bettors in understanding LP that are offered by bookmakers, and it is only then when bettors can understand the LP and their benefits.

8. Trust

Bookmaker trust is the willingness of the average bettor to rely on the ability of the bookmaker to perform its stated function. This study asserts that trust is the most critical, strategic, and enduring intangible asset that a bookmaker can possess. The findings of this research concur with The British Gambling Commission's findings in their 2018–2021 publication, which points out that trust and transparency are still the most prominent concerns in the gambling industry and that bettors view winnings payments as a cornerstone to trusting a bookmaker.

Trust is a key contributor to brand equity and CL. Owing to the competitive environment in which bookmakers in Gauteng are operating, sports bettors now have more options than ever when choosing among hundreds of bookmakers.

This study found that trust has the greatest influence on CL in the sports betting industry.

The current study concurs with the literature on the influence of trust on CL. The findings reveal that most bettors agree that trust influences their decision to be loyal to a bookmaker. Based on these findings, it can then be concluded that bookmaker trust influences the bettors' decision to place their next bets with a bookmaker they trust. Bettors may also recommend that bookmaker to friends and family and try other betting games offered by the same bookmaker they trust. According to the findings of this research, trust contributes up to 45.3% of the variance in CL in the sports betting industry in Gauteng.

8.1 Recommendations on trust

Bookmakers need to focus on building and maintaining trust since it represents the basis for long-term CL. If trust exists between the bettors and the bookmaker, the effort to foster cooperative relationships will be easier. Breakdowns in trust occur when the actions of a bookmaker differ from the promises and values communicated by them to the bettors. A bookmaker needs to deliver what it has promised. The bookmaker should show that it is indeed capable of delivering those promises because failing to build trust undermines CL and can damage a bookmaker's revenue.

Although a traditional bookmaker's trust is still important, trust in the online promise can be a potent force. Online reviews have a direct impact on the bookmaker's reputation. The ability to build bookmaker trust through reviews from trusted sources is simply another good way to gain trust from potential and existing bettors.

Bettors are in it for the money, as shown in the findings above. Therefore, it is for this notion that bookmakers are recommended to ensure that winnings are paid in time and that bettors have many withdrawal options at their disposal. Bonus agreements and any other agreements must be honoured. Regarding disputes, customers must feel fairly treated for a bookmaker to earn trust from bettors. The extent of the bettors' trust to a bookmaker builds true loyalty, which, in turn, will make competitive offers, convenience, and the promise of "something better" matter less because most bettors' connection to the bookmaker will be based on how much they trust the bookmaker.

9. Effective complaints handling

Complaining is one of the options available to customers to express their dissatisfaction. A complaint is when a bettor brings a problem to the bookmaker's attention and expects some redress. More generally, a complaint is an expression of dissatisfaction communicated by bettors to a bookmaker regarding the bookmaker's products and/or services. Therefore, complaints handling is the procedures and actions of bookmakers to address bettors' complaints and recover dissatisfied bettors. Recent studies in the banking sector have proved that ECH improves CL (Carvajal et al., 2011; Salim et al., 2018). Ineffective complaints handling often leads to bettors' defection if the bookmaker does not take steps to provide an efficient solution to the particulars of the grievance. However, if bookmakers effectively handle bettors' complaints in, say, less than 5 minutes, those bettors go on to become loyal customers. It was established that areas of complaints in the sports betting industry are mainly to do with suspended accounts or funds, documents (FICA), unfair games, software/connection faults, bonus complaints/abuse, terms and conditions, gambling limits/losses and cancelled bets, among others (Gibraltar, 2019).

Findings from this research agree with the literature on ECH. It was this study's finding that ECH is the second greatest influencer of CL in the sports betting industry, as shown by the average mean of 4.38 and standard deviation of 0.744.

It is revealed through these findings as indicated on table 4 (regression Coefficient), that ECH accounts for up to 42.2% of the variance in CL.

According to this research, one can conclude that ECH is the second largest influencer of CL (after bookmaker trust) in the sports betting industry in Gauteng. This variable had the highest overall mean compared to the other four factors under study, meaning that most bettors consider ECH as their number one influencer when deciding to be loyal to a bookmaker.

9.1 Recommendations on effective complaints handling

Understanding customers' complaints requires a continuous assessment of negative feedback and criticism from them. It is believed that complainers are the heaviest users of a service/product (Crie and

Ladwein 2002). Therefore, it is recommended that bookmakers pay attention to ECH practices to make the complainants more trustworthy and loyal than before.

To understand bettors' complaints, bookmakers should continuously assess negative feedback and criticism from bettors and not just carry out sophisticated computerised analysis but should also contact dissatisfied bettors directly to ascertain their grouse against the bookmaker. In this era of WhatsApp groups, a bookmaker should monitor conversations amongst bettors in open groups created by the bookmaker. A bookmaker can lead certain conversations in those groups to get feedback from bettors on certain matters.

By setting up complaints/queries desk in every physical shop to cater for physical bettors, bookmakers can reap the benefits of ECH since complaints are related to satisfaction, and when correctly handled often lead to CL. Similar, desks can be set up in selected busy malls as a backup to the call centre support team to cater for online bettors who have limited access to the physical shops.

Bookmakers should ensure that their complaints handling procedure is well articulated and made accessible to bettors. They should encourage complaints from dissatisfied customers - research shows that complaint resolution enhances CL

Below is a suggested complaints model that bookmakers in Gauteng can adopt to ensure that they deal effectively with customer complaints to improve CL. The model suggests the setting up of complaints handling office at the bookmaker's head office to deal with complaints coming from disgruntled bettors. Bettors can bring in their complaints through the complaints handling agents stationed at physical shops and malls around Gauteng. Bettors can also be given an option to directly call, WhatsApp or email the Head Office Complains handling office for quick redress.

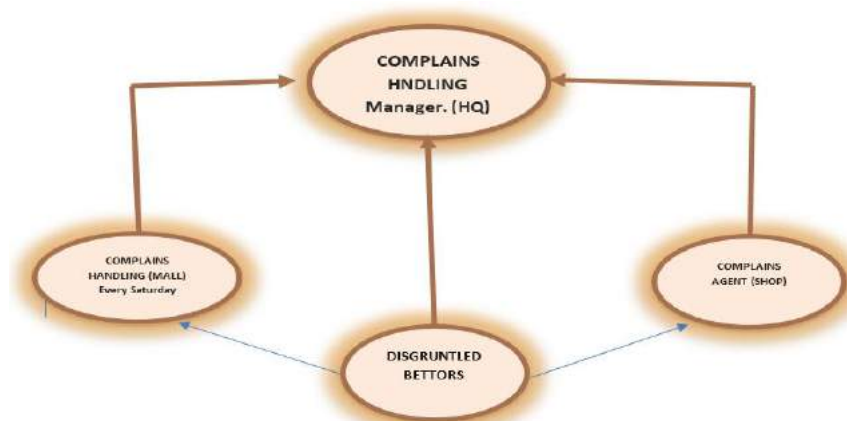


Figure 6.1: Bettors complains handling model. Source: researcher's own creation.

10. Effective Communication

EC is the most important part of customer service, and the real secret to EC lies in the ability to gauge bettor's expectations and then respond appropriately, especially in this age of digital communication, when bookmakers may not be able to meet customers face-to-face (Patel, 2020). Mbango and Mmatli (2019) defines EC as the customers' perception of the extent to which an organisation interacts with them in a warm and personal way.

Though quality service and better odds prove that bookmakers care for their customers, what matters to these customers is how bookmakers demonstrate it through ongoing attentiveness and creativity in the quality of communication (Doucette 2017).

The findings of this research show that even though EC has a statistical significance on CL, its practical influence on CL is small (**beta** value = 0.234 and **p** = 0.000).

The results of this research support the literature on the influence of EC on CL. However, the influence that EC has on CL is very small in the betting industry as compared to other industries. These current

findings show that EC accounts for only 23.4% of the variance in CL in the sports betting industry. Less than 40% of the bettors who participated in this research agreed with all statements on EC. For instance, only a total of 37.1% of the bettors agreed and strongly agreed that they would recommend to their friends and family a bookmaker that has EC channels.

Based on the findings, one can conclude that EC is not seriously considered by both bookmakers and bettors in the sports betting industry.

10.1 Recommendations on EC

A bookmaker must carefully integrate its many communication channels to deliver a clear, consistent, compelling and even personalised message to its bettors. All points of contact between the bettor and the bookmaker's content about its brand must be identified, and more effort should be directed towards delivering a positive, consistent message at each contact to tie together all the bookmaker's messages and images and align them with bettor preferences.

Instead of being their judge of the effectiveness of communication, bookmakers should rely on responses from bettors. Hence, bookmakers need to keep their ear on the ground to get responses on their communication.

Sports betting is inherently time-sensitive, and therefore EC about sporting events should be sent out in time to the right people with speed and accuracy. Putting up fixtures big matches a week before can go a long way as EC.

The use of live engagement tools for real-time support assistance with live assistance tools such as video chats, co-browsing, and live chats should be implemented by bookmakers to ensure EC.

To improve the effectiveness of their communication, bookmakers must aim to reduce waiting time and avoid scripted conversations when offering real-time support. Avoiding jargon when communicating with bettors is essential and ensures that there is no misunderstanding of the message being communicated.

Bookmakers are encouraged to collect bettors' feedback and monitor social conversations both online and offline to understand bettors preferred social channels and actively engage them on those channels. Through this strategy, social media may be used to announce new product releases, bookmaker news, content updates, and events. This will improve the effectiveness of communication, which will eventually lead to CL.

11. Customer satisfaction

CS in the sports betting industry is an emotional state of bettors, based on direct experience gained after comparing the performance of the bookmaker's services with their expectations. Mbango (2018) define CS as a feeling of pleasure, fulfilment, and desire towards a service rendered, and it is also viewed as the level of post-purchase dissonance.

A review of literature showed a significant relationship between CS and CL. Many authors have advocated that CS is one of the determinates of CL, especially in the service industry (Belás and Gabčová, 2016; Coelho and Henseler, 2012). Furthermore, it can be assumed that the relationship between CS and CL is nonlinear. Suggestions pointed out the importance to organisations to increase CS if they want to sustain the level of CL (Fida et al., 2020).

Findings from this study concur with the literature and previous findings on the relationship between CS and CL. Most bettors agree that they will be loyal to a bookmaker that they are satisfied with. This was shown by the overall mean of 3.97 (which was well above the 3.5 minimum value) and a standard deviation of 0.874.

Results from this current study indicate that CS has a medium influence on CL in the sports betting industry (**beta** = 0.323 and **p-value** = 0.000). This shows that CS causes 32.3% of the variance in CL. This is a practically significant change that bookmakers should not take for granted.

11.1 Recommendations on CS

If a bookmaker wants to attract new bettors, it is recommended that its primary focus should be on CS, as this will significantly affect bettor recommendations to friends. Bookmakers are advised to draw knowledge from banks and bear the data cost that bettors incur in betting, in addition to a quick and prompt pay-out facility. Some of the bookmakers in Gauteng now do have a data-free application that bettors can use when placing bets. However, most of these data sites have limited access to some of the betting options.

Bookmakers are also recommended to place their focus on customer experience, especially on newly acquired bettors. Helping the bettors get started can go a long way in satisfying them. Taking a newly signed-up bettor through their first bet can give the bettor much satisfaction that is required to build CL.

Practice credits can also be issued to new bettors so that they can learn how to bet on different games while getting used to the bookmaker's betting system. To improve bettors' experience, bookmakers should ensure that their website's layout is user-friendly to their customers. Complex sites are always avoided by bettors, especially given that majority of them have only matric as their highest academic qualification. It was discovered during this research that Hollywoodbets has the most preferred website layout on sports games, and it might be the reason why they are leading the online market with such a big gap

Bookmakers have to acknowledge that every bettor needs to experience victory at some point. A long losing run can make a bettor leave, especially if the bettor feels that the bookmaker only exists to take their money. With this in mind, the bookmaker should try and increase CS by helping the customers to win some of their bets by offering information such as sports betting tips, statistics, and predictive analysis.

However, so many bookmakers do an excellent job of customer acquisition, and then the customer is ignored while the bookmaker chases more new customers. Even after investing enormous amounts of time and cash to get new customers on board, few bookmakers take the time to evaluate why so many leave them. They are trapped in an eternal cycle of replacing the customers they are losing, hindering true growth brought about by satisfying existing customers. CS should be considered as one of the top priorities by bookmakers if CL in the sports betting industry is to be achieved.

11.2 Main factors influencing CL in the sports betting industry

The study discovered that the main influencing factors on CL in the sports betting industry in Gauteng are trust (mean = 4.22, std. dev. = 0.691, beta(β) value = 0.453 and p-value = 0.000) and ECH (mean = 4.38, std. dev. = 0.744, beta (β) value, 0.422 and p-value = 0.000) as compared to the rest of the factors.

Based on the results above, one can conclude that all the marketing factors in this study (LP, ECH, EC, trust and CS) have a significant effect on CL. According to the bettors who participated in this research, the major influential CL drivers in the sports betting industry are trust and ECH.

The findings of this study point to the importance of bookmaker trust and ECH in the sports betting industry. It is therefore recommended that bookmakers pay more attention on these factors if they are to improve CL. Detailed recommendations on these factors was done above under Conclusions and Recommendations section.

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Young People's Perceptions of the Road Safety Aspects in Developing Countries: A South African Perspective

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Keywords

Road safety, transport security, developing country, public transport, South Africa

Abstract

Background: South Africa's road crash fatality rate is amongst the highest in the world. Although almost 50 per cent of fatal crashes involve motor cars previous research amongst university students (Luke, 2016) showed that there is a strong perception that private cars are safer than public transport. This perception is fuelled not only by the possibility of being involved in a crash but also by safety from crime in both the vehicle and waiting areas, which is a key consideration in making modal choices in South Africa.

Purpose: To consider the modal shift from private to public transport, it is important to understand reasons for safety concerns amongst various modes, thus highlighting specific areas for intervention. This research seeks to investigate the various safety factors that are taken into consideration in modal choice, as well as the extent to which they manifest across various modes of transport. The purpose of this paper is to investigate young people's perceptions of safety aspects associated with public and private transport options.

Method: To obtain the empirical data for the research, a quantitative research design was employed. A self-administered online questionnaire was used to collect the research data. Research data were gathered from two non-probability sampling surveys conducted in the Johannesburg area in 2019 and 2020, providing responses from 702 and 630 young people respectively.

Results: The study found that, for the more common forms of public transport, safety levels were generally considered to be poor to very poor. Issues that were highlighted include the likelihood of being in an accident, staff training, and safety measures against crime, both inside the vehicles as well as in waiting areas.

Conclusion: The findings consider specific aspects that young people perceive as problematic in public transport service provision, as well as the improvements that could be made to, firstly, attract them to public transport and, secondly, curb intentions toward car ownership. This provides an indication to service providers of priority areas for safety interventions.

1. Background

According to the World Health Organisation (WHO) (2018), South Africa had an estimated fatality rate of 25.9 per 100 000 population in 2016, translating to a rate of approximately 14 507 people. Using 2015 figures, the total cost of road traffic crashes amounted to approximately R142.95 billion, equating to 3.4 per cent of gross domestic product (GDP) (Labuschagne, et al., 2016). Without specific intervention and, given the general annual increase in vehicle registrations of approximately 2 percent (eNatis, 2019; eNatis, 2018), it is likely that this rate continues unabated.

The South African White Paper on National Transport Policy vision for transport in the country is to "Provide safe, reliable, effective, efficient, and fully integrated transport operations and infrastructure

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which will best meet the needs of freight and passenger customers at improving levels of service and cost in a fashion which supports government strategies for economic and social development whilst being environmentally and economically sustainable" (Department of Transport, 1996, p. 3). The new Draft Revised White Paper on National Transport Policy (2017, p. 1) extends the vision of providing safe transport to "Furthermore, for the users of transport, the supply should be: ... safe and secure." This extension suggests that there is an acknowledgement in policy that transport in the country requires a focus on safety, but also that personal safety (security) also warrants attention. This is further illustrated by the recognition in this document that "The safety, security, and quality of service of some modes of transport are currently below acceptable levels. The Government is committed to a concentrated and integrated effort to bring them into line with international best practice. Particular attention will be paid to road and rail safety" (Department of Transport, 2017, p. 3).

Despite recognition of safety and security as policy objectives, safety remains critical. According to StatsSA (2018) transport accidents accounted for approximately 12.5 per cent of deaths from non-natural causes. The World Health Organisation (WHO) (2018) estimated South Africa's fatality rate as 25.9 per 100 000 population; an estimated 14 500 people. Based on 2015 figures, the total cost of road traffic crashes amounted to approximately R142.95 billion (approximately €9 billion, as at January 2020), equating to 3.4 per cent of gross domestic product (GDP) (Labuschagne, et al., 2016). Without specific intervention and, given the general annual increase in live vehicle registrations of approximately 2 per cent in the last year (eNatis, 2019; eNatis, 2018), it is likely that the crash rate will continue at similar levels. Although almost 50 per cent of fatal crashes involve motor cars (Road Traffic Management Corporation, 2018), and public transport modes such as minibus taxis and buses account for only 9 per cent and 1 per cent respectively, previous research (Luke, 2016) showed that there is a strong perception that private cars are safer than public transport. This perception is fuelled not only by the possibility of being involved in a crash, but also safety from crime in both the vehicle and waiting areas, which is a key consideration in making modal choices in South Africa.

The latter is not only recognised Draft Revised White Paper on National Transport Policy 2017, as outlined above, but also in provincial and national household travel surveys. In the National Household Travel Survey (StatsSA, 2013), 8.7 per cent of respondents indicated that safety from accidents was their biggest determinant of modal choice. A further 2.4 per cent cited security from crime as their main reason. Although slightly lower, the latest National Household Travel Survey (StatsSA, 2021), shows that 4.5 per cent of respondents indicate safety and security as the main influencing factor of modal choice. When asked about dissatisfaction regarding specific modes, Table 1 refers to the safety and security issues highlighted by the National Household Travel Surveys in 2013 and 2020, respectively.

Table 1: Dissatisfaction with safety and security, by mode

MODE	TAXI		BUS		TRAIN	
	2013	2020	2013	2020	2013	2020
Security on walk to / from mode	38.4	33.3	35.0	31.6	56.6	70.6
Security at rank or station	37.9	29.9	35.6	34.6	32.3	57.7
Security on mode	33.8	22.6	29.3	22.5	47.4	65.3
Safety from accidents	45.8	36.5	27.7	21.8	29.4	39.1

Source: compiled for the purposes of this study from the National Household Travel Survey (StatsSA, 2013; StatsSA, 2021)

Table 1 provides a clear indication that safety and security are major concerns for commuters. Security is an issue in all modes of transport, but of far greater concern to train users. Safety from accidents is of particular concern to minibus taxi users. A later household travel survey for Gauteng, the province where the country's economic hub, Johannesburg, is located, reflects very similar results (Gauteng Province Roads and Transport, 2014; StatsSA, 2021)). Table 2 depicts the safety and security concerns for commuters in Gauteng.

Table 2: Dissatisfaction with safety and security, by mode (within Gauteng, 2020)

MODE	TAXI	BUS	TRAIN
Security on walk to / from mode	37.0	29.1	70.2
Security at rank or station	33.7	33.7	60.5
Security on mode	26.8	18.1	67.6
Safety from accidents	48.9	17.6	39.0

Source: compiled for the purposes of this study from the National Household Travel Survey (StatsSA, 2021)

It is however noted that crime is reported generically for all bus services. In practice, there are very clear differences between various bus services. In Johannesburg, PUTCO historically caters for low-income commuters, who tend to be socio-economically disadvantaged, generally travelling from outlying areas into economic centres, whilst Metrobus caters for low- to middle-income commuters within the city. Rea Vaya is a bus rapid transit system that caters to commuters in both outlying areas as well as city commuters. It is thus expected that the generic term, bus, would not adequately describe the safety and security concerns of commuters on the various forms of bus services in the country.

There is however no newer comprehensive research on safety and security in public transport in South Africa, although crash statistics are reported on regularly. This reporting is the responsibility of the Road Traffic Management Corporation, of which the last comprehensive report is the State of Road Safety Report (Road Traffic Management Corporation, 2017). A recent analysis of the type of vehicle involved in fatal crashes compared to the proportion of the total vehicle population, indicated that heavy passenger motor vehicles (12 or more persons) are responsible for 9.6% of speed infringements, while only representing 2.5% of the vehicle population (Road Traffic Management Corporation, 2021). It is concerning that Toyota Quantum and HiAce vehicles, the most widely used minibus taxi vehicles, are involved in 15.1 per cent of fatal crashes, although they constitute only 7.9 per cent of the total vehicle population (Road Traffic Management Corporation, 2021).

Although crime is reported on more regularly (Crimestats, 2019), it is difficult to determine the levels of crime in public transport, as these are not reported on in specific public transport-related categories, and therefore it is difficult to ascertain attitudes towards crime in specific modes. A recent study by Venter (2020) revealed that security from crime is the most important consideration of respondents when evaluating the first and last mile attributes of public transport trips. According to Vanderschuren, et al. (2019), fear of crime is a barrier to the use of public transport worldwide. Furthermore, females also have a higher risk perception than males, specifically when it comes to the mode of transport, the time of day (e.g. off-peak hours), at facilities (e.g. platform/stop) and while using the mode (e.g. in the train). Safety and security issues on public transport are, however frequently reported on in the popular and trade media, which provides some insight into modal perspectives (Blom, 2018, Chambers, 2018, Safer Spaces, 2018, Lindeque, 2019, Osborne & Brown, 2019, Retief, 2019). Limited numbers of academic texts (Teffo, et al., 2019) and government reports (Western Cape Provincial Government, 2018) provide further insights, however, it is evident that little research exists into the state of safety and security in public transport and the difference between these aspects on various forms of public transport.

People between the ages of 16 and 34 represent approximately 35% of the South African population (StatsSA, 2019). According to this report, 61% of the Gauteng (the most populous province in South Africa) population are under 35 years of age, with young people comprising 38% of the country's total population. As active transport users and the largest single population grouping, as well as being the primary future users of transport, this group's perceptions of current safety and security concerns were considered to be particularly important for analysis.

2. Research method

The purpose of this research is to gauge young people's perception of safety aspects associated with public and private transport options and to investigate the apparent perception that private cars are

safer than public transport. The first source of data was secondary data collected for a previous study on the service quality of public transport in Johannesburg, South Africa (Luke & Heyns, 2019) which was used to assess the service gap that may exist between commuters' expectations of service quality, specifically safety concerns, and the actual service quality offered by selected public transport service providers. A five-point Likert-type scale, anchored by *strongly disagree* (1) and *strongly agree* (5), was used to obtain the respondents' level of agreement with the various expectations and perceptions statements. For the purposes of this analysis, only safety-related data was used. Furthermore, as the research focused on young people's perceptions, all users from the initial respondent group aged 30 years or older, were excluded, resulting in a final sample size of 702 respondents.

To expand on the initial data collection, a second survey was conducted to include commuter modes such as private cars and the Gautrain, a high-speed rail mode used mainly by higher-income commuters. In this research, a two-part, quantitative research approach was used to obtain an informed awareness of the travel behaviour and safety perceptions of young people. In the first part, the research instrument was developed following the literature review of available and pertinent literature. The structured, self-administered online questionnaire consisted of four separate segments. The first section requested demographical information of the respondents (such as gender, age group, student and employment status); the second section requested information regarding the respondents' preferred modal choices and daily travel behaviour; the third section assessed the respondents' service quality perceptions of the various transport services; and the last section of the questionnaire solicited the respondents' views and intentions regarding private transport.

To acquire the research data convenience sampling (also known as availability sampling) was used. Convenience sampling is a non-probability sampling method that relies on the geographical proximity, accessibility, availability, the relative simplicity of collection and the willingness of respondents to take part in the survey (Etikan, Musa & Sunu, 2016; Saunders, Lewis & Thornhill, 2019) to obtain a sample. For these surveys, researchers and research assistants' social networks were used as a starting point, with a snowballing technique used to achieve a sufficiently large sample size. A limitation of convenience sampling is that it has the tendency to be biased (Sedgwick, 2013; Saunders et al., 2019) and implies that any generalised interpretations of the research results should be treated with caution and care (Zikmund, Babin, Carr & Griffen, 2013; Sedgwick, 2014; Saunders et al., 2019). The data collection campaign for part 1 and part 2 resulted in 630 and 702 usable responses, respectively. The profiles of these respondents is shown in Table 3 and Table 4 below. The survey data were analysed using SPSS for Windows version 25.

Table 3: Respondent Profile (Part 1)

		Metrobus	PUTCO	Minibuses	Rea Vaya	Metroraail
Respondents		300	100	204	200	348
Gender	Male	41%	41%	49%	45%	54%
	Female	59%	59%	51%	55%	46%
Age	18 - 30 years	73%	59%	78%	52%	49%
	Above 30 years	27%	41%	22%	48%	41%
Occupation	Scholar/student	58%	13%	39%	32%	26%
	Full time employed	33%	82%	39%	35%	50%
	Part-time employed	5%	4%	11%	20%	11%
	Unemployed	1%	1%	5%	8%	11%
	Retired	2%		6%	6%	3%
Frequency of travel	1-2 times per day	43%	60%	22%	28%	26%
	3-4 times per week	40%	35%	30%	33%	26%
	1-2 times per week	6%	1%	14%	19%	17%
	1-2 times per month	3%	4%	10%	10%	8%
	Seldom	8%		24%	12%	23%

Table 4: Respondent profile (Part 2)

Characteristics	Respondents			
Gender	Male	46%	Female	54%
Age	18 - 24 years	66%	25 - 34 years	34%
Highest qualification	Matric	47%	Degree	13%
	Certificate	9%	Advanced diploma	10%
	Diploma	15%	Post-graduate degree	6%
Student status	Full time student	63%	Not currently studying	27%
	Part-time student	10%		
Employment status	Full time employed	23%	Not currently working	66%
	Part-time employed	11%		

3. Discussion of results

Using the SERVQUAL model, adapted to the RECSA dimensions to suit the South African environment, respondents were asked to rate 25 items relating to reliability, extent of service, comfort, safety and affordability. For the purposes of this analysis, only the safety aspects are considered. The overall perception of safety is shown in Table 5.

Table 5: Perceptions of safety

Kruskal-Wallis H Test			60.040		
Significance of variance			✓		
			$\rho < 0.001$		
Chi-Square (χ^2)	$\chi^2 (4, n=702) = 34.495$				
Median		MB =	3	RV =	3
		P =	3	MR =	3
		MBT =	3		
Mann-Whitney U Test	z-score	Significance		Mean Ranking	Effect size (r)
MB - P	-4.805	✓	$\rho < 0.001$	MB>P	0.181
MB - MBT	-5.506	✓	$\rho < 0.001$	MB>MBT	0.208
MB - RV	-3.924	✓	$\rho < 0.001$	MB>RV	0.148
MB - MR	-6.456	✓	$\rho < 0.001$	MB>MR	0.244
P - MBT					
P - RV	-2.098	✓	$\rho = 0.036$	RV>P	0.079
P - MR					
MBT - RV					
MBT - MR					
RV - MR	-2.093	✓	$\rho = 0.036$	RV>MR	0.079
<i>MB = Metrobus, P = PUTCO, MBT = Minibus Taxi, RV = Rea Vaya, MR = Metrorail</i>					

The results show that, perceptions of the safety dimension are higher for Metrobus than any other mode of transport. It is expected that Metrobus, which caters to middle-class urban commuters, would be perceived as safer than minibus taxis, which are widely regarded as unsafe. It is also expected that Metrobus would be regarded as safer than PUTCO and Metrorail, as the latter two modes are considered to be mass transit modes for lower-income or captive users over longer commuting distances (generally from townships outlying the city to the CBD). It was however unexpected that Metrobus would be perceived as offering a higher service quality for safety than Rea Vaya. Rea Vaya is a relatively new bus rapid transit system, where equipment is still new, and buses run in dedicated

lanes, implying that safety might be expected to be higher than other modes of transport. To identify specific reasons for these perceptions, Table 7 individually analyses the items which collectively form the perceptions of the safety dimension. With regards to expectations, as shown in Table 6, there are far fewer differences between the modes, indicating that users have a general expectation that the modes of transport should offer a reasonably high level of safety. This is reflected in the medians for the modes, which are either 4 or 5, indicating a high expectation for safety.

With regards to the item, there are adequate safety measures against crime on vehicles, the median for Metrorail is the lowest of all the modes, indicating that crime on this mode is the biggest safety issue, rather than driver training. Metrobus again outperforms the other modes, although the median of 3 suggests that respondents are neutral, rather than positive about crime on this mode. Minibus taxis are perceived as being higher ranked than Metrorail, indicating that, although the general perception of this item is relatively neutral, driver behaviour is a bigger concern than crime on this mode.

Table 6: Expectations of safety

Kruskal-Wallis H Test	44.313				
Significance of variance	✓ $\rho < 0.001$				
Chi-Square (χ^2)	$\chi^2 (4, n=673) = 24.020$				
Median		MB =	5	RV =	5
		P =	4	MR =	5
		MBT =	4		
Mann-Whitney U Test	z-score	Significance		Mean Ranking	Effect size (r)
MB - P					
MB - MBT	-4.49	✓	$\rho <$	MB>MBT	0.173
MB - RV	-2.718	✓	$\rho =$	MB>RV	0.105
MB - MR					
P - MBT					
P - RV	-2.915	✓	$\rho =$	RV>P	0.112
P - MR					
MBT - RV	-6.345	✓	$\rho <$		0.245
MBT - MR	-4.574	✓	$\rho <$	MR>MBT	0.176
RV - MR					
<i>MB = Metrobus, P = PUTCO, MBT = Minibus Taxi, RV = Rea Vaya, MR =</i>					

In relation to the probability of an accident, Metrobus has the best perceived safety level, although Rea Vaya is also considered to be relatively safer than most other modes of transport. The finding is that Metrorail, which has a poor safety record, is perceived as being less likely to have an accident than minibus taxis. The latter is generally perceived, as reported in the National Household Travel Surveys (NHTS) and in the popular media, as having a very poor accident record. It is also noted that there is no significant difference between the accident perceptions of minibus taxis and PUTCO, confirming the further perception that PUTCO is not a safe mode of transport.

With regards to driver training and safety measures, Metrobus is again perceived as being better than any of the other modes. The mean ranking for all modes are higher than the mean ranking for minibus taxis, indicating that the perceptions of skilled drivers in this group is very poor, as is also evidenced in the popular media and the NHTS. Although Metrorail is poorly perceived from a safety perspective in general, drivers are perceived to be relatively better trained than the drivers from most other modes, with the exception of Metrobus, indicating that driver training is not the biggest safety concern for this mode. In a related item, there is a low possibility of personal injury due to reckless driving, the results are similar to the driver training, with Metrobus outperforming the other modes and minibus taxis having the lowest overall mean ranking. There are not significant differences between the rest of the modes.

With regards to the item, there are adequate safety measures against crime on vehicles, the median for Metrorail is the lowest of all the modes, indicating that crime on this mode is the biggest safety issue, rather than driver training. Metrobus again outperforms the other modes, although the median of 3

suggests that respondents are neutral, rather than positive about crime on this mode. Minibus taxis are perceived as being higher ranked than Metrorail, indicating that, although the general perception of this item is relatively neutral, driver behaviour is a bigger concern than crime on this mode.

The NHTS (2013) identified safety and security in the waiting areas as a major cause of concern. This could include theft, harassment, attacks, etc. This continues to be a major issue, as indicated in the latest NHTS (2020). This was measured in the final item “there are adequate safety measures against crime in waiting areas”. This is the only item where Metrobus does not outrank all other modes, suggesting that this is the biggest issue facing this mode of transport. It is likely that this can be attributed to the many on-street bus stops, which may not necessarily be under the control of Metrobus, but rather city authorities. It does however suggest that Metrobus could provide facilities to enhance this aspect of safety in their services. Metrorail and PUTCO also perform poorly on this element. PUTCO’s perceived performance, as with Metrobus, is likely attributable to on-street bus stops. Metrorail, on the other hand, is fully responsible for train stations, which are perceived as being particularly unsafe. Rea Vaya, which waiting areas are only accessible by ticket, is ranked lower than minibus taxis, suggesting an area which requires improvement.

Whilst the initial dataset provided valuable insights into the main public transport modes used for commuting, two key modes were omitted. As the survey was focused on the service quality of public transport, perceptions of the highest commuting mode, namely private vehicle transport, were omitted. A further public transport mode, the Gautrain, a high-speed rail option, was also excluded, as it caters to only a small portion of higher-income commuters. To be able to compare these modes to the modes covered by the first survey, a second survey included a general perspective on all modes of transport. In this case, respondents were not mode-specific users, but were rather asked to provide their perceptions of the safety of all transport modes. This allowed for individual level comparison of the modes. The results are shown in Table 7.

Table 7: Perception of service quality items

	There is a low probability of accidents					Drivers are well trained and safety measures are used				
Kruskal-Wallis H Test	80.086					80.121				
Significance of variance	✓ ρ< 0.001					✓ ρ< 0.001				
Chi-Square (χ²)	χ ² (4,n=696) = 58.490					χ ² (4,n=699) = 67.340				
Median	MB = 4		RV = 3		MB = 4		RV = 3			
	P = 3		MR = 3		P = 3		MR = 3			
	MBT = 3				MBT = 2					
Mann-Whitney U Test	z-score	Significance		Mean Ranking	Effect size (r)	z-score	Significance		Mean Ranking	Effect size (r)
MB - P	-5.334	✓	ρ< 0.001	MB>P	0.202	-3.754	✓	ρ< 0.001	MB>P	0.142
MB - MBT	-8.13	✓	ρ< 0.001	MB>MBT	0.308	-7.838	✓	ρ< 0.001	MB>MBT	0.296
MB - RV	-4.158	✓	ρ< 0.001	MB>RV	0.158	-4.59	✓	ρ< 0.001	MB>RV	0.174
MB - MR	-5.104	✓	ρ< 0.001	MB>MR	0.193	-3.274	✓	ρ< 0.001	MB>MR	0.124
P - MBT						-1.968	✓	ρ= 0.049	P>MBT	0.074
P - RV	-2.44	✓	ρ= 0.015	RV>P	0.092					
P - MR						-2.175	✓	ρ=	MR>P	0.08

								0.030		2
MBT - RV	-3.841	✓	$\rho < 0.001$	RV>M BT	0.146	-4.359	✓	$\rho < 0.001$	RV>MB T	0.16 5
MBT - MR	-3.103	✓	$\rho = 0.002$	MR>M BT	0.118	-6.058	✓	$\rho < 0.001$	MR>M BT	0.22 9
RV - MR						-2.00	✓	$\rho = 0.046$	MR>RV	0.07 6
There is a low possibility of personal injury due to reckless driving					There are adequate safety measures against crime on vehicles					
Kruskal-Wallis H Test	59.529					94.985				
Significance of variance	✓ $\rho < 0.001$					✓ $\rho < 0.001$				
Chi-Square (χ^2)	$\chi^2 (4,n=699) = 44.417$					$\chi^2 (4,n=698) = 54.179$				
Median	MB = 4		RV = 3			MB = 3		RV = 3		
	P = 3		MR = 3			P = 3		MR = 2		
	MBT = 2					MBT = 3				
Mann-Whitney U Test	z-score	Significance	Mean Ranking	Effect size (r)	z-score	Significance	Mean Ranking	Effect size (r)		
MB - P	-4.32	✓	$\rho < 0.001$	MB>P	0.163	-2.533	✓	$\rho = 0.011$	MB>P	0.09 6
MB - MBT	-7.022	✓	$\rho < 0.001$	MB>M BT	0.266	-2.344	✓	$\rho = 0.019$	MB>M BT	0.08 9
MB - RV	-3.813	✓	$\rho = 0.003$	MB>R V	0.144	-3.424	✓	$\rho = 0.001$	MB>RV	0.13
MB - MR	-3.746	✓	$\rho < 0.001$	MB>M R	0.142	-9.301	✓	$\rho < 0.001$	MB>M R	0.35 2
P - MBT										
P - RV										
P - MR						-4.343	✓	$\rho < 0.001$	P>MR	0.16 4
MBT - RV	-3.003	✓	$\rho = 0.003$	RV>M BT	0.114					
MBT - MR	-3.842	✓	$\rho < 0.001$	MR>M BT	0.145	-6.492	✓	$\rho < 0.001$	MBT> MR	0.24 6
RV - MR						-4.795	✓	$\rho < 0.001$	RV>MR	0.18 1

There are adequate safety measures against crime at waiting areas										
Kruskal-Wallis H Test	44.17									
Significance of variance	✓ $\rho < 0.001$									
Chi-Square (χ^2)	$\chi^2 (4,n=699) = 30.816$									
Median	MB = 2		RV = 2							
	P = 2		MR = 2							
	MBT = 3									
Mann-Whitney U Test	z-score	Significance	Mean Ranking	Effect size (r)						
MB - P										

MB - MBT	-3.929	✓	$\rho < 0.001$	MBT > MB	0.149				
MB - RV									
MB - MR	-2.629	✓	$\rho = 0.009$	MB > MR	0.1				
P - MBT	-4.452	✓	$\rho < 0.001$	MBT > P	0.169				
P - RV	-2.514		$\rho = 0.012$	RV > P	0.095				
P - MR									
MBT - RV	-3.208	✓	$\rho = 0.001$	MBT > RV	0.121				
MBT - MR	-6.038	✓	$\rho < 0.001$	MBT > MR	0.229				
RV - MR	-3.024	✓	$\rho = 0.002$	RV > MR	0.114				

The results show that respondents perceive the Gautrain, a new transport mode, as being safe, which is likely due to using new equipment, extensive safety measures on trains and in stations, and high levels of driver training. Of concern is the finding that cars are generally higher ranked for safety than most other forms of public transport. This was reiterated by another question in the survey instrument where, on a 5-point Likert-type scale, respondents' average mean for the question "Using a private car is safer than using public transport" was positive at 3.65, thus providing some indication of the relative perceived lack of safety in public transport. A further concern is that this perception will drive already high car ownership aspirations. The results further reflect that Metrorail, PUTCO and minibus taxi are all rated below the midpoint of 3, thus indicating disagreement with the perception that these modes are safe. Metrobus and Rea Vaya are positively rated, although the proximity to the midpoint suggests that these modes are not as safe as they could be.

4. Managerial implications

Most forms of public transport are not perceived as being safe, suggesting managerial implications for both service providers and city planners. Cars are perceived as being safer than all public transport modes, with the exception of the Gautrain. This implies that commuters will select cars if they can afford them. From a city planning perspective, this is likely to lead to high levels of congestion, which are unsustainable. This suggests that city planners need to focus future transport management efforts on making public transport safer and more "car competitive" in order to achieve a modal shift from cars to public transport. For minibus taxis, the most utilised form of public transport, although crime on the vehicle and in waiting areas are not well rated, the greater concern is reckless driving and the possibility of accidents, suggesting that this industry needs to focus significant resources on driver training initiatives. In addition, taxi associations should ensure that the service is extended beyond the trip into the waiting (especially rank) environment, to ensure the safety of commuters whilst awaiting services. For Metrorail, respondents are less concerned about driver training and accidents, however, crime is an area of major concern. As Metrorail is responsible for its infrastructure, this suggests that the railway service provider urgently needs to provide better security measures on the trains and in stations. Metrobus is generally perceived as being safer on most safety items, however crime in waiting areas was the respondents' major concern. Although this is mostly out of the service provider's control, the results suggest that Metrobus should consider mechanisms to ensure the safety of its commuters while waiting and should also lobby the city to consider better on-street security measures for the general commuting public. The general perceived safety performance of Rea Vaya, the new bus rapid transport system, is lower than expected. It appears that respondents have a concern about driver performance as well as crime in waiting areas. As station access is limited, this suggests that training and security measures need to be enhanced before users place complete trust in the mode. PUTCO is generally rated as poor on most safety aspects. As this mode generally caters to low-cost captive users, the poor performance suggests a lack of concern for the safety of their commuters. As

this is a subsidised service, the results further reflect that the government is not providing sufficient resources for this mode of transport and should be lobbied to focus resources on the captive transport user.

5. Conclusion

Whilst the above management implications propose areas where the various modes need to focus future spending to improve safety levels, the results also suggest that, should these not be addressed, commuters are likely to switch modes, particularly to private vehicle ownership, to improve safety performance. Future research should investigate the thresholds at which mode switching takes place, to determine the safety levels required to retain passengers. The research should also be expanded to other metropolitan areas in the country, to determine whether these perceptions are experienced country-wide, or whether public transport performs better from a safety perspective in different cities. Differences in results would likely reflect cities where more subsidies are provided for public transport, or there are higher levels of safety in public spaces. It would also be worthwhile repeating this study to determine whether perceptions have shifted during the COVID-19 pandemic, and thereafter.

Safety concerns are key considerations when young people make the decision to shift from public to private transport. To slow this concerning trend, it is necessary to provide public transport that meets the safety needs of young commuters. This research has highlighted key areas where each public transport service needs to focus resources and efforts in a bid to maintain or improve current ridership figures.

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The Relevance of Entrepreneurial Self-Efficacy, Social Networking and The Institutional Environment on Immigrant Entrepreneurship in South Africa

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Keywords

Entrepreneurial self-efficacy; Social networks; Negative regulatory environment; Immigrant entrepreneurship; Entrepreneurial performance

Abstract

South Africa has high rates of criminal activity and widespread corruption, which debilitates many entrepreneurs' entrepreneurial activity, performance, and operations. However, many immigrants can overcome these challenges despite these obstacles using their entrepreneurial self-efficacy and social networking capabilities. Entrepreneurial self-efficacy has been found to influence entrepreneurial intention, behaviour, motivation, and performance; furthermore, entrepreneurial self-efficacy is the targeted outcome of entrepreneurial education and training. Research shows that social capital networks enabled the acquisition of capital resources and opportunities, which supports research that indicates that entrepreneurs with networks have a resource acquisition advantage. This study will attempt to determine if an ethnic immigrant minority is able to operationalise their entrepreneurial self-efficacy and social networks to improve the performance of their ventures, despite all the regulatory challenges they face in South Africa. This study will employ a quantitative research method, as it measures the relationship between quantifiable variables. The population of this study is Pakistani immigrant entrepreneurs. Further research showed that immigrant entrepreneurs have capabilities, knowledge, and other experiences, which are useful, based on the resource-based theory, for conducting business internationally. This will be measured in terms of entrepreneurial performance with a specific focus on growth and innovation in this study.

1. Introduction

Despite its history of Apartheid, a new form of racism has emerged in the new and free post-apartheid South Africa, in the form of xenophobic violence (Pillay, 2017). This form of anti-immigrant sentiment has been studied worldwide and scholars have studied immigrant entrepreneurial activity increasingly (Brettell & Nibbs, 2010), due to globalisation.

This negative sentiment towards immigrants is due to locals blaming immigrants for social segregation and high crime rates (Zang, 2000); hence, immigrants are seen as a threat to society, which might explain the violence that immigrants experience (Costello & Hodson, 2011). These findings relate to immigrants in western countries; however, this could correlate with this study which explores a particular ethnic minority, the Pakistani immigrant entrepreneurs. The risks attached to immigrant entrepreneurship could dissuade them from engaging in entrepreneurial activity and understanding how Pakistani immigrant entrepreneurs overcome such challenges is the primary concern of this study.

To conduct such a study, the unique environment of the immigrant entrepreneurs needs to be considered, as it could play a moderating role in entrepreneurial activity. Especially in developing countries such as South Africa, entrepreneurial activity is encouraged, and even more, the focus is placed on determining the characteristics of successful entrepreneurs and their origins (Venter &

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Urban, 2015). Hence, the environment of South Africa is expected to have a entrepreneurship-promoting climate for immigrant entrepreneurs; but entrepreneurial activity can be promoted or suppressed by the influence of institutions on the economy, and to examine and understand this, the institutional theory needs to be explored (Stenholm, Acs, & Wuebker, 2013; Urban, 2019). Therefore, the context within which Pakistani immigrants operate must be understood, along with the surrounding institutional environment, as these factors could influence their behaviour. Various previous researchers have supported the importance of the institutional theory and are of the view that for economic and entrepreneurial development, there needs to be an existing institutional environment (Baumol & Strom, 2007; Bosma, Content, Sanders, & Stam, 2018; Valliere & Peterson, 2009). The institutional environment in which Pakistani immigrants operate will play a significant role in their behaviour and operations. Hence, the quality and quantity of entrepreneurial activity in a country are dependent on the type of institutional environment in that country (Valliere & Peterson, 2009). The institutional environment might also influence various entrepreneurial activities' behaviour and beliefs (Busenitz, Gomes, & Spencer, 2000).

The entrepreneurial performance will be used to measure the said influences of the institutional environment on Pakistani immigrant entrepreneurs in South Africa. Entrepreneurial performance can be seen in economies where the formal institutions have established themselves and protect the interests of private organisations from government influence and expropriation (Shahid, Imran, & Shehryar, 2018; Urban, 2019). Thus, this type of performance needs to be measured amongst Pakistani immigrant entrepreneurs about the impact the institutional environment has on them to determine if the influence is significant or not.

Immigrant entrepreneurs may be able to overcome the various challenges of the institutional environment, and this may be due to their entrepreneurial self-efficacy and social networks. Entrepreneurial self-efficacy in immigrant entrepreneurship forms part of entrepreneurial competencies (Chrystome, 2010; Morgan, Sui & Baum, 2015), and is broadly defined to include personal characteristics, such as motives, skills, knowledge, and self-efficacy (Bird, 1995), which influence venture management and creation (Dabic et al., 2020). Self-efficacy, or more specifically entrepreneurial self-efficacy, for this study, translates to a person's belief in their ability to perform entrepreneurial or managerial tasks (Newman, Obschonka, Schwarz, Cohen, & Nielsen, 2019). This ability to perform entrepreneurial or managerial tasks is possibly used to overcome institutional environmental challenges.

Social capital, conversely, comprises the relations and contacts that people or individuals have with a range of communities and stakeholders, internally and externally, including the networking performed and the networks created (Hsiao Lee & Chen, 2016). Individuals have utilised social capital to overcome challenges and deal with shortcomings faced and is crucial to an individual's locus of control (Hsiao et al., 2016). Gedajlovic, Honig, Moore, Payne, and Wright (2013) explained that entrepreneurship and entrepreneurs are situated socially, and Corbett (2007) further elaborated that the social environment wherein organisations and individuals interact is where opportunities are explored and exploited. For a host country to develop a stable environment for immigrants, ethnic networks, and safety networks are of the utmost importance for new and existing immigrants who use these networks to grow their businesses.

This study will use entrepreneurial self-efficacy and social capital factors to determine how an ethnic minority of Pakistani immigrant entrepreneurs in South Africa overcome challenges presented by the institutional environment. The focus will be on the negatives of the institutional environment in a developing economy, such as South Africa, and how a minority can overcome them, so that their local counterparts could develop similar skills and networks to overcome challenges.

2. Problem Investigated

South African entrepreneurs are failing, which could have catastrophic consequences for the country and its people in the short term and in the long term. The GEM (Bowmaker-Falconer & Herrington, 2020) reported concerning figures where 4.9 per cent of businesses closed and only 3.7 per cent of

businesses were started, making the discontinuance of business exceed new ownership in 2019. This is despite more South Africans accepting entrepreneurship as a viable career path (Bowmaker-Falconer & Herrington, 2020), while simultaneously having an increased fear of failure. These issues are a major problem for South Africa and affect the foundation of this study. In developing countries such as South Africa, the characteristics of successful entrepreneurs and their origins are important and their origins need to be determined (Venter & Urban, 2015). Due to these limitations and the need for more entrepreneurial knowledge and data, this study seeks to research to add to the body of knowledge for countries, such as South Africa, to overcome the potentially devastating consequences of lack of entrepreneurship, such as high rates of unemployment, increased burden on the government, increased crime rates, stagnant economic growth, and limited innovations.

This study seeks to achieve the above by determining if the institutional environment might be one of the causes of entrepreneurial activity being hampered in South Africa. According to Stenholm, Acs and Wuebker (2013), and Urban (2019), entrepreneurial activity can be promoted or hindered by the impact that institutions in various economies have and to examine and understand this, the institutional theory needs to be used. Various previous researchers have supported the institutional theory's importance and believe that for economic and entrepreneurial development, there needs to be an existing institutional environment (Baumol & Strom, 2017; Bosma et al., 2018; Valliere & Peterson, 2009). This makes research on the South African institutional environment significantly important, and a field of study that could contribute to understanding how a failing state might be the cause of entrepreneurial inhibition.

Immigrant entrepreneurship will be explored to determine the solution to this problem. Immigrant entrepreneurship is important for a South African study, as after Apartheid, South Africa opened up to the world and there was an influx of immigrants, along with which came a host of issues (Gebe, Maharaj & Pillay, 2011; Vargas (2005). Immigrant entrepreneurs' success is hindered in South Africa due to an unsupportive labour market, inaccessible capital, lack of institutional support, and discrimination (Basu & Altinay, 2002). Furthermore, barriers such as language, crime, excessive tax, excessive regulation, excessive compliance costs, and lack of skills also negatively affect the performance of immigrant entrepreneurs in South Africa (Dana & Morris, 2007; Vargas, 2005). These significant challenges for immigrant entrepreneurs are added to the institutional challenges mentioned above, resulting in the immigrants being worse off than their South African counterparts, and yet they seem to be able to survive (Moti, 2019). This makes the study of immigrants in South Africa an important element in determining what allows them to survive when their counterparts in similar conditions are unable to do the same. These findings could help struggling entrepreneurs to survive in the South African economy.

It should be noted that not all elements that contribute to the immigrants' success levels can be included in this research; as such, the focus is placed on two variables that many authors have noted to contribute to success. Krueger, Reilly, and Carsrud (2000) claimed that one of the differences in immigrant entrepreneurs is self-efficacy which leads them to their industry of choice. A meta-analytical study done by Miao, Qian, and Ma (2017) found a relatively strong relationship between performance and the business founder's entrepreneurial self-efficacy. Similarly, McGee and Peterson (2017) found a positive link between the entrepreneurial self-efficacy of business founders and entrepreneurial performance.

Entrepreneurial self-efficacy is the first variable. Its importance for immigrants needs to be understood, as it is possible that due to Apartheid, this quality might be missing in the South African population. Should it prove to be a crucial element in the survival of immigrant entrepreneurs, then it needs to be developed by South Africans, to increase entrepreneurial activity within South Africa.

The second variable in this study is social capital. To develop a stable position in a host country, ethnic networks and safety networks are of the utmost importance for new immigrants and existing immigrants who use them to grow their businesses. The networks are used for various reasons, including contacts, knowledge of procedures and markets, access to potential employees and

customers, and financial resources (Barnard & Pendock, 2013; Kalnins & Chung, 2006). Thus, social networking is a crucial element of immigrant entrepreneurship research and a variable for this study alongside entrepreneurial self-efficacy. The study of these two variables and the proof of their success will change how South African entrepreneurs operate and could become tools for their success, which benefits all stakeholders involved.

There is an approach in research which avoids western economics in favour of other geographical locations (Bruton, Ahlstrom & Obloj, 2008), as western economies cannot be compared to other economies and can create a bias. There is a growing body of knowledge about the hostile nature of developing economies toward businesses, yet its influence about entrepreneurial performance has not been sufficiently studied (Brixiova, Ncube & Bicab, 2014). Developed economies have the necessary resources and facilities to allow research to be conducted on their economies and as such, there is a significant body of knowledge on these economies. The other economies, such as in Africa, are neglected, and scholars try to measure Africa against the developed western economies, without fully understanding the uniqueness of African economies. Furthermore, Welter and Smallbone (2011) said that very limited knowledge is available on how entrepreneurial opportunity recognition and evaluation occurs in the unique African markets in terms of the institutional environment. This is one of the biggest problems in the field of entrepreneurship, which necessitates research in South Africa. By conducting this study, contributions relevant to Africa could be made, allowing for the body of knowledge to grow and prompt more research in South Africa.

3. Research Objectives

Institutional issues are abundant in South Africa, which is not conducive to growth, with immense problems in the regulatory sphere. Human and social capital can enable individuals to overcome these challenges and continue to perform. This study will determine if the said human and social capital in a challenging institutional environment and a problematic regulatory environment can allow individuals to work around these challenges. This will be measured in terms of entrepreneurial performance. The population under observation makes this study unique, which will be immigrant entrepreneurs in the challenging environment of South Africa; and their specific human and social capital that can help them overcome challenges.

To determine the extent to which entrepreneurial self-efficacy and social networking influence the performance of Pakistani immigrant entrepreneurs in South Africa while accounting for the regulatory environment as a moderator in this relationship.

- To examine the influence of entrepreneurial self-efficacy on the performance of Pakistani immigrant entrepreneurs in South Africa.
- To examine the influence of social networking on the performance of Pakistani immigrant entrepreneurs in South Africa.
- To examine the moderating influence of the regulatory environment in the relationship between entrepreneurial self-efficacy, social networking, and the performance of Pakistani immigrant entrepreneurs in South Africa.

4. Hypotheses

Hypothesis 1

From this literature, the following hypotheses were constructed and tested in this study:

Hypothesis 1: Higher levels of entrepreneurial self-efficacy positively influence the performance of family businesses of Pakistani immigrants.

- Hypothesis 1a: Higher self-efficacy in successfully identifying new business opportunities positively influences the performance of family businesses of Pakistani immigrants.
- Hypothesis 1b: Higher self-efficacy in creating new products positively influences the performance of family businesses of Pakistani immigrants.

- Hypothesis 1c: Higher self-efficacy in thinking creatively positively influences the performance of family businesses of Pakistani immigrants.
- Hypothesis 1d: Higher self-efficacy in commercialising an idea or new development positively influences the performance of family businesses of Pakistani immigrants.

Hypothesis 2: Higher levels of social networking positively influence the performance of Pakistani immigrant businesses.

- Hypothesis 2a: Higher levels of political networking positively influence the performance of Pakistani immigrant businesses.
- Hypothesis 2b: Higher levels of financial networking positively influence the performance of Pakistani immigrant businesses.
- Hypothesis 2c: Higher levels of family networking positively influence the performance of Pakistani immigrant businesses.

Hypotheses 3: The relationship between entrepreneurial self-efficacy, social networking, and the performance of businesses of Pakistani immigrant entrepreneurs in South Africa, will be moderated by the regulatory environment.

5. Literature Review

5.1 Immigrant entrepreneurship

The study of immigrant entrepreneurship began in the most popular migration destinations, such as Canada (Dana, 2013), the United Kingdom (Patterson, 1963), and the United States of America (Cochran, 1972). The topic of immigrant entrepreneurship is of interest in various fields, such as economics, sociology, entrepreneurship, anthropology, management, public policy, and psychology (Dana, 2007). Immigrants are those who are born abroad, and immigrant entrepreneurship is the entrepreneurial activities of immigrants (Dabić et al., 2020). Immigrant entrepreneurship is due to globalisation, which has led to an increased migration of people (Nazareno, Zhou, & You, 2019).

Researchers have suggested that immigrant entrepreneurs would be faced with challenges such as a lack of embeddedness in society, language barriers, lack of resources, and a lack of experience that would hinder their efforts to start a business (Constant, Kahanec, & Zimmermann, 2009; Millar & Choi, 2008). Contrarily, other researchers found that immigrant entrepreneurs have a higher entrepreneurial propensity than their local counterparts (Levie, 2007), showing that immigrant entrepreneurs overcome barriers using their self-efficacy and networking.

The research into the field of immigrant entrepreneurship has come with challenges such as limited synchronisation in the studies conducted and the integrated models used, which has resulted in a fragmented understanding of what induces and enhances the immigrant entrepreneurship (Sundararajan & Sundararajan, 2015). This fragmentation of knowledge is caused by studies focusing on a specific immigrant entrepreneurial group (Barrett & Vershinina, 2017); making these studies not generalisable (Dana, 2007). Furthermore, previous researchers failed to cover the distinctiveness of the immigrant entrepreneurship (Bailetti, 2018) and studies that attempted to provide an overview in a structured manner have failed to cover the entrepreneurial path of the immigrant entrepreneurs (Brzozowski, 2017).

According to research done by Morgan, Sui, and Baum (2018), immigrant entrepreneurs cannot accurately perceive risk when internationalising, due to their overconfidence. Furthermore, immigrant entrepreneurs are not more successful than local entrepreneurs, as the risk taken for the returns gained is not beneficial (Sui et al., 2015; Wang & Liu, 2015).

Neville, Orser, Riding and Jung (2014) are of the understanding that the experience, capabilities and knowledge that immigrant entrepreneurs possess provide an advantage when operating internationally. It has also been found that immigrant entrepreneurs have a better entrepreneurial orientation than do local entrepreneurs (Li, Isidor, Dau & Kabst, 2018), better international ties and language skills

(Cerdin, Diné & Brewster, 2014), and as such, can exploit opportunities better than their local counterparts (Morgan et al., 2018). This proves the theory that follows the antecedents of entrepreneurial self-efficacy where prior work experience, education, and training of the immigrant entrepreneurs, allows them to overcome challenges.

The negatives of immigrant entrepreneurs are seen by the anti-immigrant sentiment (Brettell & Nibbs, 2010) that local people have towards them and who often blame them for the social segregation and higher crime rates (Zang, 2000); they are seen as a threat to society (Costello & Hodson, 2011). These findings by the above-mentioned authors give the grim outlook and possible discrimination that immigrants face and the risks attached to immigrant entrepreneurship which would dissuade an immigrant to not engage in entrepreneurial activity, yet many still do, despite the risks.

Clark and Drinkwater (2010) provide an alternative view; their research found that immigrants from some groups, compared to their local counterparts, are more likely to pursue an entrepreneurial activity, creating more wealth and jobs. Despite barriers faced by immigrants such as finance, resources, and language, some immigrants are still able to engage in new venture creation (Aviram, 2009). This shows the more positive outlook that immigrants could bring to society and the economy and the higher entrepreneurial propensity that some immigrants possess. Furthermore, it proves that the immigrant population's entrepreneurial self-efficacy and social networks may be higher than that of their local counterparts.

5.2 Entrepreneurial self-efficacy

There are three types of self-efficacy to consider. The first is described by Bandura and Wood (1989) as the belief that a person has the capabilities to meet demands by driving their cognitive resources, motivation, and course of action. The second is the belief someone has in their competence to perform tasks that lead to various achievements (Chen, Gully, & Eden, 2001). Lastly, the self-efficacy that is the focus of this study is entrepreneurial self-efficacy, which is the belief in one's abilities to perform entrepreneurial tasks (Chen, Greene, & Crick, 1998).

The relevant theory about entrepreneurial self-efficacy is the social cognitive theory. Bandura (2001) explained that an intention is a proactive commitment to bringing about action and that the entrepreneurial process comes into existence due to the individual's entrepreneurial action and motivation. The social cognitive theory enhances human agency at a collective and individual level by enabling behaviour (Bandura, 1997; Newman et al., 2019). It is based on the reciprocal model of cognitive and other personal factors, environmental influences, and behaviour working in conjunction with each other (Bandura, 1986). Vicarious learning, mastery by experience, and gaining further knowledge and judgment from others, lead to a better understanding of the self and the environment (Bandura, 1977; Newman et al., 2019).

Bandura (1997,1986) proposed a social learning perspective framework, which considers four primary factors of developing self-efficacy. They are a) vicarious experience, b) verbal persuasion, c) physiological arousal and d) enactive mastery (Gielnik, Uy, Funken, & Bischoff, 2017). Vicarious experience is about observing the performance of others and it was suggested by Bandura (1977) that watching others succeed can boost one's self-efficacy. However, Bandura (1986) including Bux and van Vurren (2019) noted that vicarious learning in comparison to direct experience is weaker, and the impact thereof can have a lasting effect on one's self-efficacy.

Bandura (1986) explains that enactive mastery which is one's historical performance is one of the biggest influencers of self-efficacy, further, those who have developed the ability to overcome challenges and stay motivated are more likely to have a self-efficacy that is irrepressible (Woods & Bandura, 1989). In his study, Krueger (1993) found that having experience led to an increased desire and feasibility for an entrepreneurial career (Newman et al., 2019).

Bandura's (1997, 1986) third major factor of self-efficacy is physiological arousal, which is that one should consider their physiological state, as having a negative state will lead to a lowered self-efficacy

and vice versa. The last factor is verbal persuasion; though it is not a powerful influencer, it does play a role in creating self-efficacy within a person when feedback is received from others about one's ability to complete a task (Bandura, 1986; Miao et al., 2017).

To understand entrepreneurial action and related beliefs, Bandura's (1986, 1997) agency perspective, from a self-efficacy point of view, is considered the best approach (Frese, 2009). Entrepreneurship requires passion and persistence, as such entrepreneurial self-efficacy is a crucial psychological construct in entrepreneurship research (Miao et al., 2017). Entrepreneurial self-efficacy has been found to influence entrepreneurial intention, behaviour, motivation, and performance; furthermore, entrepreneurial self-efficacy is the targeted outcome of entrepreneurial education and training (Newman et al., 2019). Entrepreneurial self-efficacy has become important for researchers and policymakers (Wilson et al., 2009) due to the increased interest in entrepreneurial acting and thinking for occupational behaviour and career development (Obschonka et al., 2017).

5.3 Social networking

The suppliers, customers, and stakeholders with which a business creates long-term relationships are referred to as business networks (Vecchio, 2003); making networks the basis of social capital; so, crucial to entrepreneurs (Low & MacMillan, 1998). Dabic et al. (2020) deliberate that when considering the success of ethnic minorities, the social network factors need to be assessed specifically to the group in question and should not be generalised. Due to the failings of transitional country governments, entrepreneurs can form weak networks to grow, harmonise activities, and combine resources (Luthans, Stajkovic, & Stajkovic, 2000). Networking allows entrepreneurs to deal with obstacles, acquire critical resources, and increase opportunity capital (Low & MacMillan, 1998; Chan, Yi-Hsuan & Chen, 2016). Davidsson and Honig (2003) maintained that social capital networks enabled the acquisition of capital resources and opportunities, which supports research that indicates that entrepreneurs with networks have a resource acquisition advantage (Aldrich & Zimmer, 1986; Al-Omouh, Simón-Moya, & Sendra-García, 2020). Africa has very limited research done on social capital and the studies done do not cover all the actors of social capital (Urban & Ratsimanetrimanana, 2019; Zoogah, Peng, & Woldu, 2015). This is essentially the reason why social capital is a focus in this research, however there is a challenge with social capital. The studies that were conducted on social capital have presented mixed results in terms of entrepreneurial performance (Alhusban, Alhusban, & AlBetawi, 2019; Doh & Acs, 2010; Urban, 2019), which is what this study will also be testing.

5.4 The regulatory dimension

The performance of entrepreneurs in the emerging markets is usually faced with a multitude of challenges from rapid economic climate change, enforcement of business laws, ownership patterns, sudden institutional changes and movement in government involvement level (Peng et al., 2008; Urban & Hwindingwi, 2016) and these determine the accessibility of capital and resources that entrepreneurs need to start or grow their firms (Busenitz et al., 2000). The institutional gaps are not being filled due to the various regulations that entrepreneurs face in emerging markets (Khanna & Palepu, 2010) and this is further supported by Venter and Urban (2019) who found that the government's involvement in African emerging economies is too much and results in hampering entrepreneurship.

To discuss some of the challenges entrepreneurs face in the South African context, high criminal activity and widespread corruption hampering entrepreneurial activity and performance, causing operational difficulties for entrepreneurs (Herrington et al., 2017; Urban, 2019). South Africa, particularly, is faced with a major challenge of corruption, poor management and outdated laws that impact the legal and judicial system (Urban & Hwindingwi, 2016; World Bank, 2018). The performance of the business is also significantly impacted by the ever-changing labour laws and regulations that are developed between labour unions and big businesses, that do not take into account the smaller business but require these small businesses to adhere to the new regulations without considering that the small business does not operate like a big business and these changes can hinder the growth and performance of the smaller business (Schirmer & Bernstein, 2017). In South Africa,

key market areas are dominated by monopolies with high entry barriers, creating structural problems and a lack of competition (Urban, 2019). The overall challenge with regards to regulations and legislation in South Africa is that there is no coordination and rules are made from ignorance and ideological differences at the expense of entrepreneurial activity; despite the government correcting some legislations in one sector they add other regulations to other sectors (Herrington et al., 2017).

5.5 Entrepreneurial performance

It needs to be explored about the three major constructs of the study, namely its relationship with entrepreneurial self-efficacy, social networks and the institutional environment to understand the theoretical background of entrepreneurial performance. Bandura (1997) suggested that self-efficacy has two dimensions, one is the ability to perform a task, and the other is domain-specific, which is the ability to perform several tasks in a specific domain (Cassar & Friedman, 2009). Literature does not provide information about the relationship between entrepreneurial self-efficacy and organisational performance after start-up (McGee, Peterson, Mueller, & Sequeira, 2009). Studies that attempted to measure this relationship yielded mixed results and are inconclusive (Hmieleski & Baron, 2008). Organisational performance about entrepreneurial self-efficacy can be affected by various factors such as personal characteristics (McGee et al., 2009), environmental dynamics, and dispositioned optimism (Hmieleski & Baron, 2008). These authors provided an overview of the challenges of measuring performance and the importance of defining the measures clearly.

The relationship between social capital and entrepreneurial performance has been justified by Venter and Urban (2015), who found that business support provided by the entrepreneur's networks increased entrepreneurial performance. However, the network structures needed for entrepreneurial performance must be created through the determination of the entrepreneur (Burt, 2000), thus highlighting the importance of social networks created by the Pakistani immigrants in overcoming challenges and increasing entrepreneurial performance.

Lastly, entrepreneurial performance can be seen in economies where the formal institutions have established themselves and protect the interests of private organisations from government influence and expropriation (Shahid, Imran, & Shehryar, 2018; Urban, 2019), making the influence of the regulatory environment an important aspect for the success of any economy and by extension, an important aspect for the entrepreneurial performance of entrepreneurs.

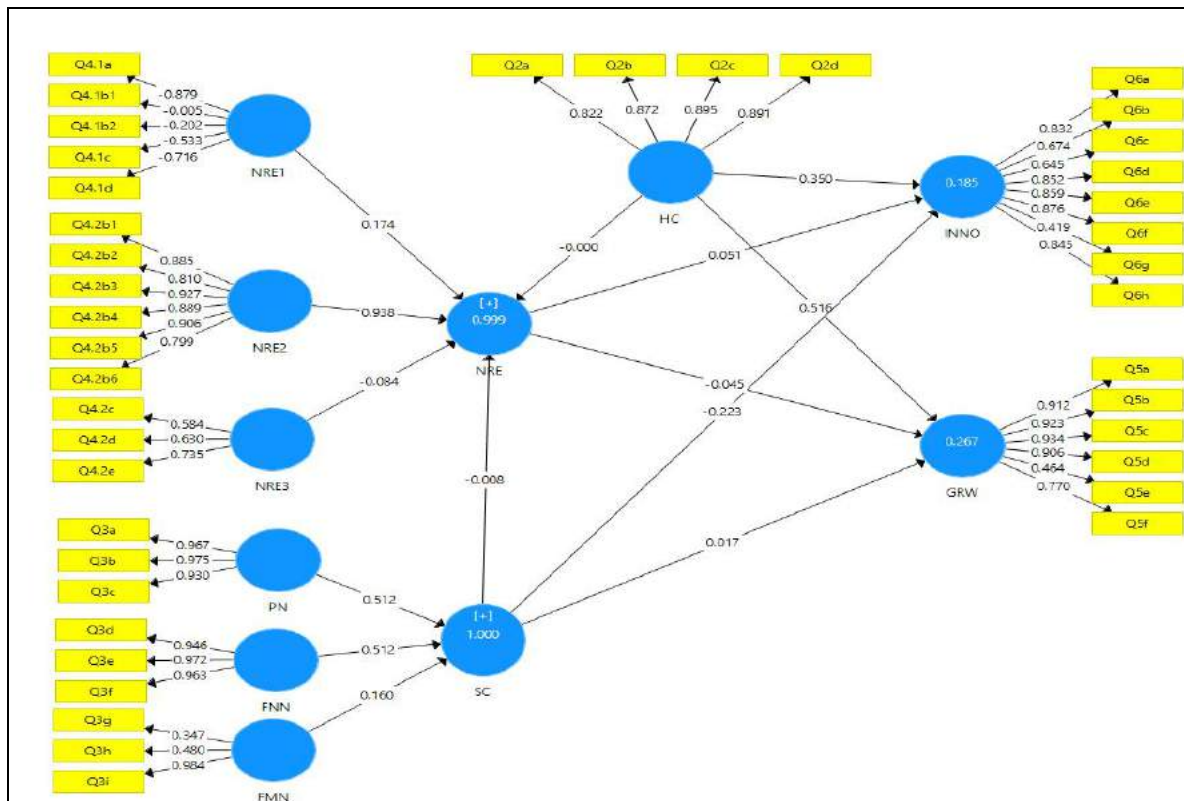


Figure 1: Hypothesised model

6. Research Methodology

This study is a predictor study, testing various independent variables about two dependent variables, with strict control variables in a specific context. The independent variables are entrepreneurial self-efficacy in terms of four task-based variables and social networking in terms of political, financial and family networking and the dependent variables of entrepreneurial performance in terms of growth and innovation. This is further defined as a complex study, which according to Lowry and Gaskin (2014), should use second-generation statistical techniques to measure the theory's credibility and reliability. One such technique is structural equation modelling, which can simultaneously examine multiple manifest and latent variables (Hair, Hult, Ringle, & Sarstedt, 2017). This is an ideal tool for this study, which seeks to measure such variables concurrently. Previous scholars have cited the reliability and credibility of this model and it is seen as a superior tool for analysing behavioural patterns that are causal in nature (Bollen, 1989).

A very specific category of structural equation modelling will be used, so that the model theory of this study can be holistically evaluated to ensure the credibility of this study further. This is called partial least squares structural equation modelling (PLS-SEM) (Lowry & Gaskin, 2014). It is suitable to use this specific model as the study is testing various theoretical models in specific narrowed-down contexts, which is the case of this study wherein the human capital is narrowed down to entrepreneurial self-efficacy and social capital is narrowed down to social networks. PLS-SEM is considered an excellent tool in statistics (Afthanorhan, 2013), as it does not work on any data distribution assumptions, and without creating any identification concerns when dealing with smaller sample sizes, provides effective data modelling (Hair et al., 2017). This is important for a study such as this, where the sample population is a generally inaccessible population due to language barriers and cultural differences, making the study unique and testing theories that will create unique relationships. The population in question is also an ethnic minority, which means that the sample size may also be limited. These factors make the PLS-SEM the perfect tool to be used to maximise the benefits of this study. Furthermore, this model displays higher R-square values and significant t-values, while rejecting null hypotheses of no-effect (Gefen, Straub, & Boudreau, 2000), which is due to maximising the explained variance of the endogenous latent constructs (Afthanorhan, 2013). These

are necessary elements for this study, as the hypotheses are unique in the sense that in the context of the study of corrupt South Africa and an ethnic minority sample population, the model should be able to reject null hypotheses and provide data that can be used and applied in the future.

6.1 Data Analysis of the Empirical Model

To be able to utilise the PLS-SEM model the empirical model will be divided into an outer and inner model, the outer model is the measurement model of the study (Wong, 2013), which measures the causal relationship between manifest and latent variables (Hair et al., 2017). The inner model refers to the structural model (Wong, 2013) and measures the causal relationship in the empirical model between the latent variables (Hair et al., 2017).

6.2 Empirical model descriptive statistics

The collected data was audited and any missing data or anomalies were traced, including results outside the given scales. Observations with missing data of over five per cent were deleted. The reason for the above precaution is in the case of a mistake during data collection, for example, skipping a question, which was not the fault of the participant. This cleaned data will be exported to SPSS for broad statistical analysis, to determine benchmarks and to gain a basic understanding of how the overall population answered (Hair, Ringle, & Sarstedt, 2013). First, the most basic mean, median, and standard deviation were provided for a basic distribution understanding. Thereafter, Kurtosis measures and Skewness measures were used, along with the Kolmogorov-Smirnov test. This further statistical analysis determined how normal the distribution was or to what degree it was away from normality (Hair et al., 2017).

6.3 Common method bias assessments

In a study that is in part a psychological study of individuals' entrepreneurial behaviour, there is a risk of common method bias occurring. Podsakoff, MacKenzie, Lee and Podsakoff (2003) thought that common method bias occurs due to the research context, the research instrument, and rater bias, all of which should significantly impact the study and should be accounted for in the results.

Using the findings of Podsakoff et al. (2003), various common method bias assessments were considered relevant for this study. They include not understanding the question properly and responding randomly, this will be countered, as the research instrument will be administered in-person, allowing the respondents to gain clarity should they not understand any questions. This study has certain questions that deal with corruption and the respondents may be hesitant to give accurate and honest responses, this will be countered by explaining to the respondents that all their responses will be kept confidential and anonymous. When research instruments have shorter scales, they influence rater responses, as such, this study has used a seven-point Likert scale, higher than most studies, to avoid short-term memory responses. Similarly, the seven-point Likert scale will help mitigate common method bias caused by respondents' boredom caused by common scales and deter respondents from trying to provide consistent responses caused by the consistency motif. Furthermore, as these research instruments will be conducted in person, the likelihood of the above occurring is low. In addition, the research instrument will be separated into sections to avoid bias.

However, statistical tools will be used to ensure that no common method bias occurs. First, the Pearson correlation matrix will assess the level of common method bias; 0.9 indicates a significant correlation. Second, confirmatory factor analysis will determine the measurement model's construct validity, indicating if any common method bias exists. The discriminant validity will not be processed for this study because it is not necessary for a formative measurement model, nor will the study test for internal consistency as a formative measurement model is considered error-free and does not correlate highly (Hair et al., 2017; Hair et al., 2013).

6.4 Measurement model assessment

In the PLS-SEM, there are two types of measurement perspectives, formative and reflective. This study will use a formative measurement model as it meets the following criteria: first, the reflective model, according to Hair et al. (2017), the reflective model uses a single-item scale. In the reflective

model, the observed measures test for the manifestations of the underlying latent constructs, and indicator variables, which are interchangeable and highly correlated variables. Contrarily, according to Hair et al. (2017), the formative measurement model uses multi-item scales where the variables are sensitive to change and as such, any omission of any variable significantly impacts the construct, as the indicator variables give meaning to the latent variable construct.

The study is more suited to the formative measurement model as a multi-item scale will be used, the indicator variables cannot be interchanged and the latent constructs combine to make the indicator variable, which represents the elements of the theoretical domain (Hair et al., 2017):

- *Content validity*: An in-depth literature review is needed to ensure that each formative measure is a valid representation of each latent construct (Hair et al., 2017). In this study, Chapter 2 attempts to analyse each latent construct and the related theoretical domain to ensure content validity.
- *Convergent validity*: According to Hair et al. (2017), convergent validity is to ensure that the formative indicators test the primary factors of the formative latent constructs. The redundancy analysis will measure whether there is a high correlation between the endogenous and exogenous variables of the latent variables in question (Hair et al., 2017; Hair et al., 2013). Convergent validity is achieved when the R^2 value is greater than 0.5 and the strength of the path coefficient is greater than 0.7.
- *Multi-collinearity model assessment*: The collinearity of formative indicators will be measured using variance inflation factors and tolerance values of the indicating variables. High collinearity for this model can result in interpretation and methodological issues. Variance inflation factors less than five and tolerance values greater than 0.20 represent low collinearity and mean the formative model can continue. The reflective model would be more appropriate for this study if the variance inflation factors are more than five and tolerance values less than 0.20. Hair et al. (2017) and Hair et al. (2013) advised that should there be an odd few high collinearity issues, these can be merged or eliminated to continue using the selected model.
- *Formative indicator significance and relevance assessment*: An indicator's comparative significance and absolute significance will be assessed to determine the influencing capability of the formative indicator on the latent constructs (Hair et al., 2017; Hair et al., 2013). The comparative significance of the manifest variables (independent variables) and latent variables (dependent variables) will be determined using multiple regression outcomes (Hair et al., 2017). Thereafter, the significance of the formative indicator's outer weights (comparative significance) will be analysed using the Bootstrapping technique. The study will follow a two-tailed Bootstrapping testing approach with a 95 per cent bootstrap confidence interval and a five per cent significance threshold, wherein p-values and t-values will be used (Hair et al., 2017). Since the threshold is five per cent, a higher percentage will be considered significant and form the outer weight, while a lesser percentage would be insignificant and form the outer loading (Hair et al., 2017).
- *Discriminant validity*: The discriminant validity will not be processed for this study; it is not necessary for a formative measurement model, nor will the study test for internal consistency, as a formative measurement model is considered error-free and does not highly correlate (Hair et al., 2017; Hair et al., 2013).

6.5 Structural model assessment

The structural model will be tested to determine if the causal relationship between constructs and the model's ability to reach the targeted constructs can be achieved by the structural concepts of the path model (Hair et al., 2017).

- *Structural model path coefficients significance and relevance assessment*: The path coefficient refers to the relationship between the constructs that are hypothesised and provides the strength of the relationship of the latent constructs to give a clear understanding of the

theorised relationship. The relationship measurement is done on a scale of -1 to +1, where the former represents a weak, insignificant or negative relationship between the latent constructs and the latter represents a strong, significant and/or positive relationship between the constructs (Hair et al., 2017). Dependent on the results or what is hypothesised, a study might want to show negative or positive relationships and should be assessed accordingly. This study hypothesises relationships that expect to yield positive and strong relationships between the constructs.

- *Two-tailed Bootstrapping testing*: Using t-values and p-values, the predictor significance will be determined. Furthermore, the Bootstrapping confidence intervals need to be tested to ensure the stability of the structural model path co-efficient (Hair et al., 2017). The benchmark for this study will be a 1.96 threshold for the critical t-values and for a p-value less than 0.05, a five per cent significance level threshold equivalent will be applied.
- *R² assessment*: To determine the predictive ability of the structural model, the coefficient of determination will be represented as R² (Hair et al., 2017). The coefficient of determination is measured on a scale of zero to one, with one being a perfectly accurate prediction of the model. In this study, a value of 0.5 will result in a moderate level of accuracy in predicting the model and a value of above 0.75 will result in considerable accuracy; the aim is to achieve a high coefficient of determination as this will mean that the predictive power of the model is high. To avoid any bias caused by the exogenous constructs toward the empirical model, the study will also determine the adjusted coefficient of determination (R²_{adj}) (Hair et al., 2017).
- *Effect size f² assessment – exogenous variables*: The coefficient of determination will test the endogenous variables of this study. As the exogenous latent variables also need to be considered, the impact of the exogenous variables on the coefficient of determination will be assessed on a scale where any value above 0.35 will mean a large effect and any value greater than 0.15 will represent a medium effect and will be represented by f² (Hair et al., 2017).
- *Predictive relevance Q² assessment*: The predictive relevance of the structural model will be evaluated by employing the blindfolding statistical technique, wherein a value greater than zero will represent a relevance between the exogenous latent variables and the dependent variable (Hair et al., 2017). The value determined by using the above statistical technique will give the cross-validated redundancy measure and this analysis will be represented by Q² (Hair et al., 2017).
- *Effect size q² assessment*: The q² represents the assessment of the effect size that the exogenous latent variables will have on the Q² value. Any q² value above 0.35 will mean that the exogenous construct has significant predictive relevance to the independent variable and a value greater than 0.15 will mean that the exogenous construct has a moderate predictive relevance to the independent variable (Ellis & Steyn, 2003; Hair et al., 2017).

6.6 Moderation analysis

This study has identified one moderating variable that would influence the causal relationship between the dependent and independent variables. The moderating variable is the regulatory environment in terms of corruption. The study predicts that the moderating variables will affect the dependent variables in achieving the required entrepreneurial performance.

A two-stage PLS-SEM approach of analysis will be conducted to test the moderation model of this study. In the first stage, the interaction terms will be omitted within the moderation model, and the latent variables will be analysed. In the second stage, a similar analysis will be done, but the interaction terms will be included. The interaction terms are achieved by multiplying the moderator variables with exogenous latent variables. The moderating variables' effect size (f²) will also be evaluated, with results greater than 0.025 representing a large moderating effect and results above 0.01 representing medium moderating effects (Hair et al., 2017). The analysis will provide an understanding of the moderating variables' effect on the study's path model.

7. Results and Findings

7.1 Test for Common method bias

Confirmatory factor analysis was conducted including all rating questions into one construct and the total variance explained was 21.4%. This was less than 60%, which indicates that there was no common method bias.

The Construct Reliability and Validity results for the hypothesised model are presented in Table 1. The results show that there were reliability issues with the NRE construct as well as its subconstructs NRE1 ($\alpha = 0.525$), and NRE3 ($\alpha = 0.359$) as well as the FMN construct, which also had a Cronbach's Alpha value less than 0.7. The composite reliability also confirmed issues with the mentioned constructs as the composite reliability scores were less than 0.47. There was no convergent validity for the FMN and NRE constructs as the AVE values were less than the minimum acceptable value of at least 0.5. This indicates that there was a need to prune some items from the model to improve reliability and validity.

Table 1: Construct Reliability and Validity: Hypothesised model

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
FMN	0.693	1.973	0.661	0.440
FNN	0.958	0.958	0.973	0.922
GRW	0.905	0.940	0.930	0.698
HC	0.893	0.900	0.926	0.758
INNO	0.898	0.951	0.916	0.585
NRE	0.630	0.906	0.602	0.290
NRE1	0.525	0.652	0.617	0.322
NRE2	0.935	0.938	0.949	0.758
NRE3	0.359	0.340	0.688	0.426
PN	0.955	0.955	0.971	0.917
SC	0.850	0.920	0.888	0.524

The pruned model presented in Table 2 met all the criteria and Cronbach's alpha was all above 0.7 and as such acceptable for the study. The composite reliability was also all above 0.9, making them all acceptable and reliable for the pruned model to match the data.

Table 2: Construct Reliability and Validity: Pruned model

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
FNN	0.958	0.958	0.973	0.922
GRW	0.935	0.937	0.952	0.798
HC	0.893	0.900	0.926	0.758
INNO	0.898	0.954	0.915	0.584
NRE	0.934	0.912	0.932	0.735
PN	0.955	0.955	0.971	0.917
SC	0.931	0.932	0.946	0.745

The discriminant validity results for the pruned model showed that there was good discriminant validity the diagonal elements are higher than any other correlation in the same row or column. This indicates that the items within each construct are strongly correlated to each other more than they are correlated to items in other constructs.

Table 3: Discriminant Validity: Fornell-Larcker Criterion

	FNN	GRW	HC	INNO	NRE	PN	SC
FNN	0.960						
GRW	-0.034	0.894					
HC	-0.022	0.518	0.871				
INNO	-0.220	0.708	0.366	0.764			
NRE	0.124	-0.088	0.000	-0.030	0.857		
PN	0.621	0.012	-0.025	-0.218	0.052	0.958	
SC	0.901	-0.012	-0.026	-0.244	0.098	0.900	0.863

7.2 Outer Model

The structure model with moderation included is shown below.

Table 4: Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
FNN -> SC	0.558	0.558	0.016	35.093	0.000
HC -> GRW	0.534	0.544	0.081	6.618	0.000
HC -> INNO	0.365	0.375	0.081	4.531	0.000
Moderating Effect 1 -> INNO (i.e., NRE moderates the relationship between HC & Innovation)	0.004	0.020	0.102	0.043	0.965
Moderating Effect 2 -> INNO (i.e., NRE moderates the relationship between SC & Innovation)	-0.059	-0.089	0.093	0.637	0.525
Moderating Effect 3 -> GRW (i.e., NRE moderates the relationship between HC & Growth)	0.092	0.097	0.100	0.920	0.358
Moderating Effect 4 -> GRW (i.e., NRE moderates the relationship between SC & Growth)	-0.097	-0.114	0.077	1.260	0.208
NRE -> GRW	-0.090	-0.048	0.111	0.807	0.420
NRE -> INNO	-0.008	0.032	0.117	0.066	0.947
PN -> SC	0.553	0.553	0.017	33.120	0.000
SC -> GRW	0.002	0.005	0.073	0.031	0.975
SC -> INNO	-0.231	-0.221	0.088	2.624	0.009

Summary of Results

- Entrepreneurial Self-Efficacy (HC) had a positive significant effect on Entrepreneurial Performance as measured through growth (B = 0.534, p-value = 0.000).
- Entrepreneurial Self-Efficacy (HC) had a positive significant effect on Entrepreneurial Performance as measured through innovation (B = 0.365, p-value = 0.000).
- Social Networking (SC) had a positive but insignificant effect on Entrepreneurial Performance as measured through growth (B = 0.002, p-value = 0.975).
- Social Networking (SC) had a negative significant effect on Entrepreneurial Performance as measured through innovation (B = -0.231, p-value = 0.009).

- Moderating Effect 1 results show that NRE does not moderate the relationship between HC & Innovation (p-value = 0.965).
- Moderating Effect 2 results show that NRE does not moderate the relationship between SC & Innovation (p-value = 0.525).
- Moderating Effect 3 shows that NRE does not moderate the relationship between HC & Growth (p-value = 0.358).
- Moderating Effect 4 shows that NRE does not moderate the relationship between SC & Growth (p-value = 0.208).

8. Discussions

The following discussions are on the pruned model and the results derived thereof:

Discussion pertaining to hypothesis 1

In the literature review section, it was determined that self-efficacy was the belief one has in one's ability to perform a task and entrepreneurial self-efficacy was a more focused belief in one's ability to perform entrepreneurial tasks (Chen, Greene, & Crick, 1998). To understand entrepreneurial action and related beliefs, Bandura's (1986, 1997) agency perspective from a self-efficacy point of view is considered the best approach (Frese, 2009). Entrepreneurship requires passion and persistence, as such, entrepreneurial self-efficacy is a crucial psychological construct in entrepreneurship research (Miao et al., 2017). Entrepreneurial self-efficacy has been found to influence entrepreneurial intention, behaviour, motivation, and performance; furthermore, entrepreneurial self-efficacy is the targeted outcome of entrepreneurial education and training (Newman et al., 2019).

This study, therefore, sought to determine if the entrepreneurial self-efficacy of Pakistani immigrant entrepreneurs influenced the entrepreneurial performance of these individuals. The entrepreneurial performance was measured in terms of growth and innovation, as measuring growth and innovation inside a minority group would yield a better understanding of the Pakistani immigrant minority:

- Entrepreneurial Self-Efficacy (HC) had a positive significant effect on Entrepreneurial Performance as measured through growth (B = 0.534, p-value = 0.000).
- Entrepreneurial Self-Efficacy (HC) had a positive significant effect on Entrepreneurial Performance as measured through innovation (B = 0.365, p-value = 0.000).

The entrepreneurial self-efficacy of Pakistani immigrant entrepreneurs had a significant positive effect on entrepreneurial performance as measured through growth and innovation. This shows that the Pakistani immigrant minority does believe in their ability to perform entrepreneurial tasks, which can be one of the reasons that they are thriving in the difficult economic conditions of South Africa. Despite this being the time in which the world economy is dealing with the aftermath of the 2019 covid pandemic, Pakistani immigrant entrepreneurs have not stopped believing in themselves and their abilities. It was important to measure the entrepreneurial performance with growth and innovation, as it gives better insight into their thinking, rather than measuring in terms of revenue, which they would not have disclosed accurately.

Discussion pertaining to hypothesis 2

The business networks of individuals or organisations are made up of the long-term relationships created with stakeholders, customers, and suppliers (Vecchio, 2003), which are crucial and make up the social capital of an organisation or individual (Low & MacMillan, 1998). Failings of the institutional environment force entrepreneurs to create networks, combine resources, and harmonise activities (Luthans et al., 2000). Networking can be further used to overcome obstacles, increase opportunity capital, and acquire resources (Low & MacMillan, 1998). Davidsson and Honig (2003) maintained that social capital networks could be used to acquire opportunities and capital resources. This supports research stating that entrepreneurs using social networks have an advantage over those who do not use social networks (Aldrich & Zimmer, 1986).

Sui, Morgana, and Baum (2015) and Neville, Orser, Riding, and Jung (2014) are of the view that immigrant entrepreneurs have experience, knowledge, and other capabilities, which are exceptionally useful for conducting business internationally, based on the resource-based theory. However, it must also be noted that the research does not systematically prove that immigrant entrepreneurs perform better than other businesses, in the sense that the returns gained on the risk assumed in a foreign market is not worth the effort (Neville et al., 2014; Sui et al., 2015; Wang & Liu, 2015). The study aimed to determine how the social networks of Pakistani immigrant entrepreneurs affected their entrepreneurial performance. The following results show that a positive, yet insignificant effect

- Social Networking (SC) had a positive but insignificant effect on Entrepreneurial Performance as measured through growth ($B = 0.002$, $p\text{-value} = 0.975$).
- Social Networking (SC) had a negative significant effect on Entrepreneurial Performance as measured through innovation ($B = -0.231$, $p\text{-value} = 0.009$).

The results showed that social networks did not play a positive role in the entrepreneurial performance of Pakistani immigrant entrepreneurs, contrary to what was hypothesised. The hypothesis was that there would be a positive significant effect on entrepreneurial performance, as social networks would have helped overcome challenges as seen in the literature review. However, this finding that the social networks are not what the Pakistani immigrant entrepreneurs are using to overcome challenges is an important finding to differentiate them and South Africa from the main western studies. This finding implies that Pakistani immigrant entrepreneurs rely on their own belief in their entrepreneurial self-efficacy for their success.

Discussion pertaining to hypothesis 3

Some challenges entrepreneurs face in South Africa are high criminal activity rates and widespread corruption, which debilitates entrepreneurial activity, performance, and operations (Herrington et al., 2017; Urban, 2019). Corruption is defined as having three facets: first, an organisation or individual uses their authority for personal gain, instead of benefiting the stakeholders or people entrusted with power. Second, an individual or organisation is involved in illegal activity, violating existing rules and regulations and going beyond their legal limits (Bahoo, Alon, & Paltrinieri, 2020). Third, an individual or organisation, be it a private or public person, misuses their power to benefit personally. This can happen in a variety of ways: fraud, bribery, and nepotism, among others.

This study looked at the negative regulatory environment as a moderator between the various variables discussed above. The study found that the negative regulatory environment did not moderate Pakistani immigrant entrepreneurs' human and social capital for innovation and growth. This is contrary to what the literature review had found from research, and sheds light on some of the unique facets of a South African study, despite it being a minority, it appears that the negative regulatory environment does not influence the capital of Pakistani immigrant entrepreneurs. The literature review found that the negative regulatory environment should have an impact, however, it could be that it moderates South African entrepreneurs and not the minorities that come from other countries such as Pakistan.

- Moderating Effect 1 results show that NRE does not moderate the relationship between HC & Innovation ($p\text{-value} = 0.965$).
- Moderating Effect 2 results show that NRE does not moderate the relationship between SC & Innovation ($p\text{-value} = 0.525$).
- Moderating Effect 3 shows that NRE does not moderate the relationship between HC & Growth ($p\text{-value} = 0.358$).
- Moderating Effect 4 shows that NRE does not moderate the relationship between SC & Growth ($p\text{-value} = 0.208$).

9. Managerial Implications

The study attempts to determine the regulatory environment's influences on immigrant entrepreneurs' entrepreneurial performance, which adds value and contributes knowledge to the pre-existing theoretical framework. Entrepreneurial activity can be promoted or obstructed by the impact that institutions from various economies have, and to examine and understand this, the institutional theory is used (Stenholm, Acs, & Wuebker, 2013; Urban, 2019). The study provides a unique relationship to be tested in terms of the negative elements of the regulatory environment that hinder entrepreneurial activity, and the effects of variables being tested in this study on a specific immigrant minority in their efforts to overcome these challenges. Previous research supported the importance of institutional theory and was of the view that for economic and entrepreneurial development, there needs to be an existing institutional environment (Baumol & Strom, 2017; Bosma et al., 2018; Valliere & Peterson, 2009). Hence, the contribution and importance of the study are within the growth achieved by immigrant entrepreneurs when the South African economy is struggling, which can help academics and policymakers determine the facets that need to change to allow for increased productive entrepreneurial activity.

Immigrant entrepreneurship is a growing field of study in entrepreneurship due to globalisation and the ease of immigrating. The environment of immigrant entrepreneurs needs to be considered and in countries such as South Africa, the origins and characteristics of successful entrepreneurs are important and need to be determined (Venter & Urban, 2015). This has resulted in the need for further research on immigrant entrepreneurship, as the traditional models of entrepreneurship have started to unravel. This study will focus on a specific immigrant population to provide a detailed account of the immigrant minority and a unique look at a previously inaccessible population. This will add to the theoretical framework of immigrant entrepreneurship, as around the world, scholars have studied immigrant entrepreneurial activity and found that the negative experiences of immigrant entrepreneurs are because of anti-immigrant sentiment (Brettell & Nibbs, 2010).

Another contribution to be made by this study regards entrepreneurial self-efficacy, which will build on the existing knowledge base by focusing on a particular context and a specific population in South Africa. A meta-analytical study done by Miao et al. (2017) found a relatively strong relationship between performance and the business founder's entrepreneurial self-efficacy. This addition to knowledge is unique, as the majority of research is done in the western countries that are then compared to African countries which are developing economies, and not developed like the western economies. Apart from the contribution to literature, there will also be contributions to the theoretical framework, as the focus is on immigrant entrepreneurship in a corrupt regulatory environment, providing a very specific look into the role that entrepreneurial self-efficacy plays. Furthermore, the contribution to knowledge will be how immigrants used their entrepreneurial self-efficacy to overcome challenges in South Africa, so that their local counterparts may use this knowledge to thrive in South Africa's dire economic conditions.

The commercial impact of this study will be that it will allow established entrepreneurs to use this study to increase their entrepreneurial knowledge and find ways to remain motivated and passionate. Potential and new entrepreneurs will be able to use this study to increase their entrepreneurial self-efficacy, which will keep them motivated and passionate to keep growing or starting new businesses. A further contribution, in line with entrepreneurial self-efficacy, is social networking, which will determine if immigrant entrepreneurs use it to overcome challenges. Gedajlovic et al. (2013) explained that entrepreneurship and entrepreneurs are situated socially, and Corbett (2007) further elaborated that the social environment in which organisations and individuals interact is where opportunities are explored and exploited. Through the theoretical framework, the contribution to literature will be in the form of testing the regulatory environment and unique relationships that allow an immigrant population to thrive in South Africa. Dabic et al. (2020) deliberated that when considering the success of ethnic minorities, the social network factors specific to the group in question need to be assessed and should not be generalised. This knowledge could be used to allow South Africans to understand the importance of social capital and its development towards competitiveness and entrepreneurial growth.

This study will be testing complex theories and relations of people from a specific background to add extensive knowledge and findings that could be utilised by multiple disciplines and studies within the field of entrepreneurship. This creates a unique study, testing unique relationship types that could contribute greatly to various fields, structures and interested parties. The other unique element of the study is that the targeted population and their background of being Pakistani immigrant entrepreneurs adds a whole new level of data that is extremely difficult to access due to language and cultural barriers. Thus, this study will further add knowledge to immigrant entrepreneurship and the abovementioned unique complex relations. The study will contribute to knowledge at various levels, as the data collected in this study will contribute to the following fields in entrepreneurship: entrepreneurial self-efficacy, social networking, institutional environment, family business, immigrant entrepreneurship and entrepreneurial performance.

South Africa has a dedicated department for the benefit of SMMEs in the form of the Department of Small Business Development. This department can use this study to better assist SMMEs and entrepreneurs by using the antecedents of entrepreneurial self-efficacy as tools to increase the entrepreneurial self-efficacy of the entrepreneurs in the various SMMEs. This study will provide a better understanding of how certain immigrant entrepreneurs can be more entrepreneurial and this will enable the creation of more effective and efficient policies for any government and related policy makers that can be implemented in all communities to enhance entrepreneurial propensity.

This study will also contribute by giving potential and existing entrepreneurs the knowledge of how immigrant entrepreneurs can overcome challenges, barriers to entry and unfavourable conditions to be entrepreneurial. The academic contribution of the study is that the findings of this study can be used to add to the curriculum about immigrant entrepreneurship and their related entrepreneurial self-efficacy and social networking in a challenging regulatory environment.

Entrepreneurship has been argued by Schumpeter (1934) to lead to economic growth; however, this is mainly for developed countries, and there is limited empirical research that supports this for developing countries (Koster & Kumar Rai, 2008), such as South Africa. This study aims to contribute to a limited knowledge base and will add to various facets of knowledge of developing countries about entrepreneurial self-efficacy, regulatory environment, social networking, immigrant entrepreneurship, and family entrepreneurship.

South Africa is an emerging economy, and this type of study will contribute toward developing controls suitable for an emerging economy, which is not as widely studied as the more northern developed economies. The impact of the negative elements of a regulatory environment results in the local entrepreneurial environment engaging in more unproductive activities and engaging in corruption. This study will assist policymakers to create controls that will limit such behaviours and level the odds for local entrepreneurs, which will induce more productive entrepreneurial activity.

The study will also benefit other emerging markets with an influx of immigrant entrepreneurs due to globalisation. Too may be impacted by the negative elements of the regulatory environment, which the immigrant entrepreneurs may overcome, while their local counterparts may be struggling to survive. This study may potentially help them create better regulatory controls and ensure that no unproductive entrepreneurial activities occur and all entrepreneurs can rely on a supportive regulatory environment.

Furthermore, this study will be focusing on a very specific minority of Pakistani immigrant entrepreneurs, which makes the contribution to academia unique, as it is an extremely difficult minority from which to gather data due to the various language and cultural barriers. This insight into the Pakistani immigrant community will provide very specific data on an ethnic minority, which is crucial in the more globalised economy of South Africa.

10. Conclusion

The various relationships being measured in this study are supported and their relationships hypothesised using extensive research. The literature focuses on providing an understanding of entrepreneurship in general and provides an in-depth look at some of the factors that provide contextual details of the study, such as unproductive immigrant entrepreneurship paired with local entrepreneurship in the venture creation framework.

This highlights the narrow focus of the study and the type of entrepreneurship under scrutiny. Thereafter, the literature provides an extensive understanding of immigrant entrepreneurship, which is the main population type being studied. This should provide a clear understanding of the unproductive family businesses of immigrant entrepreneurs in South Africa.

Thereafter, the independent variables of human capital and social capital are reviewed and discussed. The human capital variable is narrowed down to the entrepreneurial self-efficacy of individuals, which is discussed extensively; social capital is narrowed down to social networks such as family, personal, and political ties. These variables are supported by research to measure their relationship with entrepreneurial performance.

To provide further context and boundaries in the study, the institutional dimensions are reviewed as moderating variables of the study, and the control variables are covered to give more context to the study.

This study is a cross-sectional primary study focusing on Pakistani immigrant entrepreneurs, wherein the data will be collected by administering the research instrument, with closed-ended questions, in person. The targeted sample population is formal businesses owned by male Pakistani immigrant entrepreneurs. The location of the study will be Gauteng, South Africa and due to the population in question being a minority, the respondents will be selected using convenience and snowball sampling methods to ensure that the necessary number of responses are collected for a successful study. Multiple statistical tests will be done on the data collected to ensure that the maximum knowledge may be derived from the study and PLS-SEM will be used as the statistical framework.

The research found that the entrepreneurial self-efficacy of Pakistani immigrant entrepreneurs contributes to their success and entrepreneurial performance, as measured through growth and innovation. It was also further determined that the social networks of Pakistani immigrant entrepreneurs do not affect their entrepreneurial performance in terms of growth and innovation for Pakistani immigrant entrepreneurs. It was also found that despite the western research which found that the negative regulatory environment could influence and moderate the capital theory of entrepreneurs is disproved for Pakistani immigrant entrepreneurs.

It would appear that the advantage that the Pakistani immigrant entrepreneurs have over their South African counterparts and can survive the harsh South African economic environment is due to their entrepreneurial self-efficacy and not their networks. This may not be the only reason for their survival. Still, rather one of the elements and only further research into other facets of the entrepreneurial field will reveal the other components of success. The belief in themselves and their ability to do entrepreneurial tasks contributes to them remaining passionate and working through the covid pandemic, overcoming challenges of the negative regulatory environment and anything else that becomes an obstacle for them. This is a key trait that should be focused on and should be taught through all possible channels to give individuals the ability to trust themselves to be entrepreneurial and remain steadfast even when faced with failures and obstacles.

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OPERATIONS AND SUPPLY CHAIN MANAGEMENT



The “Fit For Study” of the First-Year Intake at a Higher Education Institution

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Keywords

First year students; fit for study; reasons for study; student financial awareness; inductive content analysis.

Abstract

Determining the fit for study of first-year students may help educators and higher education Institutions develop a better understanding of the first-year student cohort. Students face various choices on entering higher education studies, including institution selection, payment plans, and qualification types. Students enter higher education institutions with a certain frame of reference that guides their choices. The purpose of this study is to investigate the fit for study of first-year students at a comprehensive higher education institution in South Africa. In this qualitative study, twenty-eight questionnaires with ten open-ended questions were gathered via google docs and analysed using inductive content analysis. The study investigated, for instance, first-year students’ reasons for studying, students’ prior knowledge of financial planning and qualifications as well as their general fitness for higher education studies. The findings indicate that the first-year cohort is unprepared and unfit for studies. The majority of first-year students are African first-generation students who know nothing about their chosen qualification prior to registration and use extrinsic motivation, such as careers and salaries, to choose their qualification. In this study, students argued that their first year of study was hard work and a huge adjustment, exacerbated by teaching and learning being presented online due to COVID-19 restrictions. This study contributes to literature by providing a student-centred perspective on fit for study and by enhancing students’ academic learning when lecturers expose, utilise, and understand students’ prior knowledge on higher education matters.

1. Introduction

Students who wish to pursue a higher education (HE) qualification face various choices, such as the brand of higher education institution (HEI), payment options and qualification types (diploma or degree). When preparing educational opportunities for students, HEIs should have a clear picture of students’ motivations, preparedness/fitness for study, expectations, and an understanding of the constraints that might prevent or inhibit a student from studying. Hudig et al. (2020) opined that students go to HEIs with a certain mindset/frame of reference relating to their motives for studying. This frame of reference may consist of multiple motives.

Many of the first-year students in South Africa are African first-generation students and come from economically polarised and socially stratified backgrounds. These various backgrounds have affected the different schooling backgrounds with classification of schools within certain societal and geographical groupings (Mazwayi, 2020; Motsabi et al., 2020). Bunce and Bennet (2021) revealed that there is evidence to suggest that approaches to learning and subsequent academic performance are influenced by student identity. Students’ identification within social categories may impact how they think of themselves as students and the behaviours they are likely to adopt in the context of learning.

Much research has been done on first-year students (Britt, Ammerman, Barrett, Jones, 2017, Harahap, Hurriyati, Gaffar, Wibowo, Amanah, 2017), but it has been argued (Hudig et al., 2020) that research on motives for studying has primarily been dimensional or variable-centred with a quantitative approach. This method of research is outdated, as it tests the relationship of various dimensions, the interplay between these dimensions or validating certain dimensions. Moreover, current research on HE students takes the angle of students as HE consumers (Khan & Hemsley-Brown, 2021). However, students and

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their interplay with HEI is complex and they have multiple motives that may interact. Therefore, a qualitative, student-centred perspective on motives for studying can be more fruitful to explain students' fitness for HE studies and first-year study success and well-being. Motsabi et al. (2020) agreed, stating that the unfitness of first-year students contributes to high failure rates at HEIs, attrition problems of first-year students, a lack of understanding from both the HEI and students and thus warranting more exploration.

Considering the background provided above, it is important to investigate how and why students make their educational choices and how fit they are for this journey. Only by understanding first-year students' fit for study can educators make accurate decisions about better preparing them for HEIs. This study is done within the emerging economy of South Africa and aims to investigate the prior knowledge and readiness to study of the first-year intake at a HEI. Consequently, the following areas were probed:

- First-year students' reasons for studying;
- First-year students' knowledge on financial planning and payment of studies;
- First-year students' prior knowledge of and reason for chosen qualification; and
- First-year students' general fitness for HEI studies.

This study contributes on two levels. On a theoretical level, the study provides a student-centred perspective on fit for study, a neglected research domain (Hudig et al., 2020). On a managerial/practical level, this study's finding can support and enhance students' academic learning when lecturers expose, utilise, and understand students' prior knowledge of HEIs (Castillo-Montoya, 2017).

The study's introduction is followed by a literature review that provides context to the study and endeavours to offer insights into first-year students' fitness for HE studies. The investigative nature of the study called for a qualitative research approach explained in the research methodology. Thereafter, the findings are presented and discussed, followed by the managerial implications, limitations, avenues for future research, and conclusion.

2. Literature review

The literature review section starts off by providing context for the study with a brief introduction of the South African educational sector, the research environment of this study. As this study provides opportunity to ascertain the voice of first year students, previous research findings are explored on various student issues, such as reasons for students studying, students' prior knowledge of their financial obligations and chosen qualification, and of first-year students' general fitness for HEI studies. This study argues that students make HE study choices not on informed decisions or talent but rather on social pressures.

2.1 Context of the study

South Africa has 26 HEIs that accommodate just over one million students. These HEIs are divided into:

- Nine universities of technology focused on vocationally orientated education;
- Six comprehensive universities offering a combination of academic and vocational diplomas and degrees; and
- 11 traditional universities offering theoretically orientated university degrees (Universities South Africa, 2021).

The study's selected HEI is a comprehensive university in Gauteng, one of the nine provinces in South Africa. Gauteng is considered the economic hub of South Africa and host six universities. The most of any of the other provinces. Many of the Gauteng universities also occupy high rankings in South Africa (Universities South Africa 2021)

2.2 Reasons why students study

Students further their HE studies for academic performance and achieving learning, but little is known about what fuels such reasons. These educational reasons can be regarded as the push and intrinsic value that energise educational activities, facilitate learning, and channel behaviour towards achieving educational goals (Öqvist & Malmström, 2018). Educational motivation is defined as the doing of study

activities where a student is moved to act for different reasons. This moving to act can be for the fun or challenge, or external expectations or rewards. Educational motivation requires energy, direction, and persistence, which are aspects of activation and intention (Ryan & Deci, 2000), and guides the goals and aspirations of students (Podoyntsyna et al., 2012; Welpel et al., 2012). According to Lauver et al. (2013), there are two basic reasons why students study, namely they are career-driven and HE studies are seen as taking the first step in the direction of a career, and students view HEIs as a time of further growth by interacting with lecturers and other students and gain confidence through encouragement and building relationships. Bunce and Bennett (2021) added that there are two broad types of motivation applicable to student motivation: intrinsic and extrinsic. Students who find a task intrinsically motivating engage in the content as they find it inherently satisfying and interesting. Students who are extrinsically motivated engage in a task because they desire a particular outcome or reward, or expect external recognition. Curtis and Ledgerwood (2018) agreed with Lauver et al. (2013), stating that millennials express a high interest in engaging with the world beyond their homes. Therefore, studies at HEIs offer unique experiences to students by providing lifelong personal and professional benefits, such as personal growth, cultural awareness, employability, new language skills, creativity, communication skills, and social network development. This is especially applicable to those first-year students choosing to stay in residences.

2.3 Students' prior knowledge of the financial obligation of studying

Britt et al. (2017) stated that the elevated cost of HE has received well-deserved attention lately. In South Africa, student-led protests against the high fees of HEIs gained momentum in 2015/2016 and spread across the country. The #FeesMustFall movement sparked heated debates on HEIs' fee structures. The student message was clear – the HE costs were too high and unaffordable for most poor students (Ndelu et al., 2017). This protest action led to student funds paid out by the National Student Financial Aid Scheme (NSFAS). The mission of the NSFAS is:

To transform NSFAS into an efficient and effective provider of financial aid to students from poor and working class families in a sustainable manner that promotes access to, and success in, higher and further education and training, in pursuit of South Africa's national and human resource development goals. (National Government of South Africa, n.d.)

NSFAS has the following criteria for candidates: must be a South African citizen; must have a valid matric (grade 12); must have a valid ID document; must have a proof of acceptance from the institute of higher learning where applying to; must provide proof of income for either parents or guardians, or proof of deceased where applicable; must be capable within the English language; and parents must have a combined annual household income of no more than R350 000 (Alfred, 2022; NSFAS, n.d.). However, in the 2021 academic year, 150 000 applications were rejected and did not receive NSFAS funding (Bhengu, 2021) and there is the issue of the "missing middle class". These are students from households earning above the NSFAS threshold of R350 000 a year, but who are not wealthy enough to fund themselves or to qualify for study loans from banks (Bangani, 2021). Wilson-Strydom (2017) maintained that South African education, in particular the terrain of access to HE, provides a helpful empirical platform for analysis, given the extremes of wealth and poverty in South Africa. Greeff et al. (2021) stated that the #FeesMustFall movement exposed students' financial vulnerabilities. Nevertheless, the protest was in many cases misunderstood by students.

2.4 Students' prior knowledge of their chosen qualification

Kazi and Akhlaq (2017) emphatically stated that unfortunately students' career choices are made with little awareness of the real world. This sentiment is shared by Castillo-Montoya (2017), who asserted that students' prior knowledge comes from their own lived experience. HEI students have prior knowledge of academic subject matters they have learnt from their secondary/high school. Students have "pockets of knowledge" and this is rooted in their view of their own identity and encompasses race, ethnicity, social class, and religion, and reflects larger social, cultural, and historical realities. This is exacerbated by the fact that many current students are first-generation university students and could not be truer within the South African context. Most first-year students are African and the African culture prides itself in providing support in their communities (Motsabi et al., 2020). In African culture, social support is part of the ubuntu philosophy, which emphasises the importance of a group or community (Mangena, 2016). Children grow up within a family constituting parents (mother and father), grandparents, aunts,

neighbours, and older children who share in the parenting. African people believe in the idiom “*umuntu ngumuntu ngabantu*”, which translates to “a person is a person through other persons” (Mangena, 2016). Social support serves as a protective factor for first-year students through social networks, which either provide financial support, information, or other resources help buffer the students from the harshness of poverty and desperation of need. When faced with challenges of academia, students have a network of family, peers, and other community members to depend on. The big problem is that first-generation students come from families where the understanding of academic norms, expectations, and general HE demands are often misunderstood (Motsabi et al., 2020).

In summarizing the literature, it is evident that South African students are rife with choice on HEI to start their studies but the reason for this selection is unclear. Students enter these HEI with a total lack of knowledge on how to pay for HE or how to select a qualification and rely on their own inner social circle as their source of knowledge. This study endeavours to investigate these claims within an emerging context. The rationale for this study is to provide an opportunity to understand first year students and used a qualitative research approach to investigate the fit for study of first year cohort at a HEI in South Africa.

3. Research methodology

3.1 Research paradigm

A research paradigm is inclusive of several components that lay out the study process. An interpretivist paradigm is more suited for this study as Interpretivism is more sensitive towards individual meanings and contribution. And, as Alharahsheh and Pius (2020) stated, Interpretivism considers differences such as cultures, and various social circumstances.

3.2 Study approach

This study is investigative in nature and followed a qualitative research approach. Kamal (2019, p. 1387) stated that qualitative enquiries have been widely applied in the social sciences and educational studies and this approach explores and understands the meaning individuals or groups ascribe to a social or human problem. Qualitative research is concerned with how people describe their experiences in their own words and what meaning they attribute to their experiences based on the objective of the study. In this study, first year student will express their views – from their own frame of reference – on matters of HEI selection. Shava (2019, p. 239) revealed that qualitative research is also better suited when there is limited research information on the topic, as in the case of this study, within an emerging economy. A qualitative approach is better suited as this study aims to provide specific understanding to a phenomenon based on the students’ experiences

3.3 Sampling plan and site selection

Moser and Korstjens (2018, p. 10) stated that a sampling plan is a formal plan that includes a sampling method, a sample size, and the procedure for recruiting the study participants. The sampling plan must describe how many observations, interviews, focus group discussions or cases are needed to ensure that the findings will contribute rich data. This study employed a purposive sampling technique, wherein judgement was used in the selection of the study participants, and all first-year students within a business and economic college were invited to participate. Purposive sampling provides justification to make generalisations from the sample to the population (Sharma, 2017, p. 750). Twenty-eight questionnaires with ten open-ended questions were gathered via google docs, the link was provided on BlackBoard, a student-lecturer learning interface platform. The ten questions were guided by the study’s aim, areas of investigation and the literature that was reviewed. These twenty-eight questionnaires represent three different departments within a business college, namely Marketing, Accounting, and Public Governance. The study was conducted in Gauteng, South Africa.

3.4 Data analysis

This study aimed to describe human experiences and perspectives and used inductive content analysis. This form of data analysis is suitable when the phenomenon under study has received little attention from academicians or when prior knowledge is fragmented. This method’s ultimate goal is to produce abstracts of the raw data that summarise the main categories, concepts, and themes (Kynge, 2020, p. 14). The research used in vivo coding to further honour the participants’ voice (Saldaña, 2018, p. 86). This form of coding is helpful when researchers interact with participants from a particular group, for instance, first-

year students in this study (Manning, 2017). This study followed the sequential framework of Mayring (2014), as outlined below.

Step 1 – Research questions. Formulate a research aim that fits an inductive logic, which means that it must be exploratory or investigative. The aim of this study was to explore the prior knowledge and readiness to study the first-year intake at a HEI. The theoretical background must be described using literature and previous studies. Step 1 was covered in the introduction and literature review sections.

Step 2 – Category definition and level of abstraction. The category definition, which has to be explicit, serves as a selection criterion to determine the relevant material from the texts – online questionnaires. The level of abstraction defines how specific or general categories have to be formulated, which is central to inductive category formation. For the purpose of this study, the areas of investigation were operationalised into the following category definitions: investigate and describe first-year students' reasons for studying; investigate and describe first-year students' knowledge on financial planning and payment of studies; investigate and describe first-year students' prior knowledge of and reason for chosen qualification; and investigate first-year students' general fitness for HEI studies. Step 2 was covered in the introduction, literature review, and participants' feedback in the online questionnaires.

Step 3 – Coding the text. Qualitative data coding decisions should be based on the paradigm and theoretical approach of the study. To tap into the participants' experience, in vivo coding was used to honour their voice and to ground the data analysis from their perspective. Steps 3 to 7 were carried out on the questionnaires, with each step improving on the last.

Step 4 – Revision. A revision in the sense of a pilot loop is necessary when the category system seems to stabilise. A check is done to see whether the category system fits the research question; if it does not, a revision of the category definition is necessary. A check is also done to see whether the degree of generalisation is sufficient. If there are only a few categories, then the level of abstraction is too general; and if there are many, then the level of abstraction is too specific.

Step 5 – Final coding. All the data material had to be worked through with the same rules – that is, category definition and level of abstraction.

Step 6 – A list of categories emerged at the end of this process. They were grouped together to build themes, keeping in line with the research aim.

Step 7 – Intra- or inter-coder check. The text was coded from the beginning to match the categories.

Step 8 – Findings. Initially, the findings were the list of categories. If categories have to be found for several text passages, a frequency analysis of the categories' occurrence could be useful. The categories and the frequencies have to be interpreted in the direction of the research aim. Step 8 revealed the findings of this study, which are presented in the section that follows. The findings will be presented in the same order as the listed areas of exploration.

3.5 Data trustworthiness

Lincoln and Guba's Four Dimensions Criteria (1985) were considered to evaluate trustworthiness through assessing credibility, transferability, conformability, and dependability of the qualitative data. The coded data were checked by peers and subject experts and their feedback was considered. Anney (2014) stated transferability is how the qualitative researcher demonstrates that the research study's findings are applicable to other contexts. In this case, "other contexts" can mean similar situations, similar populations, and similar phenomena. From a qualitative perspective transferability is primarily the responsibility of the one doing the generalizing. The most common related strategy to obtain transferability is the use of thick descriptions, but it is also supported with purposeful sampling to ensure a representative sample and data saturation. Another method to ensure trustworthiness is to do constant comparisons between participants' feedback.

3.6 Ethical clearance

This study was issued with an ethical clearance certificate through the relevant college committee. Participants' informed consent was obtained via a click through button on the google doc and privacy and anonymity was also guaranteed via a click through button.

4. Findings and discussion

First, this study investigated and described first-year students' reasons for studying. One dominant theme that emerged centred around careers. The participants felt that getting a qualification would assist them in getting a career and that people who have qualifications get good jobs and qualifications are seen to build careers. The findings from this exploration focused on getting a job and making money. The participants were aware that studying is the key towards a career and a better life overall, with some explaining why they studied as follows:

- To further my studies and have a degree. (P1)
- It is because majority of people who studied at higher education get good occupations that is what I noticed. (P15)
- To better my life. (P27)

From these findings, it is clear that students are extrinsically motivated to study. They connect their motivation to study to external recognition. According to Shcheglova et al. (2020), students who have a HE qualification have a better chance at a successful career and self-realisation. Van Broekhuizen et al. (2016) opined that students are motivated to improve their family circumstances with qualifications that would enable them to get better jobs to achieve their goals. Furthermore, students want to better their lives and first-generation students are motivated to study at a HEI to break the cycle of poverty. By obtaining a qualification, students can get a job with a good salary that would enable them to improve their social conditions (Motsabi et al., 2020).

Once the reasons why students study were made clear, the participants were probed further to explain what they would have wanted to know before choosing to study at a HEI. The themes that emerged focused on insecurities and unfitness for HE studies. Participants wished they had known beforehand how everything works, referring specifically to how to navigate their studies and their chosen HEI. There is also a general uncertainty on their chosen qualification and participants wanted to know what their future job prospects were. Moreover, I participants stated that they wished they had known beforehand that studying at a HEI is hard work. There are still many unanswered questions.

- I would have wanted to know how things actually work here in terms of choosing modules and all that stuff. (P5)
- I would want to know how to find a job maybe after finishing my studies. (P21)
- I wish I'd known that it was this hard. (P28)

This finding ties in well with Van Broekhuizen et al. (2016), who stated that high schools are not adequately preparing students for HE studies. Contrastingly, Öqvist and Malmström (2018) maintained that although students have many unresolved questions, it is educational motivation that provides persistence and commitment to learning tasks. This educational motivation is an important factor for the entire learning process. Educational motivation is pivotal for students' learning and for academic achievement, such as graduation and career success.

Second, the study wanted to investigate and describe first-year students' knowledge on financial planning and payment of studies. There is a general apathy and participants expressed a lack of knowledge on HEI finances, how to pay for their studies, or how to obtain the necessary information. The participants stated that they had to source the information themselves or that they asked the teacher at the high school for such information:

- My LO [life orientation] teacher from high school is the one that told me about financial planning and payment of studies. (P5)
- Browsing on the Internet and word of mouth. (P2)

South Africa has 26 types of HEI, each with numerous qualifications and costs involved, meaning the information provided by teachers is superficial. This is confirmed with the next finding, when the participants were asked what they would have wanted to know about financial planning and payment of studies before applying to study at a HEI and the resounding theme emerged of “what everything costs”. The participants were shocked regarding what it costs to be a student. According to them, it is expensive to be a student, even with NSFAS funding. The participants were unaware that HEIs’ tuition fees do not reflect the full cost needed to study. There is a lack of financial fitness amongst the first-year students:

- I wish I would've looked into it much earlier and applied for much more [funding] because I was so close to not having finances to pay my studies. (P24)
- I wish I'd known that it would so much money; that there would be such a difference between university fees and high school fees. (P2)

Richards (2019) revealed that students expect a relevant course design, good support services, and a social life, and expect their university to maintain a good reputation. High service quality improves the hassle of paying fees and enhances satisfaction. Service quality encompasses activities and facilities, such as reputation, library services, catering, accommodation, quality of course design, class size, good teaching, recreational facilities, and student workload. Motsabi et al. (2020) stated that it would be unrealistic to expect students to have prior financial knowledge of HE, as many of these first-generation students come from poverty and a social environment that cannot provide the necessary information. These students see HE studies as a means to improve their family situation.

Third, this study endeavoured to investigate and describe first-year students’ prior knowledge of and reason for the chosen qualification. An interesting yet overwhelming response was that the participants knew nothing about their chosen qualification prior to registration. The answers were superficial with a lack of substance:

- I didn't know about it, as it was chosen by default of space constraints in the course I specifically applied for. (P2)
- [The qualification] involved a lot of maths and thinking. (P25)

When the participants were probed more and asked what made them choose their qualification, two themes emerged. The participants indicated that they liked the subject at school and that their matric results guided their study choice. It is noteworthy to indicate that no participant mentioned any form of deliberate chosen career, nor was there any indication of some sort of career guidance, such as psychometric testing:

- I loved business studies in high school, so me furthering it was just perfect. (P8)
- My marks. (P3)

Harahap et al. (2017) stated that students wanting to pursue HE studies face various considerations, such as the choice of HEI and the various qualifications. The collection of information on these choices becomes a real challenge. The authors added that there are several reasons why students choose a qualification, namely the personal situation of the student; student decision-making is also affected by price, promotion, people, and physical evidence; and information from students who are still studying and have passed the qualification (alumni).

Lastly, this study wanted to investigate first-year students’ general fitness for HEI studies. To obtain thick and rich descriptions, several probing questions were used. When asked what could be put in place to better inform high school learners on further study opportunities after high school, the participants felt that HEIs must be proactive and send HEI agents to high schools to talk to school-leavers. Additionally, participants shared that they want to be assured they have selected the right course. They believe that HEI agents will provide more accurate information on courses and on various HEIs. Overall, the study’s respondents longed to acquire the right information, including all aspects of HEIs and career choices. Some even expressed that school-leavers should be given aptitude tests to help career guidance.

- Much more information than the one that is available and also universities could send some agents to high schools to provide information about a certain institution. (P1)
- Giving them aptitude tests and providing them with the qualifications they are applicable for. (P23)

As these participants were already in their first year of studying when surveyed, it can be assumed that some students were aware that they may be in the wrong qualification. They still want assurance from somebody that they have made the right career choice. Students want more information on the various qualifications and where their knowledge and abilities fit in; they want a:

- Guarantee that they will have a bright future if they choose the right course at the right institution. (P12)

This finding is not unique and, as Castillo-Montoya (2017) stated, HE students make qualification choices based on subject matter they have learnt at secondary/high school. This insufficient prior knowledge may not be relevant later. Participants were further probed and asked to elaborate on their first-year experience of HE teaching and learning. They argued that their first year was hard work and a huge adjustment, exacerbated by the fact that everything was online. The online theme was always connected with negativity:

- It was hard for me to cope ... you have to catch up! (P22)
- It's a huge adjustment. (P10)
- It is not that much fun as everything is online and we can't experience full varsity life because of coronavirus. (P2)

The students did not expect all teaching and learning to be online, but they were aware that COVID-19 was the cause for this. According to Shcheglova et al. (2020), first-year students mostly struggle with social and academic integration. The first year of study is a critical period for students, as it is a major transitional period from secondary/high school to a HEI and subsequently to a more adult life. Novice students may experience the registration process and arrival at campus as a culture shock, which becomes replaced by issues of assimilation and absorption of values of the HEI. This leads to first-year students often feeling isolated, separated, or socially and academically alienated from the college (Shcheglova et al., 2020). Matarirano et al. (2021) stated that current students are digital natives and would not encounter many challenges in online learning. Today's students enter HEIs with vast knowledge and experience of computer technologies as they grew up with the technology. Most students have access to and are experienced in using digital technologies as they spend a lot of time on gadgets. Most students can use HEI online tools and platforms, but the successful utilisation of these platforms requires an Internet connection, data, and a laptop, which are resources that are not always available to many students, especially those from remote rural areas.

The participants were asked what hardships they experienced when moving from high school's teaching and learning to HEI's teaching and learning. The participants moved from a face-to-face lecturing method at school to an online lecturing method at the HEI, which was a huge adjustment. This was exacerbated by the fact that there was no social interaction on campus. The respondents lamented that they missed human interaction – for example, the teacher in front of the class and making new friends. Moreover, they found navigating HE and the HEI very complex:

- Everything moved to an online platform where contact classes are not used, so it has been difficult to actually concentrate in class. (P1)
- The transition from high school and varsity was not bad, however I found it complex to make new friends and to adjust my finances. (P4)
- [The] workload and also the style of teaching [were difficult]. (P16)

The factors influencing students' fit for HE studies include academic and social integration, students' commitment to obtaining a university qualification, socio-economic status, and student loans. These factors vary from country to country and depend on the design of the admission system, funding sources, and curriculum structure. (Shcheglova et al., 2020). The importance of teaching quality and social life balance are extremely important to student expectations and satisfaction (Khan & Hemsley-Brown, 2021).

Ménard et al. (2021) stated that stress may be a salient issue for undergraduate students who must juggle a heavy workload, negotiate intense time management commitments, and adapt to new pedagogy. Student hardship and stress related to anxiety, depression, relationship concerns, family issues, academic performance, career worries, (Fusco, Sica, Parola, Sestito 2022), and relationship problems are typical issues for many students seeking psychological services on campus (McIlveen & Patton 2007).

When participants were probed on how they deal with these hardships and other HE teaching and learning stresses, it emerged that they were still coping with these stresses and using numerous methods to cope, such as exercise, sleep, and listening to music:

- I'm still dealing with it. (P1)
- Exercise, sleep and cry out my emotions. Lastly, I call [a support line on campus]. (P2)

In their study, Yzer and Gilasevitch (2019) reported that exercise was students' preferred active to reduce stress. Beliefs about exercise emphasised physical well-being benefits, but not having time for exercise was a stress enhancer. Students believe that asking for help for stress is multifaceted – it is about getting support from others (students and lecturers), the stigma attached to asking for help, and the time constraints wherein this assistance must happen. Furthermore, Ménard et al. (2021) stated that students use a variety of different coping strategies, including social support, self-care, hobbies, and problem-solving. It is also noteworthy to mention that different students experience stress differently (Ménard et al., 2021). There is a difference between students staying in residences compared to those staying at home, as well as between students studying different qualifications. Nevertheless, Galindo-Domínguez and Bezanilla (2021) opined that academic stress among HE students is not a new topic and seems to have an impact regardless of the country, culture or ethnic group. In recent years, HE students have reported higher levels of stress than previous studies that used the same measurement instrument. Moreover, depression and anxiety disorders among HE students is higher compared to the general population.

5. Practical implications

Several managerial/practical suggestions arose in this study. These are outlined below. High schools do not prepare students adequately for HE studies.

Action strategy 1

Greater awareness about HEI and their qualification offerings should be targeted at high school learners. This can be done by ensuring easy and understandable information is provided on institutional websites. This information should include payment plans / options, and specific careers that flow from qualifications.

Action strategy 2

HEI should send agents to visit schools and provide relevant information to learners. Learners should be provided with take-home pamphlets containing information and links to further information. HEI agents visiting schools should form part of the HEI overall awareness and marketing initiatives.

Students do not select qualification based on interest / skills and aptitude.

Action strategy 1

HEIs should use discipline-specific enrolment criteria for qualifications. Students should not be selected merely on their matric results for acceptance. This should alleviate any uncertainty from students on qualification choice and subsequent career opportunities.

Students find it hard to fit in on campus life or to navigate the HEI

Action strategy 1

HEIs should schedule mandatory and extensive first-year orientation. This initiative should include centralised functions like finances and de-centralised functions such as specific qualifications. The qualification orientation must reference career possibilities and the finance orientation must reference what it costs to be a student, and orientation on navigation through the institution. During such orientation, students must be exposed to various departments and centres of the HEI.

Students want to be assured that they have selected the right qualification.

Action strategy 1

HEIs should be flexible in cross-qualification movements, which will allow students to move from one qualification to another if interest is lost in their first choice. This movement, can alleviate the problem of students that find later in their studies, that they have lost interest or have found a better interest in another qualification.

6. Limitations and future studies

This research was conducted in a comprehensive university in the South African province of Gauteng. Further research using samples from other universities and colleges, including other subject domains, such as science, would present a more comprehensive picture of students' motivations and educational expectations. As per Curtis and Ledgerwood (2018), there are varying motivating factors between business and non-business students. It would be very interesting to determine if students studying professional qualifications, such as medicine, dentistry, and microbiology, have greater prior knowledge of their qualifications. Another future study could investigate what role secondary/high schools play in getting students fit for studies. This fitness should include alignment between student interest and qualification choice as well as accurate information on all matter financial. Moreover, a student-centred quantitative study, using a bigger sample could provide more insights.

7. Conclusion

This study investigated first-year students' general fitness for study at a HEI. It surveyed their academic view on this topic and the findings were all corroborated by previous studies. First-year students at a comprehensive HEI studying a commerce qualification are unfit for studies. The students did not base their choice for qualification on any scientific method, such as career guidance, nor any psychological intervention and rather used external motivators like money and recognition within their social circle as motivation for study. This method of choosing a qualification creates uncertainty later, as many students want to be assured that they have made the right choice. The results indicate that first-year students are unaware the financial obligation tied to HE studies and are surprised to discover the overall cost of being a student. First-year students find the transition from high school to HEI extremely stressful and full of uncertainty. It was found that first-year students are stressed, unfit, and finding it difficult to cope in this new HEI environment.

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The Influence of Globalisation and the Knowledge Economy on Postgraduate Education: a Policy Perspective

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Keywords

Postgraduate completion rate; Globalisation; Knowledge economy; burden of supervision

Abstract

Postgraduate education is considered a principle within the higher education context which depends on effective and efficient supervision of postgraduate students by supervisors. Nevertheless, massification and the necessity to improve educational access are acute anomalies facing postgraduate supervision. The primary objective of the reported research was to explore the influence of globalisation and the knowledge economy on postgraduate education within the South African context. The research was based on a policy analysis following a systems analytical approach as theoretical underpinning. Results indicated that globalisation and the knowledge economy influence postgraduate education on four levels, *inter alia*, micro-, meso-, macro- and supernational levels of complexity. Furthermore, four specific influences to a varying extent are related to quantity or access, transformation, efficiency and quality supervision. Since postgraduate education supervisors are the focal point in the postgraduate education discourse, it is pivotal at the grass root level to comprehend the forces that brought the massification into being and evaluate the way it has been implemented to achieve the stated purpose.

1. Introduction

Postgraduate education is considered critical as it provides higher education institutions with the opportunity to foster innate research capabilities, enhance the academic reputation and is a source of financial gain (Alam, Alam & Rasul, 2013). The previous authors further assert that the success and quality of postgraduate education largely depend on the effective and efficient supervision of postgraduate students (Alam et al., 2013). Frisch and Larson (2000) confirmed that effective supervision of research students is recognised as a pivotal success factor in completing postgraduate studies. Nonetheless, Cekiso, Tshotsho, Masha and Saziwa (2019) opine that the teaching-learning process is inadequately understood despite the keystone role of postgraduate supervision. For example, Lee and Murray (2015) alluded to a postgraduate supervisory framework which consists of five intertwined components, *inter alia*, (i) functional (i.e., project management); (ii) enculturation or epistemological access where students are encouraged to become members of the disciplinary community; (iii) critical thinking (i.e., students are encouraged to question and assimilate research findings); (iv) emancipation (i.e., students are stimulated to question and develop a professional identity; and (v) developing a supervisory relationship where postgraduate students are enthused, inspired and nurtured.

Current debates in postgraduate supervision discourse underscore different approaches (Bitzer & Albertyn, 2011), usage of coaching (Keane, 2016), facilitation and reflective practice (Kuwahara, 2008), technology usage (Rambe & Mkono, 2019), various modalities, for example, distance education (Manyike, 2017), and the influence of supervisory motivational values on postgraduate throughput (Callaghan, 2020). Similarly, Lee and Murray (2015) referred to a large body of work on postgraduate academic writing. Currently, massification in the face of scarce resources and the necessity to improve educational access are acute anomalies facing postgraduate supervision (Albertyn, Machika & Troskie-de Bruin, 2016). Akerlind and McAlpine (2017) contend that international policy directives currently prioritise increasing growth in the number of postgraduate students, notably doctoral candidates, as well as the prompt completion of studies within a three-to-four-year timeframe. . According to Alam et al. (2013), this results in enormous pressure on

supervisors and postgraduate students. Akerlind and McAlpine (2017) further argue that growing international attention on the public investment to expand postgraduate education has given rise to an extensive debate about the purpose thereof. Callaghan (2020), citing Mouton (2016), maintains that postgraduate education, specifically at the doctoral level, has been predisposed by four policy discourses, including the necessity for (i) quantity; (ii) efficiency; (iii) transformation; (iv) and quality. Mouton (2016) further asserts that this policy discourse finds expression in a complex system (i.e., higher education) of recursive causality and emergent properties. As such, a system can be defined as a structured entity comprised of components sufficiently interrelated and interdependent as to form a unit; higher education can influence the system on various levels of complexity by the hierarchy of systems (Jonck, Goujon, Woldegiorgis & Maloiy, 2019). Notwithstanding the complexity of postgraduate supervision and the stumbling blocks faced by South African academic staff, for example, the burden of supervision, postgraduate supervision appears to be comparatively efficient (Callaghan, 2020).

2. Problem Investigated

Lee and McKenzie (2011) asserted that internationally there is increasing pressure on higher education institutions with reference to the quality of postgraduate education underscoring accountability and completion rate. Within the South African context, the National Development Plan (2012) recommended that by 2030 institutions of higher education should produce more than 100 doctoral graduates per million citizenries annually, amounting to 5000 graduates. Botha (2009) opined that higher education institutions (HEIs) nationally are implored to increase epistemological access and postgraduate education output aimed at improving research skills and research-based knowledge. For the most part, the mentioned policy directive is driven by, for example, funding for HEIs in most countries, including South Africa is linked to the completion rate of postgraduate students (De Beer & Mason, 2009). However, the Council for Higher Education (CHE, 2019) vital statistics for the 2017 academic year indicated that 59 152 magister students enrolled with 12 951 graduating, reverting a completion rate of 21.89%. In the same vein, 22 572 doctoral students enrolled, with 3 057 graduating, reflecting a completion rate of 13.54%. The said trend persisted and could be identified in the 2019 data (CHE, 2021), which indicated that 62 157 magister students enrolled with 13 519 qualifications awarded, reverting a completion rate of 21.75%. In comparison, 24 386 doctoral candidates enrolled with 3 445 qualifications awarded with a completion rate of 14.13%. The Council for Higher Education (2021) furthermore reported that in 2019 there were a total of 55 742 academic staff employed at institutions of higher learning, with 14 991 academic staff possessing a doctoral qualification. Thus, 14 991 staff members from senior lecturer onward were responsible for supervising 86 543 postgraduate enrolled students (CHE, 2021). Essop (2020) indicated that the increase in doctoral enrolment was in accordance with the doctoral graduation rate, i.e., an annual average increase of 8.2%. Nevertheless, the disparity between the growth rate of academic staff and the headcount enrolments has given rise to the phenomenon termed the burden of supervision (Essop, 2020). Cekiso and colleagues (2019) confirmed that numerous postgraduate students fail to complete enrolled studies within the stipulated time because of, amongst other inexperienced or overburdened supervisors, inadequate candidate preparation, poor planning and management, methodological difficulties, insufficient financial support, strained student-supervisor relationship and ineffective infrastructure support for postgraduate education. While postgraduate supervision might be extensively researched in the context of effective supervision according to Petersen (2007), the question remains concerning the factors contributing to the increased postgraduate completion rate expectation and/or demand, especially considering the burden of supervision. Against the stated background, the research report aims to explore the influence of globalisation and the knowledge economy on postgraduate education as possible factors driving the increased postgraduate throughput demand.

3. Research Objectives

The primary objective of the reported research was to explore the influence of globalisation and the knowledge economy on postgraduate education within the South African context. The rationale underpinning the research subsume improved understanding at the grass root level with specific

reference to the drivers of postgraduate education ‘massification’ and the implications thereof for postgraduate supervision practice.

4. Policy environment

Jonck (2017: 65), citing numerous authors, stated that ‘*South Africa has set itself the unusual and challenging task of becoming a development state.*’ Thus, the ruling political party entrenched in promulgated legislation a conceptual understanding of South Africa as a developmental state grounded on four specific characteristics, *among other things*, the developmental state’s strategic positioning should be reflective of a people-centred approach, people-driven concentrating on fostering change, sustained development and restructuring of the economy and socio-economic inclusion (African National Congress, 2012). Furthermore, the developmental state ought to provide leadership in defining the shared national agenda and mobilising society to participate in the implementation thereof. Besides, the developmental state, in its organisational capacity, should guarantee that internal structures and systems enable the realisation of the national agenda (Jonck, 2021). To this end, Jonck (2017: 66) alluded to the Medium-Term Strategic Framework (Republic of South Africa, 2014), which articulated those graduates from the post-school system, i.e., HEI graduates ought to have adequate skills and knowledge to meet the current and extrapolated future needs of the economy and larger society. Furthermore, the necessity for socio-economic reform in South Africa and specifically the higher education landscape has been expressed in, among others, significant policy documents, including but not limited to The National Plan for Higher Education (DOE, 2001); A programme for the Transformation of the Higher Education System (White Paper 3) (DOE, 1997); Towards a New Higher Education Landscape: Meeting the Equity, Quality and Social Development Imperatives of South Africa in the 21st Century (CHE, 2000); and the National Development Plan (2012). Specifically, Essop (2020: 7), citing the White Paper of 1999, noted that:

“As our policy documents make clear, it is vital that the mission and location of higher education institutions be re-examined with reference to both the strategic plan for the sector and the educational needs of local communities and the nation at large in the 21st century”.

Expounding on the above, the White Paper on Higher Education (DOE, 1997: 3) asserted that “*to address the development needs of society and provide the labour market, in a knowledge-driven and knowledge-dependent society, with the ever-changing high-level competencies and expertise necessary for the growth and prosperity of a modern economy*” the higher education landscape must be transformed. The White Paper on Higher Education (DOE, 1997: 4) furthermore emphasised that the post-school system contributes towards the creation, sharing and evaluation of knowledge through, for example, research, learning and teaching. Thus, from a policy perspective, the knowledge economy has been identified as a driver of change. Moreover, the Department of Science and Technology (2008: 290) asserted that South Africa must increase the doctoral production rate by factor 5 over a 20-year period to build a knowledge economy positioned between developed and developing countries. Correspondingly, the Academy of Science of South Africa (ASSAF, 2010: 15) opined that there is a broad consensus in the South African science community that not enough high-quality doctoral graduates are being produced concerning the development needs of the country.

While the National Development Plan (2012) express the legislative intent about higher education transformation as follows (NDP, 2012: 296): “*Lifelong learning, continuous professional development, and knowledge production alongside innovation are central to building the capabilities of individuals and society as a whole.*” Furthermore, the NDP (2012: 317) set a target of one in six South Africans must be university graduates, which is the strongest indicator of expanding access to university education. The National Development Plan (NDP, 2012) was promulgated in 2012 by the South African Government as a roadmap toward socio-economic transformation, including in the higher education sector. The NDP (2012: 317) identified higher education as the major driver of information and knowledge systems that contribute to economic development. More specifically, the NDP can be seen as a long-term modus operandi aimed at eradicating poverty and decreasing inequality by 2030 while uniting citizenry, unleashing intrinsic vitality, fostering economic growth and an inclusive economy, developing individual capabilities, and enhancing the capability of the state (Jonck, 2021

citing National Planning Commission, 2012) thus contributing towards the achievement of the national agenda.

5. Literature review

Woldegiorgis, Jonck and Goujon (2015) expound that major economies are knowledge-based in the current epoch of globalisation, embodied by elevated levels of skills, education, lifelong learning, and innovation. While globalisation continuously emphasise the expanding tendencies of interconnectedness and interdependency, mobility of citizenry, ideas and capital gains prominence among nations (Jonck *et al.*, 2019). Jonck (2014), elaborating on research conducted by Goujon, Lutz and Wazir (2011) explained that knowledge and skill endowment, rather than physical capital, determine a country's labour force progress (i.e., economically as well as at a societal level) and hence a country's ability to compete in the world economy. Moreover, globalisation has influenced the higher education sector, giving rise to a concern for quality and relevance beyond national borders ascribed to mobility, graduate employability, transferability of credits, and cross-border comparability of qualifications (Woldegiorgis *et al.*, 2015). Specifically, the international demand for specialised skills and innovative research attributed to globalisation, continuous change in competitive markets, management and services, design and development has forced HEIs to produce more postgraduate students (Alam *et al.*, 2013). The rationale underpinning the increased demand for postgraduate graduates is based on the association between economic prosperity and citation intensity, which is linked to research outputs. Hence, HEIs are advised to emphasise knowledge outputs substantially to compete with developed countries in a globalised knowledge economy (ASSAF, 2010). Regarding the national agenda, the NDP (2012: 324) has identified globalisation as a significant trend driving change within the South African context, notably the education sector.

The NDP (2012: 13) defines globalisation as a promulgated policy directive as: “*rising global trade and increased flows of people, capital, ideas and technologies across border.*” The NDP (2012: 76) further noted that while globalisation provided enormous benefits, including a reduction in poverty and greater social integration, a failure to curb financial, technological and social threats associated with globalisation poses a substantial risk. Similarly, the NDP (2012: 95) made mention of the unintended consequences of globalisation subsuming the increased pressure on the government to re-structure global institutions to novel realities and to promote a more equitable global order. Specifically, in the educational context, the NDP (2012: 324) advised private and public institutions to collaborate to foster educational infrastructure pre-requisite to support a thriving economy since the globalisation of skilled labour and technological markets necessitate educational systems to function across national borders and sectors. Mainly, globalisation requires economic activities founded on new knowledge stimulating economic growth, providing higher wages and more employment opportunities. However, aforesaid depends on novel technology investments, high-technology industries and skills labour which are deemed essential ingredients of a knowledge-based economy (Blankley & Booyens, 2010).

McKenna (2021: 97), expounding on the relationship between skills, the economy and higher education, opine that the knowledge economy can be defined as the idea that the economy advances through knowledge development. The principal to the notion of a knowledge economy is that knowledge and education are deemed productive assets that can be leveraged for a high investment return. Boughey, Van den Heuvel and Wels (2017) noted that the need for South Africa to engage with the globalised knowledge economy has recently been paramount. Intrinsically, the economies of developed countries have increasingly evolved into knowledge-based economies, depending less on traditional resources, for example, capital and labour, for economic development (Blankley & Booyens, 2010). Despite this, Jonck (2014), reflecting on research by Guile (2006: 364), noted that the knowledge economy had been ‘under-theorised’, resulting in policies that reflect a paucity of clarity about the type of knowledge required and how such knowledge should be acquired. Certainly, knowledge economy indicators which indicate a country's status quo plays a pivotal role in policy debate however, a standard set of indicators for the knowledge economy is absent. Suggested international comparable knowledge economy indicators subsume research and development (R&D), innovation and information society (Blankley & Booyens, 2010). Nevertheless, the NDP (2012)

articulation of South Africa's long-term vision supports the notion of a knowledge economy vis-à-vis a resource-intensive economy (Jonck, 2017).

As such, the NDP (2012: 144) opine that sectors and clusters that might avail South Africa with a competitive advantage should be promoted to transition to a knowledge economy and optimal utilisation of information and communication technologies. Pursuantly, the NDP (2012: 157) stive for a “*greater emphasis on innovation, improved productivity, intensified pursuit of a knowledge economy and exploitation of comparative and competitive advantages*” approaching 2030. Moreover, it is envisioned that information and communication technology would underpin the development of a dynamic and connected information society indicative of an inclusive and prosperous knowledge economy (NDP, 2012: 190). Consequently, per the national agenda for South Africa to become a participant in a globalised knowledge economy, the quality and quantity of postgraduate education should significantly improve which necessitate quality inputs (i.e., supervision, infrastructure, and enabling environment, to mention a few) and quality outputs referring to the postgraduate production rate (Boughey *et al.* 2017). Hlengwa (2017) confirm this assertion by indicating that South Africa is obligated to increase the number of doctorandi, enabling the country to develop its knowledge economy.

Against this background, globalisation and the knowledge economy have been identified from promulgated policies and legislation supported by the corpus of knowledge as key drivers that influence postgraduate education. Though, the way and or extent to which the mentioned drivers influence postgraduate education remains a topic that needs to be explored from a policy perspective.

6. Theoretical underpinning

Mouton (2016) elucidated that higher education policy discourse finds expression in a complex higher education system. Hence, complex systems theory has been selected as a theoretical underpinning. Frei (2011) argues that the rationale for utilising complex systems reasoning with reference to educational structures is founded on the supposition that societies are becoming increasingly complex and interrelated especially considering globalisation. For the sake of clarity, a complex system refers to a structure as a complete-part unit where the influence supersedes linearity (viz. causality), and parts are interdependent (Roth, 2017). Hypothetically, the higher education system as an example of a vertical hierarchal system, can theoretically subsume micro-, meso-, macro- and supranational levels of complexity (Jonck *et al.*, 2019). At the micro level of complexity representing the individual, access to higher education facilitates job opportunities as the unemployment rate for higher education graduates is significantly lower compared to secondary education (Gwatirera, 2018). On the meso level of complexity or at a societal level, higher education is an imperative enabler for previously disadvantaged with reference to transforming the disempowered's economic, socio-psychological, political and legal status (Jonck *et al.*, 2019). At a macro level, higher education is a veritable instrument for national development. Hence, higher education is deemed a principal method for imparting skills relevant to the individual's contribution to national development (Erdem & Tugcu, 2012). Lastly, in the context of globalisation and the knowledge economy, reciprocal relationships between countries' higher education systems represent the supranational influence of higher education (Nafukho, Muya & Irby, 2014).

7. Research Methodology

A qualitative descriptive research methodology was implemented to explore the research question viz. the influence of globalisation and the knowledge economy on postgraduate education. Qualitative research can be defined as an approach aimed at understanding the processes and context which outline various phenomena (Wagner, Kawalich & Garner, 2012). Whereas the main objective of a descriptive study is to elaborate on a topic as accurately as possible at a specific point in time (Jonck, Le Roux & Hoffman, 2012). Within a higher education context policy is pivotal as it determines the resources allocated for educational endeavours (Razik & Swanson, 2001), hence a policy document analysis was implemented. Policy document analysis is believed to be a practical tool which can also be adopted as a qualitative research method (Cardno, 2018). The previous author furthermore elaborates by emphasising the importance of policy analysis for higher education subsuming

providing information about the forces that brought it into being, the policy history to comprehend how the policy was constructed as well as evaluate the way it has been implemented to achieve the stated purpose (Cardno, 2018). Influential authors such as Bell and Stevenson (2006) and Busher (2006) gave rise to a contemporary conceptual framework for policy analysis, which includes analysing policy from three perspectives, namely context, text, and consequences. The policy text is the content of the policy document and analyses the identified policy in accordance with the purpose, values and characteristics underpinning the mentioned (Cardno, 2018). The selected research design was operationalised by means of thematic content analysis of the identified data source, i.e., the National Development Plan. Thematic analysis is considered a qualitative descriptive method aimed at identifying, analysing and reporting themes within a data source. In comparison, content analysis embodies a systematic coding and categorisation to explore textual information toward determining trends, patterns, and the structure of narratives (Vaismoradi, Tutunene & Bondas, 2013). Therefore, the purpose of the thematic content analysis was to identify and describe trends related to postgraduate education discourse in the NDP in terms of identified themes, namely globalisation and the knowledge economy utilising a complex systems theory approach to analyse and interpret the data.

Research design implementation was following the corpus of knowledge relating to qualitative content analysis. Considering the delimitation of the topic, confinement of the study to a singular data source, and the specific purpose of the analysis, sampling was not performed (see, for example, Pietersen, 2018). During the data analysis process, subthemes emerged and were presented sequentially per theme in the findings. Findings were integrated with relevant theory and followed overleaf by concluding remarks. A qualitative content analysis of a policy document was employed in the research project; hence no interaction with human participants or animals occurred. Furthermore, the NDP (2012) has been published on a public platform adhering to the POPI Act requirement.

8. Results and Findings

In accordance with the theoretical underpinning, i.e., vertical hierarchal complex systems approach the influence of globalisation, and the knowledge economy was analysed at various levels of complexity, namely micro-, meso-, macro- and supranational levels. Specifically, data analysis was conducted on Chapter 9 of the NDP (2012) which refers to improving education, innovation and training. Take note, that a data excerpt is included for all sub-themes following accepted practice in qualitative research.

8.1 Sub-theme 1: Micro level

Access to higher education is deemed a micro-level influence. Per se, the NDP (2012: 317) noted that *‘in 2030, one in six people [citizens] will be a university graduate. This is one of the strongest indicators of expanding access to university education.’* Furthermore, the NDP (2012: 319) propose the following in terms of access:

‘Increase the participation rate at universities by at least 70 percent by 2030 so that enrolments increase to 1.62 million.’

‘Increase the throughput rate for degree programmes to more than 75 percent’

‘Increase the number of masters and PhD students. [...] By 2030, over 25 percent of university enrolments should be at postgraduate level.’

‘Produce more than 100 doctoral graduates per million per year by 2030.’

‘South Africa needs more than 5 000 doctoral graduates per year.’

The NDP (2012) also notes on a micro level that the qualifications of higher education academic staff should be improved, fostering individual career opportunities and personal development. Thus, *‘South African needs to increase the percentage of PhD qualified staff in the higher education sector from the current 34 percent to over 75 percent by 2030’* (NDP, 2012: 319).

8.2 Sub-theme 2: Meso level

At a societal level, the NDP (2012) noted that previously disadvantaged groups should be promoted within the higher education milieu with specific reference to gender and race. As such, the NDP (2012: 319) indicated that women and black Africans should make out more than 50% of research and academic staff. More specifically, *‘double the number of postgraduates and postgraduate scientist and increase the number of African and women postgraduates, especially PhDs, to improve research and innovation and make university staff more representative.’*

8.3 Sub-theme 3: Macro level

At a macro level, the NDP (2012) identified higher education as a major driver of the knowledge system linked with economic development. Hence, the NDP (2012: 317) opine that *‘higher education is the major driver of information and knowledge systems that contribute to economic development.’* It is, furthermore, argued that HEIs are pivotal to developing South Africa with specific norms and standards identified, including (NDP, 2012: 318): (i) providing high-level skills; (ii) dominant producers of novel knowledge, critiquing information and finding novel applications for existing knowledge; and (iii) providing an opportunity for social mobility. Specifically, regarding finding novel applications the NDP (2012: 297) explained that *‘higher levels of education, skills, research and innovation capacity are required for developing new and utilising existing technologies.’* Also *‘the pool of researchers [postgraduates with doctoral qualifications] needs to expand and their productivity needs to increase significantly. Innovators are going to play a critical role in creating new products and new ways of producing existing products cheaply and more efficiently’* (NDP, 2012: 297). When considering the role of higher education with specific reference to skills, the NDP (2012: 316) expound that HEIs should *‘respond to the skills needs of all sectors of society including business, industry and the government.’* Hence, HEIs should respond to the need for scarce skills with a closer link between the economy and educational planning. For example, the NDP (2012: 315) specified that *‘accelerating economic growth requires science, technology, vocational and technical skills, and they need to be produced quickly.’* Furthermore, the NDP (2012: 317) proposed that by *‘2030, graduates must be in the critical skills categories, such as engineering, actuarial science, medicine, financial management, and chartered accountancy.’*

As such, higher education programmes and initiatives should address national priorities. Fore stated is articulated in the NDP (2012: 318) as *‘universities should define their niches to enhance their ability to contribute to national objectives.’* The NDP (2012) likewise indicated that higher education should have a coherent national agenda promoting innovation and knowledge production. Per se, the NDP (2012: 315) proposes the higher education system should be an *‘expanded, effective, coherent and integrated system.’*

8.4 Sub-theme 4: Supranational level

In terms of the supranational level of influence, the NDP (2012) references labour market research to comprehend the human-capital and skills required for the knowledge economy. Postgraduate education is furthermore necessary to address the global climate crisis. As such, the NDP (2012: 297) noted that: *‘higher levels of education, skills, research and innovation capacity are required for the transition to a low carbon economy and meeting the greenhouse gas emission target.’* Moreover, postgraduate education should also contribute to tackling health challenges considering the COVID-19 pandemic are supranational. The NDP (2012: 297) indicated that *‘higher levels of education, skills, research and innovation capacity are required for tackling health challenges.’* At a supranational level, it is furthermore recommended that HEIs should *‘develop partnerships to play a strong role in regional initiatives’* (NDP, 2012: 316). The supranatural influence of higher education is evident in the assertion that *‘the academic profession requires renewal if South African universities are to expand, compete and drive the knowledge society and economy’* (NDP, 2012: 317).

9. Postgraduate supervisory implications

Ascribed to the fact that postgraduate supervisors are for the most part the focal point in the postgraduate education discourse it is pivotal at grass root level to comprehend the forces that brought

the policy directive into being (i.e., globalisation and the knowledge economy), the policy history to comprehend how the policy was constructed as well as evaluate the way it has been implemented to achieve the stated purpose (Cardno, 2018). Stipulated postgraduate completion rates have significant consequences for individual supervisors supporting the contention by Akerlind and McAlpine (2017) that growing international attention on the public investment to expand postgraduate education has given rise to an extensive debate about the purpose thereof. Understanding the purpose of the ‘massification’ of postgraduate education could assist individual supervisors specifically with the ‘burden of supervision.’

10. Conclusion

The primary objective of the research was to explore the influence of globalisation and the knowledge economy on postgraduate education within the South African context to improve understanding at grass root level with specific reference to the drivers of postgraduate education ‘massification’ and the implications thereof for postgraduate supervision practice. Fore stated was implemented based on a complex systems theoretical approach, and it was deduced that in practice, the influence could be seen on four levels of complexity, including micro-, meso-, macro- and supranational levels of complexity. Furthermore, the results support research by Mouton (2016), which maintained that postgraduate education, specifically at doctoral level, has been predisposed by four policy discourses, including the necessity for (i) quantity; (ii) efficiency; (iii) transformation; (iv) and quality.

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The Implementation of AI-Driven Solutions in Warehousing: A Semi-Systematic Literature Review

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Keywords

Artificial Intelligence;
Warehouse
management;
Warehousing; Industry
4.0

Abstract

Background: Artificial Intelligence (AI) has gained prominence in the logistics industry and academic discourse. Various applications of AI play an essential role in propelling transformation in warehousing. However, in the research literature, it is not yet clear which warehousing processes have benefited or improved the most due to AI-driven solutions.

Purpose of the study: This article reports on a semi-systematic literature review (SSLR) on implementing AI-driven solutions in warehousing. We show that different types of AI-driven solutions have impacted warehousing processes in various ways.

Design/Methodology/Approach: the study adopted an SSLR method and employed six steps for conducting the review. The first step involved identifying the review question and developing a search strategy for the second step. The third step involved determining the criteria for inclusion and exclusion concerning the research objectives. The fourth step involved conducting a critical evaluation of studies included in the review, followed by data extraction as the fifth step. The final step involved data analysis.

Results/Findings: The study identified the following five AI-driven solutions implemented in warehousing: AI-powered warehousing robots, unmanned warehouses, intelligent picking operations, automated guided vehicle systems, and facial recognition technologies. Also, the following warehousing processes were affected by AI implementation: receiving, storage, sorting, inventory management, material handling and order picking.

Managerial implication: Insights are provided into how AI-driven solutions are implemented in different warehousing processes. This should help managers in identifying improvement opportunities in warehousing.

1. Introduction and background to the study

The fourth Industrial Revolution (also known as 4IR or Industry 4.0) is increasingly acknowledged by researchers and organisations worldwide as a critical propeller of a technological revolution in logistics (Shi, 2014; Holubčík, Koman & Soviar, 2021). Industry 4.0 presents numerous opportunities for the logistics industry as it enables quick and flexible responses to the changes that are happening using Artificial Intelligence (AI), transparent processes, and continuous supervision (Schelechtendal, Keinert & Kretschmer, 2015). Essentially, Industry 4.0 represents improved automation in different parts of logistics allowing for seamless integration of physical items into a network of information. According to Schelechtendal et al. (2015), there are numerous pillars of Industry 4.0, namely, AI, Big Data, Internet of Things, Autonomous Automation, Machine Learning, Expert Systems, Deep Learning, Data Mining, Genetic Algorithms, Artificial Neural Networks (ANN), Fuzzy Logic and Natural Language Processing (NLP).

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AI is a technological innovation that imitates human brainpower using computer-aided robots, language processing, voice recognition technology, and expert systems (Shi, 2014). Conventional computers function by using programming instructions, whereas AI entails technological tools that change a pre-programmed system into a completely unique system that seeks to remove all programming components required to consistently provide new directions to machines (Li, 2013). AI essentially, therefore, entails sophisticated software engineering focused on developing programmes that can function autonomously without human control and direction (Danielsson & Ekströmfound, 2018). AI applications can think independently and self-rely (Amirkolaii, Baboli, Shahzad & Tonadre, 2017; Li, 2019). Therefore, AI is a broad term used to describe computerised methods, which aim to process and store information, create reasoning and self-learning and decision making that enables machines to be smarter and require less human intervention (Hellingrath & Lechtenberg, 2019). AI can also be defined as a mixture of technological processes that concurrently aim to imitate the human mind's reasoning process and create an arrangement of computational processes that aim to provide solutions to previously impossible problems (Shi, 2014). It entails various procedures such as evolutionary programming and artificial neural networks (Dirican, 2015). Generally, AI can be categorised into two distinctive groups: symbolic intelligence, which involves expert systems based on knowledge, and case-based reasoning (Adeniran, 2016).

Exploring AI can be an elaborative task since it has many groups and subsets (Amirkolaii et al., 2017). Some subsets of AI include big data, NLP and machine learning (Amirkolaii et al., 2017). Four essential AI applications exist: reactive machines, limited memory, theory of mind, and self-aware machines (Canhoto & Clear, 2020). Executives from the logistics sector have argued that the field of logistics is going through a substantial revolution (Hellingrath & Lechtenberg, 2019) essentially enabled through Industry 4.0 technologies. Relative to other Industry 4.0 technologies, AI has gained more prominence in the logistics industry and academic discourse (Hellingrath & Lechtenberg, 2019) and globally, the adoption of AI in logistics management is increasing at a fast pace (Canhoto & Clear, 2020). Potential is seen in using AI to provide advanced technological capabilities suitable for improving logistics systems (Li, 2019). A key factor driving the popularity of AI in the logistics sector is its potential to enhance efficiency in logistics activities through automation (Kohtamäki, Parida, Oghazi, Gebauer & Baines, 2019). Dirican (2015) argues that AI also provides higher accuracy in problem-solving. AI is not an emerging field of study in academia (Dirican, 2015); nevertheless, research has only recently shown that AI can be applied in various areas of logistics (Dirican, 2015; Kohtamäki et al., 2019).

Warehousing can be explained as a logistics system element fulfilling an essential role in the integration of critical value-adding supply chain processes, including procuring materials or components, conversion thereof into finished products, and the distribution to customers (Akerkar, 2019). Warehousing plays a significant role in creating customer service through the optimisation of distribution and product availability (Almada-Lobo, 2016) and is considered a (2013), element of contemporary supply chain management (Faber, de Koster & Smidts, 2013). A warehouse performs the critical task of ensuring a continuous and uninterrupted movement of products, strengthening collaboration with other stakeholders in the supply chain, and integrating modes of transport (Bukova, Brumerickova, Cerna & Drozdziel, 2018). An essential task of warehouse management is to ensure the effective movement of items in a warehouse (Lu, McFarlane, Giannikas & Zhang, 2016). It is, therefore, essential to understand every one of the critical functions of a warehouse to minimise failures and losses in the organisation and ultimately satisfy customer requirements (Pyza, Jachimowski, Jacyna-Gołda & Lewczuk, 2017).

Key warehousing processes include receiving, storage, sorting, inventory management, material handling, order picking and shipping of goods. Receiving is the first warehousing process which begins with the notifications of goods' arrival (Kaplan & Haenlein, 2020). The following steps include unloading goods from a vehicle, counting and identifying items, performing quality control and accepting goods into the warehouse (Dirican, 2015). The receipt is given once the goods are accepted into the warehouse. The accepted goods are marked and documented in the information system and prepared for storage (Dirican, 2015). Storage is another warehousing process responsible

for consolidating goods kept in the warehouse to ensure efficient use of space and effective material handling (Pyza et al., 2017). For effective storage, companies may organise goods within a warehouse according to the physical features of goods or to accommodate material handling equipment (Kaplan & Haenlein, 2020).

Sorting is a warehousing process that entails grouping goods according to their features and assigning them a suitable storage location according to those features, along with systematic recordkeeping (Ben-Daya, Hassini, & Bahrour, 2017). Material handling is another crucial warehousing process involving moving, protecting, storing, and controlling materials and finished products using manual, semi-automated, and fully automated equipment and systems that ensure efficiency throughout warehousing (Barata, Rupino Da Cunha & Stal, 2017). Material handling is one of the costly processes since it requires high investment in resources such as equipment, labour, facilities and capital (Kohtamäki et al., 2019). Therefore, the warehouse managers need to ensure that the material handling process adds value to warehousing to justify the costs incurred. Usually, material handling in a warehouse is associated with the movement of goods and storage (Barata et al., 2017).

Another critical process carried out in a warehouse is order-picking. This involves selecting the products ordered by customers from where they are stored (Garcia-Herreros, Agarwal, Wassick & Grossmann, 2016; Pandian, 2019). They define order picking (also known as retrieval) as the process whereby a set item is selected, retrieved from the storage area, and transported to a sorting or consolidation process of order fulfilment (Chen, Wang, Xie & Qi, 2016). These picked orders are then sorted into customer orders. This activity is called accumulation, and it is an essential process, especially when order-picking is done in batches (Wagner & Bode, 2013). In such circumstances, once the picking process is completed, the picked items must be assembled by customer order. Usually, orders need to be packed and stacked on the appropriate unit loads, such as pallets (Garcia-Herreros et al., 2016; Deepak, 2015).

Inventory management is a warehousing process that includes receipt, storage and tracking of inventory in a warehouse facility; staff management; cost and storage space optimisation; all of which has a direct impact on order fulfilment and customer service (Bukova, Brumerickova, Cerna & Drozdziel, 2018). An effective inventory management system is key to efficient warehousing management (Kaplan & Haenlein, 2020) since it allows companies to make an informed decision on what to buy, in what quantities, and when to buy it (Barata *et al.*, 2017). This ensures a balance in demand and supply and no overloading of a warehouse, eliminating unnecessary inventory holding costs and reducing lead-times due to delays in delivery. While it is true that storing any quantity of products in a warehouse will lead to storage costs, inventory and warehousing management systems can help with controlling and reducing these costs (Amirkolaii *et al.*, 2017). This includes calculating the exact amount of stock of items a company must keep (Amirkolaii *et al.*, 2017).

The last process of warehousing is shipping. Shipping is a process that includes determining transport destinations for packed consignments, assigning a delivery truck, and ultimately loading goods to the truck (Kohtamäki et al., 2019).

AI can generate the necessary knowledge and intelligence to ensure effective and efficient management of all warehousing activities (Dubey, Gunasekaran, Childe, Bryde, Giannakis, Foropon & Hazen, 2020). By adopting AI, companies can gain a new understanding of the impact of specific warehousing processes on overall performance (Dubey et al., 2020). This will help managers to plan properly and prioritise resources (Kaplan & Haenlein, 2020; Toorajipour, Sohrabpour, Nazarpour, Oghazi & Fischl, 2020; Kwak, Bae & Cho, 2014). Although AI is not a new concept in academia, the adoption of AI in warehouse management is still in a nascent phase (Kwong, Jiang & Luo, X, 2016). Recent studies on AI have suggested significant opportunities for applying AI technology to resolve problems in warehousing (Küfner, Uhlemann & Ziegler, 2018). However, it is unclear which types of AI implementations have been done successfully in warehousing and which of the technology's key warehousing processes have been supported. This research aims to identify examples of AI implementation in warehousing using a semi-systematic literature review (SSLR) approach.

2. Problem statement and research objectives

Although the implementation of AI has been examined in several studies (Jarrahi, 2018; Kaplan & Haenlein 2020; Nishant, Kennedy & Corbett, 2020; Ransbotham, Kiron, Gerbert & Reeves, 2017; Abdirad & Krishnan, 2020; Sutherland, 2019; Soni, Sharma, Singh & Kapoor, 2020; Gligor, Dumitru & Grif, 2018; Kearney, Chan, Valdes, Solberg & Yom, 2018; Klumpp, 2018; Ransbotham, Kiron, Gerbert & Reeves, 2017; Rekha, Abdulla & Asharaf, 2016) it is still unclear which warehousing processes are most likely to benefit from AI-driven solutions in terms of improving overall performance (Wang, Xiong & Olya, 2020). Existent studies on the implementation of AI in warehousing primarily focused on one or a limited number of applications (refer to Table 1 for relevant studies). No study was found focusing on the spread of AI implementations in warehousing. To address this gap in the research literature, an SSLR on the implementation of AI in warehousing was conducted to bring together key findings from the different studies, which are helpful for practitioners and researchers in the field of logistics and should also provide a starting point for further research.

Table 1: An overview of relevant existing studies

Name (s) and year	Title	Focus areas
Yang, J.X., Li, L.D. & Rasul, M.G. 2021	“Warehouse Management Models Using Artificial Intelligence Technology with Application at Receiving Stage – A Review”	The study focuses on AI applications in warehousing but is limited to a focus on the receiving part of overall warehousing processes.
Xinke Du, 2020	“Research on the Artificial Intelligence Applied in Logistics Warehousing”	This article deals with the applications of AI in warehousing and analyses the limitations of AI adopted in developing a smart warehouse. Although the study provides some applications of AI in warehousing, the study only focused on the material handling and storage parts of warehousing.
Pandian, A.P. 2019	“AI application in smart warehousing environment for automated logistics”	In this study, the implementation of AI is limited to the storage part of the overall warehousing processes.
Wu, Y. & Ge* D, 2019	“Key Technologies of Warehousing Robot for Intelligent logistics”	This research focuses on the application of an Intelligent Warehousing Robot with a specific focus on the Kiva system. The study also discusses the technical composition of intelligent warehousing robots (such as location and navigation, Mechanical structure, Robot

		<p>management system, and AI algorithms). In this study, the implementation of AI is limited to the material handling aspect of warehousing and it does not explore a broad application across various warehousing processes.</p>
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Source: Own compilation

This review aims to report on the findings of an SSLR on the implementation of AI-driven solutions in warehousing. This will improve knowledge in this area and help managers identify improvement opportunities for their warehousing processes.

The primary research objective is:

1. To determine how AI-driven solutions are implemented in warehousing

The secondary objectives are:

1. To determine which AI-driven solutions are implemented in warehousing
2. To establish which warehousing processes are affected by the implementation of AI.

3. Research methodology

The SSLR method adopted in this study is used in research studies that do not claim to undertake a systematic review of literature in a given field (Wong, Greenhalgh, Westhorp, Buckingham & Pawson, 2013). Wong et al. (2013) maintain that a systematic literature review is “a comprehensive, protocol-based review and a synthesis of research focusing on a chosen topic or on defined research questions”. In this study, the literature review does not comply with all systematic review guidelines, but only some of them. To be precise, the study met the systematic review guidelines such as design and search terms documentation, using a relevant database, analysing several papers, documentation of the papers included in the review for each search term, and the adoption of clear criteria for inclusion and exclusion. A systematic literature review guideline that was not met is that of ensuring that numerous authors evaluate the papers and conduct a thorough quality assessment of the research and data collection and analysis. Therefore, an SSLR was applied. Additionally, the research questions are broad, and the analysis is qualitative.

This SSLR has adopted a descriptive, narrative review method. A descriptive review aims to examine the nature of the literature concerning a particular research objective, concept, or research area (Xiao & Watson, 2019). It explains the literature when a review is conducted (Xiao & Watson, 2019). A narrative review is the most popular type of descriptive review as it is less costly and time-consuming than other types (Xiao & Watson, 2019).

This SSLR has employed six generic systematic review steps suggested by Paré, Tate, Johnstone and Kitsiou (2016). The first step entails defining the plan for the review, followed by searching the literature as the second step. The third step involves determining inclusion and exclusion criteria based on their relevance to the current study or containing topics relevant to the research objectives (i.e. AI-driven solutions are implemented in warehousing and the warehousing processes affected by the implementation of AI). The fourth step involves conducting a critical evaluation of studies included in the review, followed by data extraction as the fifth step. The final step involves data analysis.

3.1 Step 1: Review Plan

As suggested by Paré et al. (2016), a review plan entails (i) creating a review question, (ii) choosing the review type and method to be used, and (iii) formulating a protocol for the review. The following sections outline these steps:

Review question: this step aims to identify the review question. This study aims to answer the following main review question: How are AI-driven solutions implemented in warehousing? The

secondary objectives are to determine which AI-driven solutions are implemented in warehousing and to establish which warehousing processes are affected by the implementation of AI.

Type and method of review: this review employs a theory-building or developmental type (Templier & Pare, 2015) as it aims to create a typology of technologies implemented in warehousing with AI features and the warehousing processes affected by the implementation of AI.

Review Protocol: A review protocol is a detailed outline of the processes to be adopted when conducting the review, and it aims to improve the trustworthiness of the findings (Moher, Shamseer, Clarke, Ghersi, Liberati, Petticrew & Group, 2015). A review protocol entails developing a research question that will guide the review, directing the data used in the search strategy and inclusion/exclusion criteria (Berger, Denner & Roeglinger, 2018; Ertel, 2018). After developing a focused question and writing the review aim, the next stage is to design the search strategy. Designing a search strategy is one of the fundamental components of the review protocol since it allows the reviewers to locate, choose, analyse and use the information. Creating search terms and keywords is the next stage in writing a review protocol. This could include examining critical research on the topic of interest to determine common words used in the literature to ensure that search terms are focused on the study purpose (Paré et al., 2016; Rowe, 2014). The following steps in the review protocol include developing criteria for inclusion and exclusion, data extraction, and data analysis methods. Review protocols encourage reviewers' consistency and minimising data ambiguity (Moher et al., 2015).

3.2 Step 2: Search strategy

Initially, publications were searched, sorted, acquired, and read (Boell & Cecez-Kecmanovic, 2014). By reading thoroughly, new keywords and concepts emerged and probing proceeded. Lastly, this iterative process started to pinpoint relevance in the existing literature. The preliminary search aimed to consolidate relevant current academic articles to achieve the research objectives. This was done by searching academic peer-reviewed journals, including Association for Information Systems (AIS) journals including Information Systems Research, Journal of Management Information Systems, MIS Quarterly, and Journal of the Association for Information Systems and Information Systems Journal. This ensured that only academic studies were included in the review. To identify key AI-driven solutions and explain how these technologies are implemented in warehousing, the following search terms were used to search titles, abstracts and keywords of academic journals: (“warehousing” or “warehouse management”) and (“Artificial Intelligence” or “Machine Learning” or “Deep Learning” or “AI”). The researchers searched peer-reviewed academic journal articles and conference papers published between 2013 and 2021 to obtain relevant content given the time-sensitive nature of the technology focused on in the study (Boell et al., 2014).

An SSLR was conducted in Science Direct, Research Gate and Google Scholar databases of relevant academic articles published before August 2021. Science Direct is one of the most prominent platforms for obtaining research and hosts more than 12 million items of works from 3500 research journals and 34 000 e-books (Enughwure & Febaide, 2020). Google Scholar and Research Gate are prominent social platforms used by researchers, scholars, scientists, and research students to disseminate, collaborate and exchange research work and knowledge (Enughwure & Febaide, 2020).

3.3 Step 3: Determination of inclusion/exclusion criteria

It is essential to have inclusion/exclusion criteria since these set limits for conducting a review by determining which research papers are likely to form part of the review and which ones are not relevant to the current study (Stern, Jordan & McArthur, 2014). Moreover, having criteria for inclusion/exclusion assists in mitigating any reviewer's personal bias. Inclusion and exclusion criteria also ensure that a study is included based on predetermined, substantiated principles, instead of being only of interest to the reviewer. The reviewer needs to find an equilibrium between having too specific or narrow inclusion criteria that might eliminate relevant studies and having too broad criteria that include irrelevant studies. Hence, it is essential to justify a chosen inclusion criteria based on the review requirement. Table 2 provides the inclusion criteria for this review.

Table 2: Inclusion and exclusion criteria

Criteria	Justification
Studies published between 2013 and 2021 (academic papers published within this period)	There has been rapid development of AI solutions in recent years, followed by numerous studies on the implementation of AI in warehousing (González-Calatayud, Prendes-Espinosa & Roig-Vila, 2021). Studies published before 2013 were excluded to ensure that contemporary practices and philosophical points of view are examined in the review.
Studies examining the implementation of AI-driven solutions in warehousing	The implementation of AI must relate specifically to warehousing and it must be the primary aim of the study. Any studies which focus on AI implementation in other logistics functions other than warehousing were excluded since they are not in line with the research objectives.
Studies examining warehousing processes that are impacted in the AI implementation	The review only included studies that focused on different warehousing processes that are included in the implementation of AI-driven solutions. Studies examining other supply chain activities other than warehousing functions were excluded.
Research studies published in the English language	The SSLR only included research studies published in English and not in other languages due to limited resources to translate and include them.

Source: Own compilation

Journal articles were selected if they were relevant to or contained information regarding: (i) AI-driven solutions, (ii) AI driven-solutions adopted or implemented in warehousing, (iii) the warehousing processes affected by the implementation of AI-driven solutions, or (iv) a mixture of the three. The researchers read all topics and abstracts of journal articles and conference papers to select the relevant papers. Where there were no abstracts, the researcher read the introduction. The review did not include research irrelevant to these four points of the study.

3.4 Step 4: The critical evaluation

The critical evaluation aims to assess the research for rigour and to make sure it is not affected by any methodological issues which might influence the validity and quality of the review findings. Critical evaluation is also necessary to assess whether the authors' findings represent the participants' views and experiences. In this study, the Critical Appraisal Skills Programme qualitative checklist (CASP; CASP International Network, 2013) was used for critical appraisal. The CASP appraisal tool considered three broad issues: are the research findings valid? What are the study findings? How will the findings help locally? A checklist of ten questions to make sense of the qualitative study was used to answer these questions. The checklist questions are as follows:

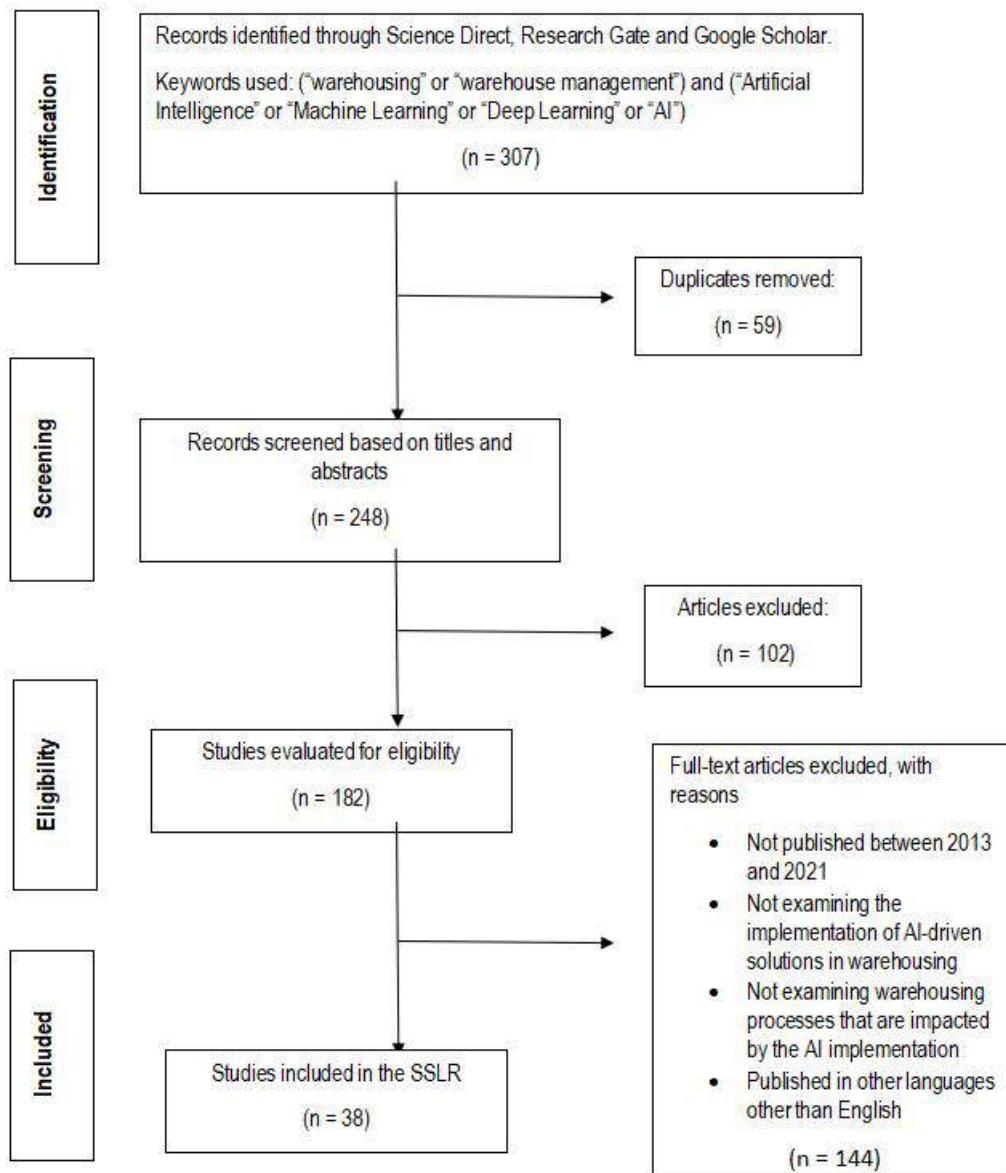
- Were there clear research objectives?
- Was it appropriate to use a qualitative approach for this study?
- Was the researcher justified in using the research design?
- Was it appropriate to use the recruitment strategy to select participants?
- Was the researcher justified in using a data collection strategy to address the research problem?
- Was any consideration taken regarding the relationship between the researcher and participants?
- Has the researcher considered ethical issues?
- Was there sufficient analysis of data?

- Are the research findings adequately stated and discussed?
- Does the research provide any value?

3.5 Step 5: Data extraction

During data extraction, the review protocol must have a clear framework of what kind of data is required before conducting data extractions. After defining the concept of data, the review protocol must provide a framework within which data will be extracted and the number of reviewers will be included. Commonly, data extraction is carried out using an extraction tool developed or designed by the reviewer based on the requirements of the review and to ensure consistency during the extraction of data amongst all reviewers.

Data extraction was carried out by the reviewer using an extraction tool. The tool was piloted on two articles prior to use. The extraction tool was based on the main topic of the implementation of artificial intelligence in warehousing, while recognising related information emerging from reading texts on the following aspects: (i) descriptions and main characteristics of AI-driven solutions, (ii) descriptions of AI in relation to warehousing, and (iii) identification of types of AI-driven solutions implemented in warehousing, and (iv) explanations about how the implementation of AI can be improved in warehousing. The researchers selected a specific bibliographical database using the criteria listed in step three to select journal articles in the fields of AI and warehousing. Thus, the researchers could ensure that they extracted information that applies to the current study. Research that contained unrelated content was discarded. Those publications categorised in the inclusive set were read carefully to ensure they were relevant to the current study.



**Figure 1: The PRISMA flow diagram describing stages of a literature search conducted in this study.
Source: Own compilation**

3.6 Step 6: Analysis and Synthesis

Data analysis involves being familiar with the data (see steps 3 to 5), and before the analysis, it involves grouping it into categories and making summaries. In this study, data analysis was conducted using thematic content analysis, which involved determining patterns within and between the texts (Sekaran & Bougie, 2016). This data analysis technique was appropriate for this research since it enables the analysis of texts collected from different data sources such as textbooks, journal articles, and other textual data. It seeks to examine the content themes evident in the data (Sekaran & Bougie, 2016).

4. Findings and discussion

The previous sections have provided the background to the research, presentation of the problem statement and references to literature. This section discusses findings concerning the primary and secondary main research objectives.

In this study, the data search was conducted using PRISMA (Preferred Reported Items for Systematic Review and Meta-analysis) guidelines from Science Direct, Research Gate, and Google Scholar. The researchers identified 307 articles matching the search terms discussed in Section 3.2. Of 307 articles,

59 duplicates were identified and removed. Thereafter, 248 studies were screened based on titles and abstracts, where 102 articles were excluded. The remaining 182 studies were then assessed for eligibility concerning inclusion criteria (refer to Table 2), where 144 full-text studies were excluded. After reviewing all studies retrieved, 38 studies addressing the research objectives were included in the review. The PRISMA flow diagram showing different stages of the literature search is described in Figure 1.

Figure 2 illustrates the publication timeline of included studies. The publication timeline suggests there was little research conducted on AI in warehousing until 2015, when there was a significant increase of studies on the topic until 2020. This could be explained by the recent significant increase in investment in AI within logistics as alluded to earlier.

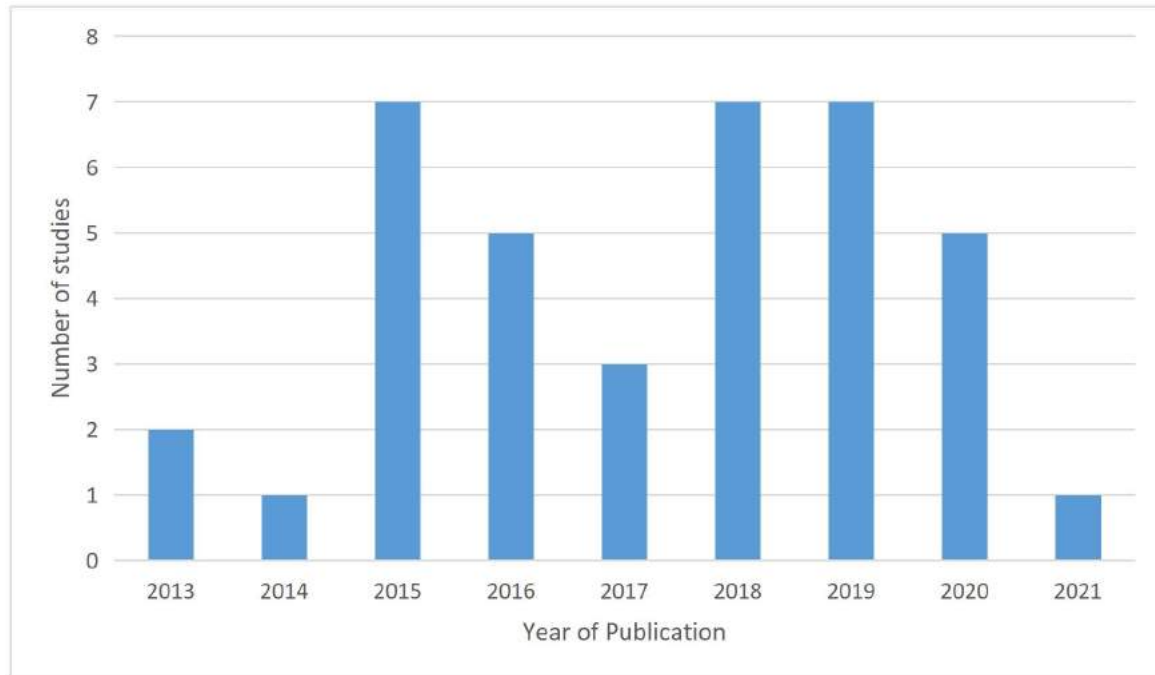


Figure 2: Publication timeline of included studies
Source: Own compilation

The researchers read all the articles, identified all their themes, and grouped them concerning their similarities. Across articles meeting primary inclusion criteria, most studies examined different technologies adopted in the logistics industry, different areas of warehousing that have implemented AI, and examples of leading companies implementing AI-driven solutions. A small portion of these studies discussed improvements that can be made to the implementation of AI in warehousing.

4.1 AI-driven solutions implemented in warehousing

In the study sample, five different AI-driven solutions implemented in warehousing were identified from fourteen articles as shown in Table 3.

Table 3: AI-driven solutions implemented in warehousing

AI-driven solutions	Sources
1. AI-powered warehousing robots	Xinke (2020); Jingyu (2019); Duan, Edwards & Dwivedi (2019); Lyutov, Uygun & Hutt (2019); Fatorachian & Kazemi (2020); Davenport (2018); Gligor <i>et al.</i> (2018)
2. Unmanned Warehouse	Xinke (2020), Feng (2019); Jingyu (2019); Li (2019); Tanning (2019); Ying, Qin & Tingting (2019); Gligor <i>et al.</i> (2018)
3. Intelligent picking operations	Feng (2019); Dirican (2015); Canhoto & Clear (2020)
4. AGV (Automated Guided Vehicle)	Xinke (2020); Feng (2019); Gongjian (2018); Barreto, Amaral & Pereira (2017).
5. Facial and Image Recognition Technologies	Fatorachian & Kazemi (2020); Gongjian (2018); Xinke (2020); Li <i>et al.</i> (2018); Zhou (2018); Gligor <i>et al.</i> (2018); Jarrahi (2018)

Source: Own compilation

4.1.1 AI-powered warehousing robots

As illustrated in Table 4, seven studies identified AI-powered robots as a key technology used in warehousing. After using autonomous robots to conduct search and rescue and explore mines, robots have now entered the business market to improve warehouse productivity, speed, and reliability (Fatorachian & Kazemi, 2020). AI-powered warehousing robots have also contributed to creating a self-organised automated warehouse (Davenport, 2018). AI-powered warehousing robots possess the capabilities of both reactive and limited memory machines since they create knowledge by using memory in combination with pre-programmed instructions (Dirican, 2015).

Among the research included in the SSLR is Xinke (2020) study. The latter study reports on AI-powered robots used in the format of reported automated shuttle equipment. Automated shuttle equipment is defined by Jingyu (2019) as “drive-in rack” automated equipment, which includes intelligent robots developed to carry out numerous tasks, including picking, transportation, and interaction with the warehouse management system. Furthermore, this equipment operates in collaboration with radio frequency identification (RFID) barcodes or other technological devices used for intelligent item identification. Jingyu (2019) referred to Amazon’s Kiva Robot as an example of automated shuttle equipment, stating that to move forward, Kiva robots scan the path using the bar codes embedded in the warehouse floor. An article by Lyutov et al. (2019) on managing customer requirements workflow using machine learning discusses the Kiva robotics system, which aims to solve the order fulfilment problem. The Kiva system is an automated warehouse management system that uses autonomous robots to move items around in the warehouse to fulfil customer orders (Lyutov et al., 2019; Duan et al., 2019). The findings presented by Xinke (2020) and Jingyu (2019) are similar to those of Gligor et al. (2018).

4.1.2 Unmanned warehouses

In the study sample, six papers by Ying et al. (2019), Tanning (2019), Xinke (2020), Jingyu (2019), Li (2019) and Feng (2019), discuss unmanned warehouses as a form of AI-driven solutions implemented in warehousing. Unmanned warehouses can be described as autonomous warehousing (Ying, et al., 2019). This extremely automated and intelligent warehouse depends on incorporating smart processes in logistics to replace human employees with intelligent machines (Ying et al., 2019). A study on the intelligent logistics architecture and its Influencing factors by Tanning (2019), refers to unmanned warehouses operated by JD Asia No1, Amazon, and Alibaba as some of the most technologically advanced unmanned warehouses.

Tanning’s research supports Xinke’s argument that unmanned warehouses require some of the most technologically sophisticated equipment, such as intelligent robots and lift-assist devices that communicate with numerous AI technologies. For example, JD Asia No1’s unmanned latter

warehouse has a computerised control centre capable of accurately calculating 68 billion possible routes within 0.2 seconds for over 300 robots (Xinke, 2020). The reaction speed for this intelligent control system is 0.007 seconds (Xinke, 2020). Ying et al. (2019) state that psychologists have conducted experiments on the human reaction time to the same input, and the findings indicate that it is over 0.1 seconds. This means that the speed of reaction of the unmanned intelligent brain is six times that of humans (Ying et al., 2019). Unmanned warehouses function as limited memory machines since they can remember the information learned from observation of past activities (Gligor et al., 2018).

4.1.3 Intelligent picking operations

An article on the artificial intelligence applied in the logistics field (Feng, 2019) identified intelligent picking operations as an AI-driven solution used in warehousing. Intelligent picking operations include wearable wireless picking technology, the newest picking innovation of its kind. Feng (2019) further identified two types of wireless picking technology, namely, voice picking and Augmented Reality (AR) visual picking technology. Feng describes voice picking as converting warehouse management commands into vocal sounds to be communicated to the warehouse workers, who will then have access to the locations of the matching items in accordance with the I commands (Feng, 2019). Upon arrival at the corresponding goods position, the operator will pick up the goods, and the confirmation will be made once the goods have been picked (Feng, 2019). The main visual focus of the operator is on the assigned tasks, and there is no need to operate any device to scan items, hence eradicating any mistakes. Intelligent picking operations involve another type of reactive machine described by Dirican (2015) and Canhoto & Clear (2020) since they cannot be used to perform tasks that require retrieval of memorised information.

Feng (2019) also states that voice picking, and AR-related picking involve warehouse operators wearing AR eyeglasses to find their way to picking locations. The instructions regarding tasks to be carried out are projected on the AR glasses (Feng, 2019). Another study on “application research on automatic technology of intelligent logistics system” by Jiang (2020), supports the argument of Feng (2019) that, by projecting information on the AR glasses, visual picking using AR glasses can provide similar benefits to voice picking as it also allows operators to be hands-free.

4.1.4 AGV (Automated Guided Vehicle)

AGV was discussed in four articles as one of the AI-driven solutions applied in warehousing. A paper by Xinke (2020) states that an AGV can rapidly be implemented in an intelligent warehouse and can be utilised to sort shelves. This is due to an AGV’s ability to use AI-based sensors and cameras to navigate automatically and to park itself at the product location based on the system’s commands, and to then point the operator to the location and the quantity of the specified products using the on-board display terminal. Jiang (2020) states that the conventional picking mode of “Person to Goods (P2G)” is replaced by “Goods to Person (G2P)” which saves significant time, eradicates manual work, and enhances the efficiency of picking operations. Gongjian (2018) argues that further to realising “Goods to person”, there are numerous other innovative uses of AGV in warehouse operation. These include AGV’s ability to mount on the static pallet stretch wrap device, thus, warehouse operators do not have to install the conveyor belt of the pallet, which significantly enhances a factory’s safety and minimises the cost of labour (Barreto et al., 2017). AGVs have the abilities of limited memory machines since they are trained using a large amount of data that they collect and store and then use as a model of reference to resolve problems in the future (Feng 2019).

4.1.5 Facial recognition technologies

Research by Xinke (2020), Gongjian (2018) and Li et al. (2018) discusses facial and image recognition as crucial AI-driven solutions implemented in warehousing to ensure effective warehouse access control. The access control of intelligent warehousing operations uses facial recognition technologies when performing individual identity detection using the basic features of the human face (Li et al., 2018). Coupled with its initial smart card access control, the company can significantly improve security and ensure effective warehouse access control and safety (Gongjian, 2018). One of the most valuable components of facial recognition technology is that facial images are captured using

high-definition cameras providing evidence for investigating any event that undermines access control security (Li et al., 2018; Fatorachian & Kazemi, 2020). Facial recognition technologies are a good example of limited memory machines discussed earlier in the literature by Gligor et al. (2018) and Jarrahi (2018) since they rely on input information or pre-programmed data. For example, different faces of employees must be registered in the memory of the face recognition technology for it to remember them.

5.2 Warehousing processes affected by the implementation of AI

As discussed earlier, several warehouse activities are carried out as part of crucial warehousing processes. This section focuses on the findings emerging from the literature regarding the warehousing processes affected by implementing AI-driven solutions. Several researchers have discussed different warehousing processes that have benefited from implementing AI-driven solutions, as shown in Table 4.

Table 4: Warehousing processes affected by the implementation of AI

Warehousing processes	Sources
1. Receiving stage	Yang, Li & Rasul (2021); Minichino (2015)
2. Storage	Chocholáč, Boháčová, Kučera & Sommerauerová (2017); Deepak (2015); Deshmukh, Santhosh, Mane, Verma & Pai (2015); Strigul, Gatziolis, Liénard & Vogs (2015)
3. Sorting of items	Choy, Ho & Lee (2017); Zhou, Zhang & Zhou (2015); Xu, Ma & Qin (2014); Chen <i>et al.</i> (2016)
4. Inventory control and planning	Addo, Centhala & Shanmugam (2020); Grace & Timothy (2018); Tereza (2016); Bandaru, Aslam, Ng & Deb (2015); Paul, Azeem & Ghosh (2015)
5. Material handling	Zhang, Zhu & Lv (2018); Zhang, Zhang, Qu, Liu & Zhong (2017); Bhuiyan, Wu & Wang (2016); Ko, Jung & Jeon (2013)
6. Order picking	Lu <i>et al.</i> (2016); Chen <i>et al.</i> (2016); Scholz, Henn, Stuhlmann & Wäscher (2016); Bottani, Montanari, Rinaldi & Vignali (2015); Henn & Schmid (2013); Chen, Wang, Qi & Xie (2013);

Source: Own compilation

5.2.1 Receiving stage

From the SSLR, the receiving stage was identified in two articles as one of the warehousing processes affected by the implementation of AI-driven solutions. An article by Yang et al. (2021) focusing on the use of a conceptual artificial neural network model in warehouse receiving management, states that many problems are commonly experienced in the warehouse receiving stage due to delays in information sharing or data errors. These problems typically require the urgent attention of the management team. Therefore, the availability and uninterrupted flow of information at the warehousing phase of receiving is critical for the success of all logistics operations. Yang et al. (2021) further suggest that various ANN models could be studied to develop a theoretical model for implementation in warehousing. Minichino (2015) proposed using an ANN model, called “Artificial Neural Network for Components Identification and Counting model” to identify and count various receiving components of warehouse management.

5.2.2 Storage

Five of the articles reviewed identify storage as one of the warehousing processes affected by the implementation of AI in warehousing. A study on “robotic navigation and inventory management in warehouses” by Deshmukh et al. (2015) acknowledges that warehouse storage operations are becoming increasingly complex, paving the way to automate the storage process to improve efficiency and effectiveness. In another study by Strigul et al. (2015), it is stated that many warehouses use an inefficient way to count inventory, primarily involving manual work performed by

people. However, Deepak (2015) suggests that in the last decade, advanced technologies in warehousing such as barcode scanners, robots, and RFID tags were introduced to track and record goods within a warehouse. Deepak (2015) also indicates that barcode scanners have been limited since they are only effective when the inventory is placed on the conveyor belt or in a vehicle. Chocholáč et al. (2017) report that creating AI-powered solutions such as autonomous drones have led to the automation of the storage process and improved efficiency. Strigul et al.'s. (2015) findings are similar to those of Chocholáč et al. (2017) and state that using automated AI systems based on drone scanning has primarily contributed to improving the overall storage process, including minimising the risk of human injuries, improved accuracy and speed, and reduced downtime and operational costs.

5.2.3 Sorting of items

A study by Xu et al. (2014) has emphasised the significance of the sorting function in warehousing, where AI-driven solutions are adopted mainly to improve its efficiency. Researchers including Choy et al. (2017); Zhang and Wang (2014), and Xu et al. (2014) note that AI-driven technology can be used in the sorting function to identify information and replace manual labour. Technologies such as ANN are used to solve problems related to classification in data processing. This has allowed specific AI applications to categorise various characteristics and properties of items to create one classification (Zhou et al., 2015). As a result, many items with different features could be identified with high accuracy. Chen et al. (2016) and Zhou et al. (2015) indicate that sorting systems in warehouses for tobacco and pharmaceutical products often adopt AI-driven solutions. AI-powered robots reduce the time spent by the workers sorting since they are more accurate and efficient during the sorting process.

5.2.4 Inventory control and planning

Inventory control and planning were identified in five articles as one of the essential warehousing processes involved when implementing AI. According to Paul et al. (2015), the cost of holding just a single inventory unit per year ranges between 15% and 35% of its item value. Therefore, a company's success in a highly competitive market relies on its capability to conduct proper inventory control and planning at lower costs while ensuring constant inventory availability when customers need it (Paul et al., 2015). To achieve this, there is a need to have access to precise, actual data regarding the anticipated demands of customers, size, amount, and type of available inventory (Paul et al., 2015). Articles by Addo et al. (2020); Grace & Timothy (2018); Tereza (2016); Bandaru et al. (2015) all suggest that AI-driven solution techniques such as expert systems are better suited to handling decisions relating to inventory control and planning since they can substitute for the judgment of experienced inventory managers.

5.2.5 Material handling

Four articles in the study sample identified material handling as one of the warehousing processes that were affected by implementing AI-driven solutions. Zhang et al. (2017) stated that the cost of material handling operations is a substantial part of the entire cost of the product. Hence it is essential to optimise the material handling system to reduce costs. To achieve this, a significant number of AGVs can be operated when moving goods in the warehouse (Zhang, 2018). AGVs allow companies to implement a manageable material routing system in the warehouse (Zhang et al., 2017). Bhuiyan et al. (2016) argue that companies such as Amazon, Alibaba and DHL are already using AGVs in their warehouses to improve material handling processes. According to Ko et al. (2013), companies that seek to improve flexibility and productivity in their material handling operations have enhanced the intelligence of their vehicles.

5.2.6 Order picking

Chen et al. (2016) authored one of the six articles that identified order picking as one of the warehousing processes affected by implementing AI-driven solutions. The authors argue that picking orders among warehouse activities is commonly considered more costly because of its very labour-intensive nature and reliance on high financial investment. Henn and Schmid (2013) argue that the process of order picking can be conducted either manually or by adopting automation. It is projected that picking orders manually account for over 55% of the entire warehousing costs (Bottani et al., 2015). Feng (2019) stated that companies use AI technologies such as robots and wireless picking

technologies to solve this problem. Other authors cited that companies use AI-powered robots to reduce costs in picking operations (Chen et al., 2013; Choy et al., 2017). The AI-powered robot's end-of-arm tooling configured into the AI can provide coordinates and angles for AI-powered robots to pick the products without crashing into external structures (Choy et al., 2017). Information is also shared across different robotic systems, which allows them to learn from each other for continuous advancement (Scholz et al., 2016). This is made possible by machine learning which uses algorithms to learn from previous activities and make practical decisions for warehouse picking activities (Chen et al., 2013). The use of robots improves safety and accuracy by allowing human workers to perform safer activities while minimising the occurrence of errors. Machine learning will enable the picking of new products at any time without making changes in robotic programming. Scholars and company executives in the logistics sector regard order picking as an area with high potential for improvement (Chen et al., 2013; Lu et al., 2016).

6. Recommendations

For the reported findings to benefit practitioners in the field of logistics, some recommendations are made concerning the implementation of AI-driven technologies in warehousing. Practitioners should note that various AI solutions are available for implementation in warehousing and could support all the critical warehousing processes. Some technologies deserve special mention. In the review, most researchers cited AI-powered robots as essential in creating an automated warehouse system. Therefore, companies striving toward automated warehousing should consider investing in more robotic technologies to reduce operational costs in different warehousing processes. It was indicated in the review that order picking accounts for over 50% of warehousing costs, which is primarily due to the manual labour involved. By removing manual picking using robotic technology, companies can reduce labour costs and time spent retrieving items. This will allow workers to focus on other more complex warehousing processes such as packaging and shipping. Information is a critical enabler of AI and when implementing AI, it is essential to ensure that inventory information is accurate and regularly updated to make the most of what AI-driven technologies can offer. To that end, warehouse operations should benefit most from the comprehensive adoption of technologies across the spectrum of core processes performed.

7. Conclusion

In this study, an SSLR was conducted by bringing together the main findings from various studies on implementing AI-driven solutions in warehousing. The analysis stage of the review focused on 38 academic journal articles. The majority of which highlight the importance of AI adoption in warehousing. It was found that different types of AI-driven solutions have impacted in similar and different ways on warehousing processes. In this study, five leading AI-driven solutions were identified as having been implemented in warehousing operations, i.e. (i) AI-powered warehousing robots, (ii) Unmanned warehouses, (iii) Intelligent picking operations, (iv) Automated guided vehicle systems, and (v) Facial recognition technologies. Among the five AI-driven solutions, most researchers cited AI-powered robots as essential in creating an automated warehouse system. The unmanned warehouse was the second most cited AI solution in the journal articles in this review and could be linked to the use of robots. Automated shuttle equipment and Intelligent picking operations were cited in fewer publications.

The SSLR also identified that most of the critical warehousing processes are affected by AI implementations, including receiving, storage, sorting, inventory control, material handling and order picking. It is clear from the review that most of the articles cited storage, sorting, inventory control and planning, material handling, and order picking as warehousing processes mostly affected by AI implementation. Fewer articles cited receiving as affected by AI implementation. Also, only ANN models were indicated as potential AI applications in receiving as opposed to other warehousing processes, which indicated multiple AI solutions.

The study recommends that practitioners consider more financial investment in robotics technology to help in reducing operational costs across different warehousing processes. Limitations of the study are that the research relied on secondary data sources, and an empirical study was not conducted.

Accordingly, the researcher did not control how variables emanating from the secondary data sources are described or categorised. Also, there was a limited number of studies that were reviewed. A further study is suggested on the success of implementations and the challenges experienced in implementation since these would be issues that practitioners should be interested in when creating feasibility studies for top management to consider prior to implementation. Also, an experimental research study could be done on other logistics functions to examine the extent of AI implementation. Comparative studies could also be undertaken in similar industries to determine whether similar AI-driven solutions are implemented. Another semi-systematic review could be done to include major databases that were left out in this study.

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Using a Regression Model to Evaluate the Design and Effectiveness of the Supply Chain: The Case of an Accredited South African Laboratory

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Keywords

supply chain,
supply chain design,
inventory management,
on time delivery,
regression model

Abstract

The need for uninterrupted pathology services is undeniably paramount to the growing population of South Africa and a well-designed and effective supply chain is a key driver in creating this opportunity. This article aims to investigate how the current supply chain design of a specific pathology laboratory in South Africa affects organisational performance. A regression model was used to analyse and then determine the main factors that influence the effectiveness of the supply chain design. A link to the Survey Monkey website was emailed to the 128 sampled population to access the survey. The results of the study concluded that various factors including resilience capability, risk management capability and strategic supplier management, have a positive influence on the current supply chain of the organisation, while inventory management and on time delivery which was highlighted during the data analysis phase, as being a negative contributor to the overall supply chain performance.

1. Introduction

Supply Chain Design (SCD) shapes the nature of SCs Supply Chain's by understanding your customers' needs and requirements and developing your SC to cater for these needs and requirements (Youssef, 2021). SCD has become a key source of competitive advantage that enables organisations to fine-tune their SCs to match their strategic objectives (Melnyk, Narasimhan & DeCampos, 2014). A purposefully built SC that is aligned with the organisation's strategic goals, necessitates management action and strategic corporate investments into areas that will ensure that organisations SC stands above the rest (Melnyk et al., 2014). This investment should be aimed at procuring, developing, and configuring appropriate resources, processes, and metrics that develop the organisation's SC to meet the organisation's requirements and identify what the SC can and cannot address (Youssef, 2021).

One of the fundamental objectives of a laboratory service is to provide diagnostic results within a relatively quick turn-around-time (NHLS, 2018). To achieve a relatively quick turn-around-time of tests, pathological laboratories need to have a SC design that optimises the infrastructure available and effectively creates downstream value to the end-user by ensuring the ingredients required for conducting these tests are available on demand (Kagaruki & Kilale, 2018). The pathology industry is regulated in how products (medical devices as described within the Act) are distributed and stored following the Medicines and Related Substances Act, 1965 (Act 101 of 1965) and it is also to be noted that reagents, consumables and other products such as chemicals and equipment, collectively inventory, that is required for conducting these tests is often the largest item in the current assets category on a balance sheet within the organisation. The organisation that we will be discussing within this study, is one of the leading pathology laboratories in Africa and provides vital diagnostic and monitoring pathology services in South Africa and 12 other countries in Sub-Saharan Africa (Sinha, 2021). For this study, we will concentrate on the design of the organisations South African supply chain and how effective it is in servicing the requirements of the South African laboratories within the network.

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1.1 Background

With a population of 58.8 million people in 2018, South Africa is experiencing significant population expansion (National Health Laboratory Service, 2018). The need for health care and laboratory services has increased as the population has grown. South Africa is dealing with a quadruple burden of disease caused by communicable diseases like HIV/AIDS and tuberculosis, maternal and child mortality, noncommunicable diseases like hypertension and cardiovascular diseases, diabetes, cancer, mental illnesses, and chronic lung diseases like asthma, as well as injury and trauma (WHO, 2018).

The need to provide laboratory services for the management of these communicable and non-communicable diseases is vitally important. When a patient visits a doctor, the doctor will listen to the patient's symptoms and conduct a complete physical examination. After that, the doctor will diagnose the ailment or illness, prescribe the best course of action/therapy, and track the results. Additional testing, such as laboratory investigations, may be required by the doctor in order to diagnose, detect, or rule out disease or illness with more certainty (NPG,2021). The doctor's use of a pathology laboratory is critical to improving diagnostic abilities and, as a result, minimising the length of illness by quickly instituting the most effective medication for the diseases or infections discovered.

A comprehensive pathology laboratory encompasses four main disciplines: clinical chemistry, Haematology, microbiology and Serology, Anatomical Pathology and Cytology. There are many tests performed within these disciplines that require various consumables, reagents, and equipment to generate a result. For these tests to be performed on-demand, the laboratory needs to have speedy access to inventory, indicating the need for a highly efficient and effective supply chain (Kagaruki & Kilale, 2018)

The research organisation has been experiencing twenty percent of orders not being delivered on time. The late or non-delivery of reagent and consumables to the labs affects the organisations ability to provide a quick turn-around-time for results which is an industry wide requirement (NHLS, 2018). In some cases, stock available at the warehouse could not reach the laboratory in time, resulting in test results being delayed, which resulted in the Healthcare professionals (HCPs) requesting other pathology organisations to perform the test and thus the study organisation experienced loss in revenue.

Figure 1 provides a visual representation of the value of inventory stored within the organisation at a specific moment in time. This snapshot of the inventory value was taken on the last day of every month to provide the researcher with information pertaining to the inventory values.

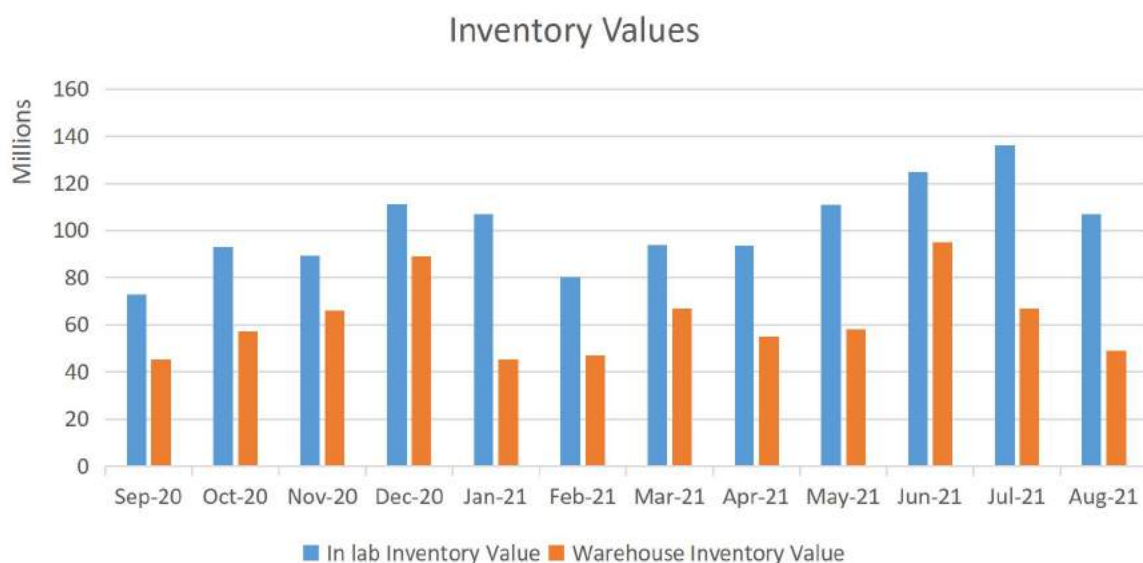


Figure 1: Inventory values within the study organisation

From figure 1 it stands to reason, if the warehouses have the capability of delivering inventory to the labs within 72 hours, the labs must keep stock that will last until their next delivery, however, the inventory value within the labs does indicate significant levels of stockpiling, potentially driven by the fear of running out due to the delayed deliveries from the warehouses. The amount of inventory present within the study organisations network has an immense impact of the profitability of the organisation and could even lead to failure of the organisation if not managed properly (Kungu, 2019). It is therefore of great importance that non-capitalised assets coming in and out of the organisation be managed with the required care, allowing the organisation to reach its optimal profitability, controlling the amount of working capital tied up in inventory, reducing write-offs (Kungu, 2019), all while ensuring the testing requirements are met.

1.2 Problem Statement

In today's globalised economy, organisations face increasing competition and must be able to mobilise all its resources which includes suppliers and available infrastructure, to cut wasteful expenses and inefficiencies in order to provide the best value to the final customer (Haroon, Wasif, Khalid, Khalidi, 2021). SCM as a whole (or a system) must be a key focus area for organisations in maximising value for the supply chain's eventual client, instead of focusing on management for the maximum benefit of one of the parties in the SC (Madhani, 2019). If the SC is viewed as a system of organisations with a single goal (to provide value to the final customer), it stands to reason that a problem in one element of the supply chain will have an impact on the system's or supply chain's overall effectiveness and efficiency. It is therefore important that the organisation's SC is designed with maximum effectiveness and efficiency in mind and the SC possess the capability of servicing the organisations requirements.

Pathology and in particular testing, plays a significant role in the management of the high disease burden present in South Africa and is paramount to increasing the overall health of the population (NHLS, 2018). Pathology contributes significantly to cost-effective patient care and the discipline is critical in the medical care of all patients, not only in the active diagnosis of patients, but also for evaluating the effectiveness of treatment (NPG 2020). One of the fundamental objectives of a Laboratory service is to provide diagnostic results within a relatively quick turn-around-time (TAT) (NHLS, 2018). To achieve a relatively quick turnaround time of tests, pathological laboratories need to have a supply chain design that optimizes the infrastructure available and effectively creates downstream value to the end-user by ensuring the "ingredients" required for conducting these tests are available on demand (Kagaruki & Kilale, 2018). The pathology industry is regulated in how products (medical devices as described within the Act) are distributed and stored following the Medicines and Related Substances Act, 1965 (Act 101 of 1965) and it is also to be noted that reagents, consumables and other products such as chemicals and equipment, collectively inventory, that is required for conducting these tests is often the largest item in the current assets category on a balance sheet within the organisation

This research study will therefore be focused on the following problem statement:

To determine how the current SCD of the case organisation affects organisational performance in a highly competitive environment, paying particular attention to the delivery of inventory into the laboratories.

The study will also aim to answer the following research questions:

- What are the factors influencing the effectiveness of the SCD in the Pathology Laboratories Industry?
- How effective is the SCD of the study organisation in providing downstream value to its customers?
- What recommendations can be provided to improve the SC of the study organisation?

2. Literature Review

2.1 Overview of the South African pathological landscape

In South Africa, pathological laboratories are divided into public and privately-owned laboratories (Khadambl-Morokare, Bhowani & Ayuk, 2021). According to the NHLS, in 2018 there are 53 million tests performed annually by the private laboratory groups and 91 million tests by the public sector. Using the population estimates of Statistics South Africa (STATS SA), the per capita expenditure for the public sector was approximately R153 compared to R702 for the private sector annually based on the assumption that 20% of the population (medical aid population) utilise the private sector (NHLS, 2018). Pathology and laboratory services perform a vital role in the management and diagnosis of patient's illness or disease. At least 60 to 70 percent of clinical decisions and patient diagnoses are dependent on laboratory tests (NHLS, 2018). In order for these public laboratories and the private laboratories to provide cost-effective and efficient laboratory services that meet the health care needs of all the citizens in the country, there is a need for effective development and management of laboratory supply chains (SC) (Khadambl-Morokare, Bhowani & Ayuk, 2021).

Conceptual Framework: Supply Chain Design

The design of the SC is an important component of the overall SC success (Melnyka et al., 2014). The SCD ultimately influences the organisation's investment patterns across its various SCs (Youseff, 2021). Figure 2 depicts a conceptual framework developed from a review of available literature in the field of supply chain design (SCD), supply chain management (SCM) and adopted from a very comprehensive study conducted by (Nel & Badenhorst 2010).

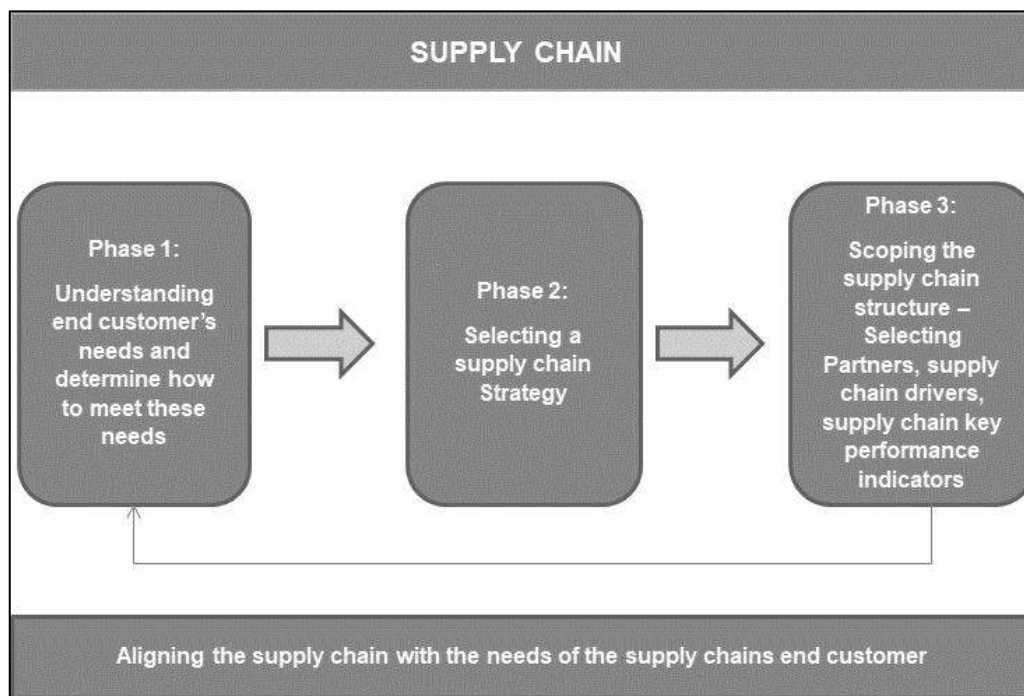


Figure 2: The conceptual framework of Supply Chain Design

Source: Adopted from Nel and Badenhorst (2010)

As illustrated on Figure 2 once the requirements of the end users have been identified, organisations will have to identify how to meet these needs. As a result, the conceptual framework determines if the strategy (as well as the level of market demand predictability and market winners) is in line with end-user expectations and how to achieve them (Melnyka et al., 2014). The conceptual framework also determines whether the SC structure and strategy are in alignment, as well as whether SC partners, drivers, and KPIs are aligned with the chosen strategy (Nel et al., 2010, Melnyka et al., 2014, Youseff, 2021).

2.2 An overview of Supply Chain

A SC can be described as a group of three or more entities (organisations or individuals) that are actively involved in the upstream and downstream flows of products, services, funds, and/or information to (and from) a consumer (Mukhamedjanora, 2019). In this regard, the SC includes manufacturers, suppliers, transporters, warehouses, wholesalers, retailers, other intermediaries, and even customers. SCM refers to the upstream and downstream relationships between suppliers and consumers in order to resolve functional boundaries within and across organisations (Miller, 2017). An organisation's long-term competitiveness depends on its ability to design a SC that responds well to its customer preferences regarding cost, quality, and flexibility.

2.3 Supply Chain in Healthcare

A healthcare SC is an ecosystem made up of a variety of organisations, people, technology, activities, information, and resources that enable the cost-effective distribution of healthcare products, vaccines, and other medicines from the manufacturer to the end-patient (Christos, Vicky & Constantinos, 2014). One of the key goals of the healthcare SC is to ensure that inhabitants of a country, regardless of their geographic location, have access to flexible healthcare delivery systems that can respond to a variety of patient needs (Tseng, Islam, Karia, Fauzi & Afrin, 2019).

2.4 Supply Chain Management in the Healthcare Sector

The SCM of the healthcare sector has gained much importance due to the need to improve delivery of products and patient satisfaction (Durakbasa & Gençyılmaz, 2020). Changes in the healthcare sector have been rapid, resulting in the need to have corresponding changes in the SC. In this regard, many healthcare organisations are now improving the techniques and methods in SCM (Durakbasa & Gençyılmaz, 2020). The performance of the healthcare SC is another major challenge.

Resource-Based View (RBV) can explain a wide range of organisational and SC outcomes. According to Barney (1991), a pioneer in the field of RBV, organisations should look inside to gain a competitive advantage rather than looking at the environment within which it competes. Organisations can achieve competitive advantage by leveraging existing resources and developing these internal capabilities and resources (Jurevicius, 2021).

The study applies RBV to help understand how SCD can be used within an organisation in creating competitive advantage, and importantly, what internal factors influence SCD and SCM within the organisation, that ultimately affect the overall SC performance. For this study, we will define the design and effectiveness of the SC - *as the effective use of the organisational SC infrastructure (resources and capabilities) to create competitive advantage, by ensuring inventory required for testing patients is available on demand at the various laboratories with the study organisations network.*

2.5 Factors influencing Supply Chain Management

SC visibility, technology, organisational alignment, collaboration, human resources, distribution management, and performance management are the seven main characteristics of the healthcare SC (George & Pillai, 2019; Mehmeti, Musabelliu & Xhoxhi, 2016).

2.5.1 Supply Chain Visibility

Supply Chain Visibility (SCV) is made possible by SCM technology, which provides near-real-time data on logistics and SC activities. This data may be used to avoid inventory shortages, alleviate bottlenecks, comply with regulatory requirements, and track products from start to finish (Biel, 2020). SCVs major goal is to improve and intensify the SC by giving accurate real-time data to all stakeholders such as product demand, sales forecasts, inventory available at different warehouses within the network, open orders (Saqib et al., 2019) and in the case of this study, stock on hand in the respective labs where testing takes place.

2.5.2 Organisational alignment

Organisational alignment in a demand-driven organisation and entails a transformation process in which the organisation's vision is centered on an outside-in strategy (Prajogo, Oke & Olhager, 2016). This takes customer value as its start and end point and actual client demand, is translated into strategies and plans, and these strategies include customer segmentation and product classification. To maintain organisational alignment, metrics such as: increasing the quality of services and product availability, and reducing inventory levels while still maintaining sufficient inventory to cater for the organisational requirements, should be linked with SC goals and objectives (Melnyk et al., 2014).

2.5.3 Distribution management

The ability of an organisation to support the storage and movement of items in order to meet consumer demand reliably and efficiently is characterised as distribution management (Mehmeti, Musabelliu & Xhoxhi, 2016; Bvuchete et al., 2020). Warehouse and inventory management, cross-docking, distribution planning and transportation are the top distribution management methods which enhances responsiveness and flexibility which in turn reduces errors and costs (Bvuchete et al., 2020).

2.5.4 Collaboration

Collaboration in SC refers to cooperative planning and execution of SC activities (Buijs, Vis & Carlo, 2014). Customer happiness is impacted by SC collaboration since it affects service levels and ultimately costs (Bvuchete et al., 2020). A well functional collaboration approach allows the partners within the SC to better understand the demands of the SC (Bvuchete et al., 2020).

2.5.5 Technology

Implementing efficient and reliable SCM information systems can help an organisations success and compete in the global marketplace (Al-Odeh, 2016). Technology allows for the seamless capture, analysis, and distribution of real-time demand and inventory data (Bvuchete et al., 2020). The communication of data among SC participants can be facilitated by a quick data exchange platform (Al-Odeh, 2016).

2.5.6 Human resources

Human resources are regarded as a key success factor in the SCM (Elmortada, Mokhlis, Elfezazi & Mokhlis, 2017). Organisations will need to invest time and money to develop their staff's capabilities (Bvuchete et al., 2020). Human beings are also the drivers of innovation; thus, it is crucial to have some mechanisms to capture SC staff's new ideas (APICS, 2017).

2.5.7 Supply Chain stakeholders

The healthcare SC Network is made up of three important players in healthcare SC producers, service providers, and purchasers (Bvuchete et al., 2020). Patients, the government, and insurance companies are all included in the healthcare SC and are regarded as the purchasers of healthcare. The SC processes that is implemented must be determined by these stakeholders (Lambert & Enz, 2017).

2.6 Supply Chain Design

SCD is the process of identifying the organisation's desired strategic outcomes, then planning, implementing, and managing the resources, procedures, and relationships inside the business and across the SC over time to ensure the achievement of those outcomes (Melnyk et al., 2014). For this study, we will define SCD as the effective use of the organisational SC infrastructure to assist in creating competitive advantage by ensuring inventory required for testing patients is available on demand at the various laboratories with the study organisations network.

Organisations have discovered that their SC efficiency determines their market competitiveness (Sjoerdsma & van Weele, 2015), and their ability to manage SC resources and suppliers determines their capacity to deliver the right products at a faster pace and at a lower cost than their competitors (Lii & Kuo, 2016). Even though SCD is primarily aimed at creating and obtaining strategic decisions and outcomes, it is a highly dynamic aspect that greatly impacts all levels of decisions. SCD can also

be described as choosing capabilities along the value chain that can be invested and developed internally (Dominguez, Cannella & Framinan, 2016).

2.7 Factors influencing Supply Chain Design

There are various factors that influence SCD. These factors will be discussed in this section.

2.7.1 Inventory Management

As indicated within this study, laboratory facilities are vital components of health care, assisting in the delivery of high-quality pathology services to patients by providing accurate diagnosis and monitoring of medical outcomes and their effectiveness is hinged on the availability of inventory, equipment and facilities (Kagaruki & Kilale, 2018). It is therefore paramount for proper inventory management for the attainment of this goal (Dominguez et al., 2016). Inventory Management (IM) is a critical component of SCD that provides the healthcare system with some level of protection against service disruptions (Befekadu et al., 2016). In the case of the study organisation, after the inventory is delivered to the warehouse, it must be delivered to the point of service, for example, where the customers can obtain the service from the organisation (labs and bleeding depots). IM uses demand planning techniques such as S&OP meetings and trend analysis to understand how much to order or issue and how to keep appropriate stock to minimise shortages and oversupply during this process (Dominguez et al., 2016). IM will not be able to function effectively, however, if the support from all parties within the SC is not operational (Befekadu et al., 2020). IM needs insight into demand patterns and environmental changes within the labs. IM is therefore a key component in creating a successful laboratory service to patients.

2.7.2 Support from top management

Managers in the higher positions and boards of the organisation influence how the organisation operates and performs as they are responsible for the philosophy of SCM of the organisation (Dominguez et al., 2016). Top management influences strategic planning and purchasing, information technology adopted, logistics, and the developing relationship between facilities. To create a successful SC, top management's abilities are critical. Therefore, when designing the SC, there is a need for top management to use the latest technologies, trends, methods and ideas to ensure that they develop an effective SC that ensures the organisation is profitable and able to compete on a global level. These decisions have an impact on the SC's structure and design (Mehmeti et al., 2016).

2.7.3 Customer demand and focus

Focusing on customers is crucial in designing the SC, and getting this right, will lead to customer satisfaction which drives repeat and even new business for the organisation (George & Pillai, 2019). If the customers are extremely satisfied with the products supplied and the value added to the products, they could even pay higher than market indicated prices to have that product or service – convenience on all levels is key to sustainable positive customer experience (George & Pillai, 2019). It is therefore important for organisations to fully understand the market within, which they operate and most importantly understand what changes within this market will do for the demand of their product or service.

2.7.4 Information technology

Information is an essential driver in the SC and contributes to how the SC works and is vital in any stage in the SC (Dominguez et al., 2016). Technological advancement in the SC has changed how SC operates by providing relevant and accurate data on inventory level, shipment status, required quantities of products, product availability and forecast accuracy. The use of websites and social media platforms has enabled many organisations to understand the changes in the tastes and preferences of the customers which aids forecast accuracy and provides greater market insight. This reduces demand uncertainties and bullwhip effect and reduces safety stock (Mehmeti et al., 2016).

2.7.5 Communication tools

Communication tools work hand in glove with information technology. They are responsible for communication such as intranet and extranets and facilitating data transfer like electronic fund

transfer (EFT) and electronic data interchange (EDI), between partners (Dominguez et al., 2016). EDI is used for disseminating information to customers through catalogues that show product information, whereas EFT is used to transfer funds between partners. Intranets are used to facilitate easy communication within an organisation whereas extranets enable the organisation to communicate with external collaborators (George & Pillai, 2019). Internet forms part of communication tools that allow the organisation to communicate with others through browsers. Even though they are costly to implement, these communication tools help in cost reduction and organisation's effectiveness (Dominguez et al., 2016).

2.7.6 Planning tools

Planning tools are essential in integrating resource planning processes in the organisation to create total value across end-to-end business. There are many planning tools such as Material Requirement Planning (MRP), manufacturing resources planning (MRPII), and Enterprise Resource Planning (ERP) (Burnette et al., 2016). These planning tools forms the spine of many activities across the entire organisation. When designing the SC, there is a need to look at the planning tools for the organisation to ensure that they are in line with the demands of the SC and especially from an inventory management point of view.

2.7.7 The Relationship between SC members

The SC is made up of different trading partners such as wholesalers, distributors and retailers with the same aim of deriving mutual benefits through collaborative advantage (Mofokeng & Chinomaona, 2019). The relationship between partners is crucial for the performance and success of a SC. The quality of the relationship influences the level of risk sharing, supply base reduction, cross-functional teams and information sharing among partners (Mehmeti et al., 2016). The SC is generally complex and this indicates that there is need for some form of professionalism to ensure that mutual benefit can be achieved and the goals of different organisations are achieved. Globally, organisations compete and try to reduce operating costs and improve quality to meet customers' needs as they look for better service, more choices, higher quality, and fast delivery (George & Pillai., 2019).

2.7.8 Lead time

Another critical factor crucial in SCD is lead time. Lead time refers to the time gap that exists between the receipts of orders to delivery. The lesser time, the lesser the bullwhip effect, whereas a long lead time leads to the bullwhip effect (Khosroshahi, Hussein & Marjani, 2016). Long lead time causes shortages in total inventory (Iqbal, 2018) or causes the organisation to carry excess inventory to cater for the longer lead time, whereas shorter lead time contributes to the SCs effectiveness as inventory can be turned over quicker leading to less working capital tied in inventory sitting on shelves (Ross, 2015).

2.7.9 Environmental factors

Environmental factors influence the design of the SC (Youssef, 2021). Environmental factors comprise many factors in the SC which ultimately affect the SCD, such as: unexpected changes of customers, changes in technology, changes caused by competitors and suppliers, changes in customer demand that causes demand uncertainties, and supply uncertainties caused by product quality and availability.

The political environment, particularly complex legislation, and support from the government, the policies, norms and regulations made when an organisation imports raw materials, which, all influences the design of the SC. According to Chen and Paulraj (2014), increased international commerce has an impact on the SC by raising the competitiveness and quality of the manufacturing sector around the world. International trade forces push local providers to improve their quality to meet international standards. However, international trade increases transportation costs, risk of massive exchange rate fluctuations and administrative practices with the import and export of goods (Bashynska et al., 2019).

2.7.10 Supply Chain structure

Lastly, the structure of the SC affects the success of the organisation. In a SC, there are several facilities, different stages, and different information needed for each stage, making the SC complex. In many SCs, there are very few linear relationships, and there exists different SC structures such as dyadic, serial, convergent and divergent (Cannella et al., 2017). The organisation needs to avoid complex channels as this may cause the bullwhip effect (Dominguez et al., 2016).

2.8 The Supply Chain of Pathology Laboratories in South Africa

For pathology laboratories to function effectively, there is a need for uninterrupted availability of products, reagents, supplies, and other consumables (African Society for Laboratory Medicine, 2012). Failure to have a steady supply of essential products causes stock-outs of key reagents and other supplies and compromising service delivery. Pathology laboratories require constant and unlimited access to laboratory commodities ranging from chemicals, reagents to high-throughput equipment. Laboratories need to manage their SC effectively to ensure a readily available supply of critical products to complete testing as the market demands (Kagaruki & Kilale, 2018). The SC of pathology laboratories in South Africa plays a crucial role in providing assurances for managing the current disease burden, prevention, care and treatment (NHLS, 2018). It helps link planning, implementation, and management of essential health care services from providers and suppliers to patients in the country (NHLS, 2018). The theoretical part is good

3. Methodology

In this study, exploratory research was used. It was selected since the concept of SCD is viewed as a relatively new topic. In addition, in South Africa, there is a literature gap as very few studies have addressed the design and effectiveness of SC in the pathology laboratories. Exploratory research design was selected since it is flexible and produces new knowledge. As a result, this research lays the groundwork for future research on how SCD effects overall supply chain performance, paying particular attention to the pathology industry within South Africa.

3.1 Research philosophy

Research philosophy refers to the understanding of how data concerning a given topic will be gathered, analysed and used (Saunders et al., 2016).

3.3.1 Positivism research philosophy

Positivism was selected for this study as it has the ability to gather factual data knowledge and it allows collected results to be generalised over the entire population, which is one of the weaknesses of interpretivism and its subjectivity. Positivism approach was considered for this study as it involves use of high structured methodology that facilitates replication and generalisations.

3.4 Research methodology

Refers to the method or the strategy that is used to establish a structure that guides the research from start up to end (Clur, 2015). In this study due in part mostly to time constraints, quantitative research methodology was utilised as it permitted the researcher to collect and analyse the data in a shorter amount of time.

3.5 Research strategy

Research strategy is a plan of how the researcher will aim to accomplish the ultimate research goal in answering the research questions, hence every research needs to have a research strategy (Bryman & Bell, 2015). In this study, the case study research strategy was used as the study was focused on a single organisation and the research methodology adopted to answer the research questions was quantitative.

3.5.1 Case study research strategy

A case study, according to Saunders et al. (2016), is the observation of an individual unit, such as a child at school or a clique in a community. It's used to answer queries like *how*, *why*, and *what*.

This study used a case study research technique to ensure that analytical generalisations on the design and effectiveness of pathology SCs could be made. It was also selected as it allows for a deeper and more contextual exploration.

3.6 Population and sample framework

The findings of this study were extrapolated to a specific research organisation with around 400 employees. By requesting participation from laboratory managers, procurement staff, laboratory technical staff, quality assurance staff, and support service staff such as those in finance and internal risk within the organisation, who are directly affected by activities of the SC, the study attempted to gather information about SC effectiveness and perceptions of the current SCD. As a result, the goal of this research is to determine the impact of SC activities on the organisation's overall success. Table 1 shows the population for this study.

Table 1: Population and Size

Job Position	Population
Laboratory Managers	200.
Technical Specialists	
Quality Personnel	
Pathologist	
Other staff (Support)	

3.6.1 Sampling strategy and technique

Saunders et al. (2016) indicate that the sample of the population is a specific group of people you wish to collect data from and discusses two main sampling strategies - the probability sampling strategy and the non-probability sampling strategy. The probability sampling strategy was chosen in this study as it uses statistical actions to give every member of the population a chance to be selected. It is primarily used in quantitative research, which is the research methodology used in this study, and is more appropriate where the sample representatives are crucial in making inferences about the entire population (Easterby et al., 2015). In this study, stratified random sampling technique was utilised. It was utilised as it allowed the researcher to have relevant information of the population through use of strata. In this regard, the population was stratified based on the job position.

3.6.2 Sample and size

A sample, according to Bryman & Bell (2015), is a fraction of the population that will represent the total population. To determine the sample size required, a sample calculator was used.

Using a confidence level of 95% and confidence interval of 5% the sample size needed for the study was determined to be 132. The stratified sampling approach divides the population into strata based on some essential characteristics (Saunders et al., 2016). The sample was distributed proportionally within the target population.

3.7 Data collection

Data collection, according to Creswell (2015), is a set of interconnected tasks intended to gather rich data that will be utilised to answer the study's research objectives. In this study, primary research data was collected via probability, stratified random sampling, by the use of an online self-administered questionnaire.

3.7.1 Questionnaire design

The format of the questionnaire and structure has an impact on data collection. A questionnaire must be constructed in such a way that the researcher can obtain useful data from respondents (Zikmund, 2017). For this study, the questions were grouped into different sections. The questions were designed using the Likert scale which measures variables from strong agreement to strong disagreements or vice versa.

The questionnaire was divided into four subsections which allowed the researcher to group questions relating to each objective within this study and permitted the sample population to put into perspective each question when answering.

- **Section A:** This section asked for demographics of the sample population – age, education level and number of years' experience within the pathology industry.
- **Section B:** This section was designed to answer objective number 1. This section focused on the factors that influence the effectiveness of the SCD within the study organisation.
- **Section C:** This section was designed to answer objective number 2. This section focused on factors influences the effectiveness of the design of the current SC within the study organisation.
- **Section D.** This section was designed to answer objective number 3. This section focuses on recommendations on how the SC of within the study organisation can be improved.

3.7.2 Questionnaire distribution

A link to the Survey Monkey website was emailed to the sample population, and they were requested to click on the link to access the online questionnaire.

3.8 Pilot study

Once ethical clearance was confirmed with UNISA SBL, the questionnaires were handed to 8 employees in the procurement department of the study organisation. The pilot study results were analysed using SPSS 25 results showed a Cronbach Alpha of 0.90. This high Cronbach Alpha indicates that the research instrument was quite dependable. To avoid data contamination, the results of the pilot study were not included in the main study.

3.9 Administration of questionnaire

Before the survey was released, each participant received a letter of consent and participation. All responses were collated within the survey monkey platform in the form of spreadsheets, graphs and diagrams. This information was further downloaded and uploaded into SPSS version 25 for further analysis. Data from SPSS was displayed in a variety of ways, including percentages, charts, graphs, and tables. All data regarding the questionnaire was securely stored on the researchers computer and was password protected.

3.9.1 Collection of questionnaires

All responses were collated within the survey monkey platform in the form of spreadsheets, graphs and diagrams. This information was further downloaded and uploaded into SPSS version 25 for further analysis.

3.9.2 Storage of questionnaire data

A copy of the data was downloaded onto the researcher's computer. The data on the computer was kept secure because the computer is password protected and only the researcher has access to it.

3.10 Data analysis

Data from SPSS was displayed in a variety of ways, including percentages, charts, graphs, and tables.

3.10 Validity and Reliability

The Cronbach's alpha test was used to support the outcomes of this study's internal consistency reliability test. With an average of 0.90, the Cronbach's Alpha reliability test revealed very high reliability. The methodology is fine except that some more detail needed on the actual respondents as per job position..

4. Findings

The findings in this paper are also aimed at meeting the study's research questions and objectives, which is the following:

Research questions were:

- What factors influence the effectiveness of the SC Design in the Pathology Laboratories Industry?
- How effective is the SC design of the study organisation in providing downstream value to its customers?
- What recommendations can be given to improve the SC of the study organisation?

To provide reliable and compelling results, the main survey results were evaluated using statistical techniques and software (SPSS). A statistician was engaged to assure authoritative and accurate results. The internal reliability of the research instrument's constructs was determined using the Cronbach alpha coefficient. Table 2 shows the reliability statistics for the study.

Table 2: Reliability statistics

Construct	Cronbach's Alpha	No. of items
Strategic Supplier Partnership	0.541	5
Resilience capability	0.816	4
Customer Relationship	0.948	5
Inventory Control Policy at site/lab level	0.956	7
Ranking Supply Chain factors	0.841	4
Risk management capabilities	0.969	4
Effectiveness of the design of the current supply chain	0.853	7

4.1 Mean Scores: Study Constructs

In this study, the study key variables were measured on a 5-point scale, where: strongly disagree = 1, disagree = 2, undecided = 3, agree = 4, and strongly agree = 5.

t-test

Using the one-sample t-test, the mean Likert scale ratings were compared to the undecided or neutral score of 3, which was the mid-point between disagree and agree, using the t distribution.

$$T = \frac{\bar{X} - \mu}{S/\sqrt{n}}$$

Where \bar{X} is the mean score, μ is the assumed mean value (in this case, it equals to 3), S is the standard deviation of the scores, X's (where i = 1, 2, ...30) and n is the sample size.

The difference was significant and the mean score was larger than 3, the respondents agreed with the assertion. The significance threshold was set at 0.05. For example, in Table 4.6, the estimated mean score for the respondents for question 1 (Section B of the questionnaire: We consider quality as our number one criterion in selecting suppliers) is 4.03 (std. dev.=.766), which is greater than 3 (and t = 59.335, p-value=.000.01). This indicated that the respondents concurred with the assertion.

4.2 Relationships between variables

Table 3 shows the correlations between effectiveness and the factors that influence SC design. In order to measure relationships, the Pearson correlation coefficient was used. The results indicate that all the listed constructs, partnership (strategic supplier partnership), resilience (resilience capability), relationship (customer relationship), inventory (inventory control policy at site/lab level), ranking

(ranking SC factors), and risk (risk management capabilities) are highly correlated positively with effectiveness of the design of the current SC within the study organisation at the 1% level of significance, which effectively indicates that these constructs add positively to the design of the current Supply Chain.

Table 3: Correlation matrix for dependent variables

	Partnership	Resilience	Relationship	Inventory	Ranking	Risk	Effectiveness
Partnership							
Resilience	0.612**						
	0 126	1					
Relationship	0.498**	0.794**					
	0 125	0 126	1				
Inventory	0.616**	0.715**	0.790**				
	0 124	0 125	0 124	1			
Ranking	0.616**	0.715**	0.790**	1.000***			
	0 124	0 125	0 124	0 125	1		
Risk	0.523**	0.850**	0.900**	0.746**	0.746**		
	0 126	0 127	0 126	0 125	0 125	1	
Effectiveness	0.609**	0.779**	0.753**	.801**	0.801**	0.788**	
	0 125	0 126	0 125	0 124	0 124	0 126	1

Note: ** Significant at the 1% level

4.3 Regression analysis

In its most basic form, regression analysis allows market researchers to look at the relationships between one independent and one dependent variable (Sarstedt & Mooi, 2014).

4.3.1 Normality test

One of the assumptions of regression analysis is that the dependent variable is normally distributed, otherwise, the results might be invalid. The dependent variable (effectiveness) in this study was therefore tested for normality. The normal Q-Q plot of competitive advantage indicates that because almost all the dots lie on the straight line, the variable roughly follows the normal distribution.

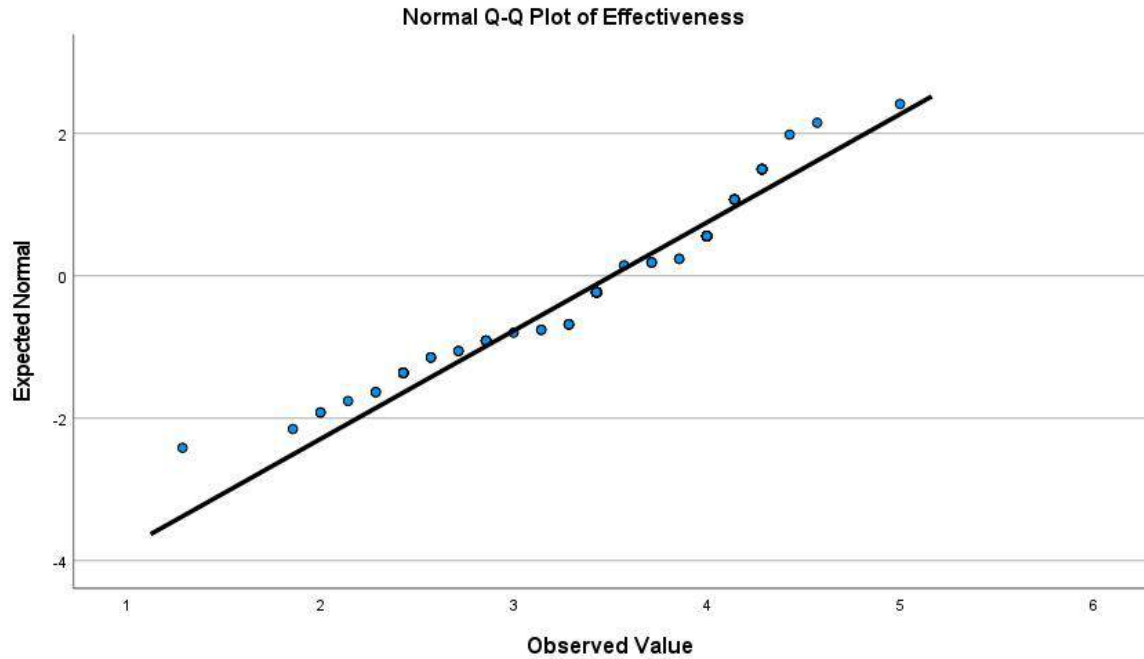


Figure 3: Normality test

Table 4: Regression model

Model	Sum of Squares	df	Mean Square	F	Prob.
Regression	39.323	5	7.865	67.976	0.000
Residual	13.421	116	0.116		
Total	52.744	121			

Adj. $R^2 = 0.735$

Variable	Coeff.	Std. Error	Beta	t	Prob.
(Constant)	0.013	0.251		0.053	0.958
Partnership	0.124	0.088	0.088	1.404	0.163
Resilience	0.227	0.094	0.231	2.404	0.018
Relationship	-0.054	0.113	-0.063	-0.482	0.631
Ranking	0.424	0.084	0.412	5.015	0.000
Risk	0.244	0.106	0.295	2.310	0.023

Table 5: Mean scores and t-test

Strategic Supplier Partnership	SD	D	U	A	SA	M	Std. Dev	t (p)	Prob.	Reject/ Accept
	1	2	3	4	5					
We consider quality as our number one criterion in selecting suppliers	3	4	5	89	26	4	0.766	15.18	0.000	Reject
We regularly solve problems jointly with our suppliers	2	3	8	96	18	4	0.666	16.64	0.000	Reject
We have continuous improvement programs that include our key suppliers	0	12	17	94	4	3.7	0.68	11.75	0.000	Reject
We include our key suppliers in our planning and goal-setting activities	1	13	13	94	5	3.7	0.738	10.74	0.000	Reject

We consider price as our number one criterion in selecting suppliers	0	46	11	57	12	3.3	1.063	2.933	0.004	Reject
Resilience capability (specifically deliveries from the warehouses)										
Our logistics system is able to adapt to the disruptive situations by quickly reengineering the logistics processes	1	15	9	99	3	3.7	0.74	10.55	0.000	Reject
Our logistics system is able to promptly and adequately respond to logistics disruptions	1	22	6	96	3	3.6	0.825	8.355	0.000	Reject
Our logistics system is able to quickly recover to the previous performance level or to a more desirable level	1	21	9	93	3	3.6	0.819	8.234	0.000	Reject
Our logistics system is able to reduce the extent of negative impacts by quick responses	2	50	11	64	1	3.1	0.992	1.07	0.287	Accept
Customer Relationship – Internal (your procurement department as a supplier)										
We frequently interact with customers to set reliability, responsiveness, and other standards for us	2	19	7	95	5	3.6	0.839	8.635	0.000	Reject
We frequently measure and evaluate our customer satisfaction	2	22	9	90	5	3.6	0.875	7.476	0.000	Reject
We frequently determine future customer expectations	1	22	12	90	2	3.6	0.823	7.544	0.000	Reject
We facilitate our customers' ability to seek assistance from us	1	18	5	98	5	3.7	0.792	9.86	0.000	Reject
You are satisfied with the overall service delivered by your procurement/supply chain department	0	22	5	94	5	3.7	0.813	8.985	0.000	Reject
Inventory Control Policy at site/lab level										
We maintain accurate information regarding the level of inventory in stock	0	67	8	48	5	2.9	1.029	-0.773	0.441	Accept
We have access to critical information about our inventory	8	59	10	46	4	2.8	1.089	-1.711	0.090	Accept
Inventory data is fully integrated across all your management systems and is accurate in real time	1	75	8	43	1	2.8	0.964	-2.934	0.004	Reject
Information generated from our inventory management system is always accurate.	0	78	12	35	2	2.7	0.93	-3.72	0.000	Reject

We have control over the inventory that comes in and leaves our site/lab	2	68	9	42	8	2.9	1.052	-1.518	0.131	Accept
We inform our suppliers in advance of changing needs	1	67	10	42	6	2.9	1.04	-1.285	0.201	Accept
We and our suppliers exchange information that helps establishment of business planning	1	52	11	59	3	3.1	1.004	0.976	0.331	Accept
Ranking Supply Chain factors										
Our strategic partnership with suppliers helps to keep our SC effective	0	13	7	103	4	3.8	0.669	13	0.000	Reject
Our relationship with our Customers plays an important role in our SC effectiveness	0	11	5	103	7	3.8	0.65	14.53	0.000	Reject
The level of information sharing within the SC helps to keep the SC effective	0	14	7	100	6	3.8	0.704	12.36	0.000	Reject
The inventory control system in place helps to keep our SC effective	0	49	5	68	5	3.2	1.017	2.53	0.013	Reject
Risk management capabilities										
Our logistics system is able to remain effective and sustain even when internal/external disruptions occur	4	18	6	96	3	3.6	0.875	7.705	0.000	Reject
Our logistics system is able to avoid or minimise risk occurrence by anticipating and preparing for them	3	17	9	96	3	3.6	0.834	8.377	0.000	Reject
Our logistics system is able to absorb a significant level of negative impacts from recurrent risks	3	18	9	95	2	3.6	0.839	7.932	0.000	Reject
Our logistics system is able to have sufficient time to consider most effective reactions	2	17	10	95	3	3.6	0.805	8.821	0.000	Reject
Effectiveness of the design of the current supply chain within the study organisation										
We always deliver our products in time	1	65	8	45	8	3	1.075	-0.495	0.621	Accept
Our Lab/depot/support services customers are satisfied with our SC Process	2	30	7	81	8	3.5	0.972	5.729	0.000	Reject
We maintain the quality and integrity of products during the SC process	1	3	6	93	25	4.1	0.635	19.21	0.000	Reject

Our SC allows us to be flexible in sourcing alternative products when primary items are on short supply/out of stock	2	24	6	89	6	3.6	0.904	7.163	0.000	Reject
We can supply products even when there is a short notice of change of requirements, i.e. amended requisition, change in testing requirements	2	25	6	92	2	3.5	0.88	6.753	0.000	Reject
Our SC is geared to service the organisations requirements	2	14	5	100	6	3.7	0.779	10.71	0.000	Reject
You are satisfied with our Supply Chain design	1	50	8	65	3	3.2	1.009	1.672	0.097	Accept
Which area would you recommend										
Strategic Partnerships with Suppliers	0	16	12	91	4	3.7	0.741	10.1	0.000	Reject
Relationship with Customers	1	15	7	93	8	3.7	0.785	10.53	0.000	Reject
Level of information Sharing	0	10	8	93	12	3.9	0.689	14	0.000	Reject
The inventory management system	0	15	6	63	40	4	0.928	12.39	0.000	Reject
Concerning SC performance, which area do you think needs more attention?										
Lead-time for stock delivery to Labs/Sites	0	16	13	83	12	3.7	0.808	10.12	0.000	Reject
Back orders/customer order fill rate	0	9	12	54	52	4.2	0.874	15.13	0.000	Reject
Delivery reliability	0	14	13	86	11	3.8	0.769	10.98	0.000	Reject
Customer satisfaction	1	12	11	55	46	4.1	0.957	12.44	0.000	Reject
Concerning supplier selection, which area do you think needs more attention?										
Cost, Quality, Service, Innovativeness	0	16	48	49	9	3.4	0.811	5.69	0.000	Reject

Table 5 shows the results of the mean scores based on the Likert scale and the t-test results for the items that were used to measure the key study variables (or constructs). These constructs were Strategic supplier partnership, Resilience capability, Customer Relationship, Inventory Control Policy, Ranking SC factors, Risk management capabilities and Effectiveness of the design. All those items for which the respondents were undecided were coloured green, and all those items for which they disagreed with are coloured blue. The results in the table indicate that respondents agreed with all the statements of strategic supplier partnership. So what – please in your own word indicate what is the main meaning of these constructs to SC.

5. Discussion

5.1 Research question 1

Research question 1 aimed to identify factors that influence the effectiveness (sentence) of the SCD within the study organisation and it was found that there are many factors, that influence SCD within the organisation such as, Inventory management, Support from top management, IT, Customer Demand, communication tools and planning. Based on the RBV theory according to Esper & Crook (2014), these resources and capabilities are what influences the organisations ability in generating a

competitive advantage over similar organisations operating in a similar environment. Also, in support of the research findings, Hitt et al. (2016) emphasised the importance of resource heterogeneity, allocation, independency, utilisation, and imitability in establishing capabilities and developing resources for the accomplishment of competitive advantage.

5.2 Research question 2

Research question was to evaluate the effectiveness of the design of the current SC within the study organisation. It was concluded that distribution management and SCV is a key area of weakness in the management of the current SC and thus effects the overall SCD negatively. According to Mehmeti et al. (2016) and Bvuchete et al. (2020), distribution management is the ability of an organisation to support the storage and movement of items in order to meet consumer demand reliably and efficiently, and as indicated within this study, the on time in full delivery rate stands at 80%, which effectively means 20% of deliveries do not happen on time. This indicates that the distribution management area needs much work, as they have a direct impact on organisational performance from a revenue generation and customer experience point of view.

It is however doubtful if the organisation warehouses always deliver products in time; and the respondents were undecided on the question of being satisfied with the SC design.

5.3 Research question 3

Research objective three aimed to provide recommendations on how the SC within the study organisation can be improved. Based on the survey participants replies to Section C of the questionnaire which was specifically designed to provide recommendations and the study literature review under chapter 2, the following is to be noted:

- 66.94% (never starting a sentence with a percentage!) of the participants agree that lead-time for stock deliveries must be improved with 9.68% strongly agreeing that this area needs improvement. This trend is similar for questions related to back order fill rates and delivery reliability questions within the questionnaire.
- 50.81% of the participants agree that the inventory management system needs improvement with 32.26% strongly agreeing that the inventory management system needs improvement.

It is therefore recommended that the research organisation improve or modify the current *in-lab* inventory management system and policy to enable accurate inventory management and visibility. The labs should also be able to utilise the min and max (write out) level methodology for accurate ordering points and this must be an ERP driven approach. In creating an environment where this is managed easily, it will ensure all *links* within the SC has the required information to make the best decision possible for ordering and delivery of inventory into the labs. This will also increase the order fill rate by ensuring the right amount of product available at the warehouse at the right time, and will allow the study organisation to remain a competitive force within the pathology industry in South Africa. IM will therefore be an essential component in creating the best turnaround time for patient results. Lastly, this recommendation must be driven by senior management to be make an impact within the organisation, as it will require a vast amount of change management.

6. Managerial Implications

Senior management within the study organisation should evaluate the current use of available IT infrastructure, and seek to improve the overall usage of available tools to improve the performance of the organisation in terms of inventory management and order fulfilment. Staff based in the laboratory must have access to real-time inventory information and this should be as automated as possible. Training and refresher training must be conducted as regularly as possible to ensure staff is using the tools available to make informed decisions. The results of this study shows the importance of SCM and SCD, and within this two spheres how the factors such as inventory management, SCV, and distribution management can have a direct impact on the profitability, and importantly, affect the organisation from a competitive advantage point of view. Furthermore, investment into systems that

provide end to end visibility of the supply chain is key to leveraging current infrastructure to create a competitive advantage and this must be made available to all staff responsible for key activities.

7. Limitations

One of the major limitations of the study was the use of a single organisation and general implications where made, which is not entirely representative of the pathology industry within South Africa.

8. Conclusion

The aim of the study was to answer the question being: ***To determine how the current SC design of the case organisation affects organisational performance in a highly competitive environment, paying particular attention to the delivery of inventory into the laboratories.*** This study's theoretical framework attempted to comprehend SCD in the context of using internal resources and competencies to gain a competitive advantage. The conceptual framework ensured that the research instrument was targeted and geared toward obtaining themes and core findings linked to the study's subject.

This research study was designed to determine how the current supply chain design of the case organisation effects organisational performance in a highly competitive environment, paying particular attention to the delivery of inventory into the laboratories. The study was based on a South African based pathology organisation. The objectives of the study was to identify areas of weakness in the current supply chain design and recommend areas for improvement. The findings and recommendations will assist senior management to focus on key areas within the supply chain and implement corrective action plans and initiatives. These plans will be used to mitigate the hurdles identified in the pursuit of end user satisfaction with the supply chain performance, while also potentially reducing overstocking situations, thereby reducing overall inventory cost. In conclusion, this research study addressed the research issues by recommending solutions to the research problem of determining how the current supply chain design effects organisational performance.

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